The Eutaxiological Argument and Apophatic Theism

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Abstract

This thesis proffers a novel argument from order for the existence of God called the eutaxiological argument. It maintains the universe's order and existence is fundamentally grounded in *logos* (λογος) or Mind. Unlike teleological design arguments, the eutaxiological argument is not concerned with the alleged end or purpose of some physical entity—e.g., the human eye, the *bacteria flagellum,* or the universe taken as a whole. It is, instead, concerned with the fact that the universe is ordered. It, thus, makes a distinction between 'order' and 'telos'. It argues that exemplifying essential order is both a necessary and sufficient condition for the existence of physical entities—and, indeed, for the existence of the universe—and that we need not think of physical order in terms of goals, purposes, or final causation.

Unlike most contemporary arguments for God's existence, the eutaxiological argument argues for the existence of God as conceived of by apophatic theism. According to apophatic theism, the term 'God' denotes a unique, ontologically distinct, ineffable, *logos* that fundamentally grounds the universe's order and existence from nothing. Historically, one can find proponents of apophatic theism in numerous philosophical and religious traditions—including some strands of Hinduism, Judaism, Neoplatonism, Christianity, and Islam. Its most ardent Christian exponents come from the Eastern Christian tradition. This dissertation offers a fresh defence of apophatic theism inspired by the Eastern Christian tradition. It responds to serious objections regarding the coherence of divine ineffability and the supposed logical incompatibility of apophatic theism with Christianity.

For Rosemary, Esther, Rachel, Joel, Emiliana, Flora, and Juniper with much love.

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Introduction

This thesis proffers a novel argument from order for the existence of God called the eutaxiological argument. The term 'eutaxiological' was coined by Lewis Ezra Hicks (1883) in his obscure book, *A Critique of Design Arguments*. Hicks introduced the term—which he derived from the Greek word εὐταξία or 'good order'—to denote a unique class of design argument that, before him, no one had explicitly recognised. According to Hicks, eutaxiological arguments do not neatly fall under the traditional categories of teleological and cosmological reasoning and, thus, deserve their own name. Unfortunately, this distinction has virtually been ignored by analytic philosophers of religion. On the rare occasion that it is referenced in the literature it is nearly always mentioned in passing and usually in a prelude to some extended treatment of the teleological design argument (C.f., Barrow, 1986 pp.28-29; Barrow, 2007 p.140; Corey, 1993 p.10; Craig, 1988 p.389; Manson, 2003 p.2; Weber, 2013 p.279).

Unlike teleological arguments, however, the eutaxiological argument is not concerned with the alleged end or purpose of some physical entity—e.g., the human eye, the *bacteria flagellum,* or the universe taken as a whole. In other words, it does not treat the universe as an artefact or contrivance and then use this as evidence that it is the product of an intelligent agency. On the contrary, the eutaxiological argument is merely concerned with the fact that the universe is ordered. It, thus, makes a distinction between the concept of 'order' and the concept of 'telos'. It argues that exemplifying essential order is both a necessary and sufficient condition for the existence of physical entities and that we need not think of physical order in terms of goals, purposes, or final causation.

The eutaxiological argument is also concerned with a different intelligence indicator than teleological arguments. Roughly, an intelligence indicator is a marker that indicates whether an intelligent agency or Mind fully or partially explains a given phenomenon. Teleological arguments are concerned with the following indicator: *Whenever an entity, x, has been contrived for some end or purpose, this indicates an intelligent agency or Mind either fully or partially explains the existence of x.* Coupled with the underlying assumption that only intelligent agents have the natural power to contrive an entity for some *end* or *purpose,* this marker is supposed to warrant a belief that an intelligent agency caused a given entity, *x's*, existence.

In contrast, eutaxiological arguments are concerned with the following indicator: *Whenever an entity, x, conforms to an ordering principle (i.e., an exemplar or plan), this indicates an intelligent agency or Mind either fully or partially explains the existence of x.* Coupled with the underlying assumption that only intelligent agents have the natural power to conceive of or ground ordering principles, this marker is supposed to warrant a belief that a given entity, *x*, depends on an intelligence or Mind for its existence. I will say a great deal more about teleological and eutaxiological intelligence indicators in due course.

While Hicks' work clearly inspires my project, most of this thesis is dedicated to defending an original version of the eutaxiological argument. Following a longstanding tradition in natural theology, I have divided the argument into two stages. *Stage One* attempts to show there exists an entity, *x*, such that the universe's order is grounded in (and, thus, metaphysically explained by) *x*. It can be formally represented as follows:

Eutaxiological Argument: Stage One
(1) The universe is ordered.

(2) If the universe is ordered, it has a ground of its order.

(3) Therefore, the universe has a ground of its order.

I refer to the entity, *x*, that grounds the universe's order as *logos* (λογος).[i] During my development of *Stage One* I spend a great deal of time clarifying what I mean by the terms, 'physical', 'order', 'the universe', and 'ground'. I, later, draw heavily on my exposition of these concepts, and related metaphysical principles, in *Stage Two* of the eutaxiological argument.

Stage Two proffers arguments that show *logos* should be identified as God—but not just any conception of God. It argues *logos* should be identified with God as conceived of by *apophatic theism*. One can find different iterations of apophatic theism in various philosophical and religious traditions—including some strands of Hinduism, Judaism, Neoplatonism, Christianity, and Islam.[ii] Some of its most ardent Christian exponents come from the Eastern Christian tradition.[iii] Its advocates include such luminaries as St Irenaeus of Lyons, St Athanasius the Great, Origen of Alexandria, the Cappadocian Fathers, Pseudo-Dionysius, St Maximus the Confessor, St John of Damascus, and St Gregory Palamas. In *Stage Two* I defend a form of apophatic theism inspired by its Eastern Christian exponents.

To better understand what I mean by *apophatic theism* it is helpful to contrast it with the conception of God that predominantly occupies the minds of contemporary analytic philosophers of religion. With few exceptions, analytic philosophers have primarily focused their attention on theism as it developed in Western Europe; represented by such towering medieval figures as St Augustine, St Thomas Aquinas, and, especially, St Anselm and early modern figures such as Renee Descartes, Nicolas Malebranche, and Gottfried Wilhelm Leibniz. Over time a standard conception of theism has emerged within analytic philosophy that stems from this tradition. I refer to this conception of God as *theistic personalism*.[iv] At a bare minimum, a theistic personalist is committed to the following thesis:

[i] For more on the ancient Greek term *logos* see Hillar (2012), Moss (2014), and de Beer (2015).
[ii] For more on ancient Hindu, Jewish, Neoplatonic, and Islamic conceptions of God see Dube (1984), Moses Maimonides (1963, originally 1190), Putnam (1997), Pearl (2007), and Ali (2016).
[iii] The term 'Eastern Christian' is a broad category. Typically, it is used to denote Christianity as it developed outside the Western half of the Roman Empire epitomised by the Latin or Roman Catholic Church. The ecclesial bodies usually associated with the term 'Eastern Christian' include the Eastern Orthodox Church, Oriental Orthodox Church, and various Orthodox Churches in communion with the Roman Catholic Church. In the context of this dissertation, when I use the term 'Eastern Christian' I especially have in mind Orthodox Christians from the Byzantine tradition whose theology and spirituality is heavily influenced by the Greek Fathers.
[iv] The term 'theistic personalism' was introduced in Davies (2003) to distinguish between the standard conception of theism endorsed by analytic philosophers of religion and the classical conception expounded by ancient thinkers. For other philosophers who use the term see Hart (2013), Feser (2017), Pouivet (2018), and Grimi (2018). Stenmark (2015) uses an equivalent term, 'personal theism', to denote the God of theistic personalism. Likewise, Bishop and Perszyk (2017) use the equivalent term 'personal omniGod' and Schellenberg (2015) uses the equivalent term 'personal ultimism'. In saying that theistic personalism stems from the Western Christian tradition, I am *not* making the anachronistic claim that the historical figures I listed above (especially the Latin Medieval ones) were theistic personalists. I am also *not* claiming analytic philosophers have, overall, done a good job interpreting ancient philosophers like St Thomas or St Anselm. On the contrary, I think analytic philosophers often *misinterpret* them due to their general lack of interest in the subtleties of historical analysis and exegeses. I am, rather, noting two things. First, analytic philosophers of religion have

> Theistic personalism *simpliciter* (TPS): there exists a person, *P*, such that necessarily, *P* possesses the maximal-person properties (i.e., omnipotence, omniscience, and omnibenevolence) simultaneously.

Proponents of TPS, therefore, take the term 'God' to be a personal pronoun that refers to the person, *P*, who necessarily possesses the maximal-person properties simultaneously. They disagree, however, about a great many things. To begin with, there is no consensus regarding how one should conceive of the maximal-person properties.[v] Additionally, some proponents of theistic personalism maintain the universe is ontologically distinct from God, while others are *pantheists* who believe the universe is, ultimately, identical to God; still, others, are *panentheists* who believe the universe is, in some sense, *in* God.[vi] There are also disagreements among theistic personalists over whether, for example, God is temporal or atemporal; and over whether God is a sustaining cause of the universe's existence or, merely an originating cause of the universe's existence (as *deists* believe). Despite these significant differences, however, proponents of TPS virtually all adopt a *cataphatic* conception of God according to which it is epistemically possible to come to know what kind of being God is, i.e., to know what God's essential properties are.

A great deal more can, and will, be said about the concept of theistic personalism that I have so quickly canvassed. For now, however, I have said enough to contrast theistic personalism with apophatic theism. Unlike theistic personalists, proponents of apophatic theism are—at a bare minimum—committed to the following thesis:

> Apophatic theism *simpliciter* (ATS): there exists a unique *logos* or Mind, *L*, such that: (i) *L* is simple, (ii) *L* is ontologically distinct from the universe, (iii) the universe's order and existence is fundamentally grounded in *L* from nothing, and *(*iv*), L* is ineffable.

Notably, proponents of ATS do not take the term 'God' to be a personal pronoun; rather, they take it to denote the unique, simple, ontologically distinct, ineffable, *logos* that fundamentally grounds the universe's order and existence from nothing. As we shall see, however, although *logos* is not a person—in the same sense that human beings or other animals are said to be persons—the fact that *logos* is the fundamental ground of the universe's order-existence from nothing entails it is analogous to an intelligent agency or Mind (a conclusion which I argue for in Chapter 5). Finally, and very importantly, unlike proponents of TPS, proponents of ATS adopt an apophatic conception of God according to which it is epistemically *impossible* to know God's essence (which is to say, they believe God is ineffable).

I anticipate most will find the brief account of apophatic theism I just gave extremely problematic. The reason being that it seems straightforwardly incoherent. It seems inconsistent for me to affirm that *logos* is ineffable yet bears properties like 'being ontologically distinct' or 'being the fundamental ground of the universe's order-existence'.

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been heavily influenced by Western thinkers, most especially St Anselm. Second, for better or for worse (some, including myself, would say for worse), a standard conception of theism has arisen among analytic philosophers that stems from and is heavily influenced by the Western Christian tradition of which the thinkers I listed are a part.
[v] For some helpful discussions about the various ways contemporary philosophers interpret the divine attributes (i.e., what I refer to as the 'maximal-person properties') see Everitt (2010), Oppy (2014), Mawson (2018).
[vi] For pantheistic accounts of theistic personalism see Coleman (2019) and Lancaster-Thomas (2020).

The astute reader is likely to point out that it seems as if I am affirming the following contradiction: <We can know God's properties, and we cannot know God's properties>. What is worse, I have also claimed that apophatic theism is compatible with Christianity. Yet, this also seems straightforwardly false. For every Christian tradition affirms, we can know many of God's essential properties. If this is true, how can a Christian theologian consistently hold that God is ineffable? I want to assure the reader I am aware of these difficulties. As I develop *Stage Two*, I respond to these and other serious objections regarding the coherence of divine ineffability and the supposed logical incompatibility of apophatic theism with Christianity. Without further ado, let us proceed to Part 1.

Part I

The Eutaxiological Argument: Stage One

I. Introduction

Part 1 develops and defends *Stage One* of the eutaxiological argument. It has the following structure. In Chapter 1, I provide some historical context for eutaxiology and explain how it differs from traditional teleological reasoning. I begin by analysing the *Ancient Argument from Order (AAO)*. Most interpret AAO as a teleological argument. According to Hicks, however, a closer examination reveals that one can also formulate AAO eutaxiologically. Analysing AAO, thus, allows me to introduce and explain Hicks' key distinction between 'order' and 'telos'. Additionally, it opens the door for me to explain the difference between teleological and eutaxiological intelligence indicators. After this brief excursion through ancient history, I shift my focus onto expounding Hicks' version of the argument. In so doing, I outline the general structure of eutaxiological reasoning and contrast it with the general structure of traditional teleological reasoning. I conclude this chapter by explicating and responding to a *prima facia* objection to the eutaxiological-teleological distinction that I refer to as the Thomistic Objection (TO).

The rest of Part 1 focuses on defending an original version of the argument. In Chapter 2, I seek to clarify what the term 'the universe' denotes. While, at first, this may seem like a mere pedantic exercise, it soon becomes clear that what one means by 'the universe' is important when constructing an argument for the existence of God. This is especially true of the eutaxiological argument. After mapping out the standard taxonomy of 'the universe', I explain that the eutaxiological argument utilises a physicalist conception of the universe. According to this conception, 'the universe' refers to the total collection of all physical entities. I then build upon my explication of the physicalist conception of the universe to respond to two objections I anticipate will be levelled against my argument: the God-of-the-Gaps Objection (GOGO) and the Multiverse Objection (MO). I explain how contemporary teleological and cosmological arguments are vulnerable to these objections because they adopt *theory-laden* conceptions of the universe. In contrast, I argue, the eutaxiological argument is not susceptible to these objections because it utilises a physicalist conception of the universe. Taking time, therefore, to explicate what 'the universe' means, proves to be an essential step towards removing ambiguity from *Stage One* and defending it from anticipated objections.

In Chapter 3, I endeavour to clarify the physicalist conception of the universe further. There are two primary questions I seek to answer. The first question is '*What is a physical entity?'*. Or, put differently, *'What does the term 'physical' denote?'*. The second question is, '*What is the nature of physical order?'*. I maintain that how one answers the first question—namely, what one takes the term 'physical' to denote—is inextricably tied to how one answers the second question regarding the nature of physical order. In answering these questions, I develop what I call the *order-based* conception of the physical. After doing so, I draw on the *order-based* conception to proffer several supporting arguments for the truth of premise (1) of the eutaxiological argument.

Chapter 4 shifts its focus onto premise (2). I begin by clarifying another critical aspect of the argument; namely, by explaining the concept of 'ground' and the notion of metaphysical explanation. Following this, I develop a supporting argument for the truth of premise (2). Unlike most contemporary teleological and cosmological arguments, I do not defend premise (2) by appealing to a metaphysical thesis like the Principle of Causality (POC) or the Principle of Sufficient Reason (PSR). On the contrary, I grant, for the sake of argument, that explanatorily brute facts are metaphysically possible; and, thus, that strong formulations of POC and PSR are false. Nevertheless, I argue it is never reasonable to believe

that any given unexplained fact of our experience, *F*, is explanatorily brute. From this I defend the further claim that it is far more reasonable to believe premise (2) is true than false.

If my explication and defence of *Stage One* of the eutaxiological argument is successful, the following existence claim obtains:

> *Stage One* existence claim: there exists a *logos*, *L*, such that the universe's order is grounded in *L*.

Besides predicating of *logos* that it has the property 'being the ground of the universe's order', I do not seek to identify any more of its properties until Part 2.

Chapter One: The Nature of Eutaxiological Argumentation

1. Introduction

Lewis Ezra Hicks (1883) is the first person to make a distinction between two basic categories of design argument: (i) those that are concerned with the alleged end or purpose (i.e., *telos*) of some physical entity in the universe (or the universe taken as a whole), and (ii) those that are concerned with the fact that the universe is ordered.[1] He labelled arguments that fall into category (i) teleological design arguments. Conversely, he labelled arguments that fall into category (ii) eutaxiological arguments design arguments (Ibid. p.v;6-8). Most readers will likely find this distinction woefully unclear. After all, 'order' and 'telos' are closely related terms. It is not uncommon for one to use the word 'order' to mean 'for the purpose of', as in the following sentence: "I wrote this chapter in *order* to show the difference between teleological and eutaxiological arguments". So, how exactly is an argument from the orderliness of the universe supposed to be different from a teleological argument? The goal of this chapter is to answer this question.

More specifically, this chapter aims to explicate the nature of eutaxiological reasoning and explain its place in the history of natural theology. I achieve this by carefully considering the *explanandum* that allegedly sets it apart from other, similar, arguments for God's existence. In so doing, I can clarify what the term 'order' means in the context of the eutaxiological argument and show how it differs from the concept of 'telos'.[2] I also carefully consider the *intelligence indicator* that sets the eutaxiological argument apart from teleological arguments. An intelligence indicator is a marker that reveals whether an intelligent agency or Mind fully or partially explains a given phenomenon. Building on these discussions, I then outline the general structure of eutaxiological reasoning and show how it differs from the structure of teleological argumentation.

Consequentially, I have organised Chapter 1 as follows. In Section 1.1., I begin by discussing *The Ancient Argument from Order*. Anaxagoras introduced this argument and, later, it was adapted by Stoic, Jewish, and Christian philosophers. According to Hicks, one can formulate it in one of two ways: teleologically or eutaxiologically. Understanding how one might do this is the first step to clarifying the difference between teleological and eutaxological reasoning. In Section 1.2, I build upon this discussion by carefully analysing Hicks' original formulation of the eutaxiological argument and explicating the general structure of his argument. Finally, in Section 1.3., I consider and respond to a *prima facia* objection to the teleological-eutaxiological distinction, which I refer to as the Thomistic Objection (TO).

1.1. A Brief Excursion Through History

In his ground-breaking book, *A Critique of Design Arguments*, Hicks carefully traced the design argument, from its ancient origins, through its medieval iterations, to its various formulations by early modern philosophers. He aimed to show there are, in fact, two ways of interpreting design arguments: either eutaxiologically or teleologically. Doing so provided an occasion for him to explain the nature of eutaxiological reasoning better and allowed him to

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[1] In this dissertation I use the term 'physical entities' very broadly to include everything from electromagnetic fields, elementary particles, atoms, molecules, medium sized entities like rocks, trees, and animals, to macroscopic entities such as planets, solar systems, and galaxies.
[2] Although, I will not develop a fine-grained definition of 'order' until Chapter 3.

situate the argument within the history of natural theology. Following Hicks' lead, I shall begin by considering an argument from order originally put forth by Anaxagoras and later adapted by ancient Stoic, Jewish, and Christian philosophers. For the sake of concision, I refer to this argument as the *Ancient Argument from Order* (AAO).[3] The aim of this brief excursion through history is to show that, depending on the type of *explanandum* one begins with, and on what intelligence indicator one is concerned with, it is possible to formulate a design argument either eutaxiologically or teleologically. Accomplishing this task will go a long way towards helping the reader understanding the nature of eutaxiological reasoning.

One may wonder why I have chosen to limit myself to analysing AAO as it was developed by Pre-Socratic, Stoic, Jewish, and early Christian philosophers (rather than surveying arguments from order as they appear throughout the entire history of natural theology). The reason I have opted to limit myself in this way is because the primary aim of this chapter is to expound on the nature of eutaxiological reasoning. I simply do not need to survey the entire history of design arguments to accomplish this aim. Furthermore, as will become clear, AAO seems to have been the inspiration for Hicks' thesis, and closely resembles the novel formulation of the eutaxiological argument I defend throughout the rest of this dissertation. Indeed, one might think of AAO as a kind of evolutionary precursor to my argument. As such, it provides the ideal springboard for the chapters that follow.

1.1.1. Pre-Socratic and Stoic Arguments from Order

Anaxagoras is one of the earliest recorded proponents of AAO. Unfortunately, we only possess fragments of his writing that scholars have meticulously pieced together from various ancient sources. Recently, Anna Marmodoro (2017) translated these fragments and attempted to reconstruct Anaxagoras' metaphysics. Her translation of Anaxagoras' design argument runs as follows:

> Whatever sorts of things were going to be, and whatever sorts were and now are not, and as many as are now and whatever sorts will be, all these *Nous* set in order. And *Nous* also ordered this revolution, in which the things being separated off now revolve, the stars and the sun and the moon and the air and the aether. This revolution caused them to separate off (Ibid., p.141).

A point of clarification must be made to help make this passage more understandable. Anaxagoras' metaphysics holds that ontologically prior to *Nous* (i.e., Mind or intelligence) having imposed order on the universe, the universe was a uniform, undifferentiated, homogenous, unidentifiable mixture of stuff. His aim in this passage, therefore, is to explain in virtue of what this primordial, undefined, material stuff is ordered or "separated off" into distinct types of physical entities behaving in different characteristic ways. He believes the best explanation of this phenomena is *Nous.* Before considering why he thinks this, let us pause to examine more closely the phenomena, he is attempting to explain.

Anaxagoras is, specifically, concerned with the order that obtains in physical entities like the stars, the sun, and the moon and, presumably, other everyday physical objects that we

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[3] I by no means intend to suggest there is but one ancient argument from order. On the contrary, one can find numerous discrete design arguments in the writings of ancient philosophers. The one I focus on in this chapter, however, was particularly prominent. Indeed, one can find a continuous chain of philosophers from different traditions adapting and re-presenting this argument for hundreds of years. I have chosen to refer to it as the *Ancient Argument from Order* primarily for the sake of elegance and concision but, also to clearly demarcate it from teleological tradition that stems from William Paley (2006, originally 1802).

perceive, e.g., rocks, trees, animals, etc. For Anaxagoras, there appear to be two ways in which physical objects are ordered. The first has to do with the fact that physical entities appear to be discrete types or kinds of things. In this sense, to say that physical entities are ordered seems to mean something like saying they instantiate different forms or structures. Furthermore, this fact—i.e., the fact that physical entities instantiate different structures—is supposed to explain what separates one thing (e.g., a rock) from another thing (e.g., a tree).

It is not, however, merely the structure or arrangement of physical entities into different kinds that Anaxagoras is concerned with. He also conceives of order in terms of the regular patterns of behaviour that physical entities engage in—e.g., the revolution of the stars and planets. So, in Anaxagoras, we can discern two types of phenomena or examples of order: namely, the fact that there appear to be different kinds or types of things, and the fact that these different kinds of things behave in characteristic or regular ways. As we will see, Anaxagoras's conception of physical order (or, at least, something remarkably like it) has been adapted by many thinkers throughout the centuries. Indeed, in Section 1.2, we will discover that contemporary philosophers, like Richard Swinburne, have, roughly, the same phenomena in mind when they talk about physical entities being ordered.

Now that I have discussed the *explanandum* that Anaxagoras is concerned with, we can consider the following question: *Why does Anaxagoras appeal to Nous to explain the orderliness of the universe?* Since only fragments of his writing have survived, this is a difficult question to answer. Clearly, Anaxagoras assumes order—i.e., the fact that there appear to be different kinds or types of things, and the fact that these different kinds of things behave in characteristic or regular ways—can only be explained by an intelligence. We can only guess as to why he holds this assumption. A closer look at the concept of *Nous*, however, may provide us with enough information to make an educated guess.

For Anaxagoras, *Nous* seems to be an organising principle or architect that imposes a type of pattern or structure onto the universe. Anaxagoras speaks about *Nous* using anthropomorphic language. As Marmodoro notes, "Anaxagoras conceived of *nous's* causal action on the universe in anthropomorphic terms—doing, or making things happen, ruling over them, as a human being would, and not as (or, not only as) a purely physical cause would" (Ibid., p.141). From this, it seems reasonable to surmise that Anaxagoras takes the orderliness of the universe to be the product of something analogous to a human mind because he thinks the ability to organise matter so that it conforms to some structure or pattern, is a power or activity unique to intelligent agencies. Our regular mundane experience confirms that minds can conceive of different patterns and structures and choose to physically instantiate them. An artist, for example, can conceive of a shape and then conform a lump of clay to that shape. An architect can conceive of a floorplan of a building and commission builders to construct a house based on that plan. A gardener can conceive of the layout of a garden and till the ground and plant seeds and tend to the growth of the plants and construct walls to actualise the type of garden she has in mind. Perhaps, then, Anaxagoras believes *Nous* provides the best explanation for the universe's order precisely because intelligent agents seem to have the unique power to conceive of different ways homogenous stuff—like clay, or rock, or wood, or dirt—can be ordered, and the ability to (directly or indirectly) impose various design plans onto stuff?

Whatever the case may be, the fact that Anaxagoras speaks of *Nous* using anthropomorphic language, has led most to assume he is making a teleological argument.[4] It is easy to see why. After all, artists, architects, and gardeners, act intentionally or purposively. Presumably, an artist imposes some shape on a lump of clay with some end or goal in Mind, e.g., she finds the form aesthetically pleasing and wants it to spark joy in the hearts of those who see it. An architect designs a house to meet specific needs, to function in particular ways; indeed, houses are built to serve a purpose. So, it is easy to see why one might interpret Anaxagoras's argument from order as a primitive precursor to something like William Paley's (2006, originally 1802) famous *Watchmaker* argument (I will say more on this argument in Section 1.2).

It is here, however, that Hicks asks us to pause and ask an important question: *Must we interpret Anaxagoras's argument teleologically?* According to Hicks, it is not obvious that we should. If one reads carefully, Anaxagoras never explicitly appeals to ends or purposes in the universe (or to the end or purpose of the universe as a whole) as evidence that there is a designing intelligence. Rather, the *explanandum* Anaxagoras is attempting to explain is merely the fact that there appear to be separate or distinct physical things of different kinds, and the fact that these different kinds of things behave or move in regular ways. Furthermore, the indicator of intelligence he seems to be concern with is not the fact that intelligent agents contrive artefacts for a purpose, but, rather, the fact that intelligent agents have the natural power to conceive of different ways stuff can be organised and the ability to conform stuff to different design plans.

For this reason, Hicks argues Anaxagoras is not making a teleological argument but, rather, a eutaxiological one. As he explains:

> … instead of arguing from the marks of contrivance [i.e., from ends or purposes] to Mind as their source, he [i.e., Anaxagoras] fixed his attention upon the harmony and beauty of the cosmos, and assumed the existence of Mind as a necessary hypothesis to account for the steady course and orderly sequences of nature. His notion of the *voûs* was that of a world-ordering force producing the broad and deep harmonies of the cosmos, rather than that of a being directing events to special ends. That is, his argument was eutaxiological instead of teleological (Hicks, 1883 pp.48-49).[5]

The distinction Hicks is making is subtle but important. The *explanandum* that teleological arguments are concerned with is the supposed fact that, for example, the parts of some physical entity, *x*, appear to be structured for an end or purpose, *y*. So, for example, one might claim that the human eye is structured for the purpose of producing visual images and proceed to argue that only an intelligent agency can fully explain this fact. Likewise, one might claim the physical constants of the universe are fine-tuned to produce and sustain organic life and proceed to argue that only an intelligent agency can fully explain this fact. Hicks notes, however, that Anaxagoras does not do this. Anaxagoras never explicitly appeals

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[4] For a contemporary assessment of Anaxagoras's argument from order which interprets it teleologically see Jantzen (2014).

[5] It is unclear why Hicks maintains Anaxagoras was concerned with the harmony and beauty of nature since he (i.e., Anaxagoras) does not refer to harmony or beauty in his formulation of the design argument. I can only assume Hicks takes the term 'harmony', in this instance, to mean something like 'well-arranged' or 'well-proportioned'. Accordingly, in using the term 'harmony' Hicks seems to be referring to Anaxagoras's concern with distinct physical entities behaving in different ways yet, somehow, conjoined as a unique ordered whole. As to the term 'beauty', philosophers have recognised a deep connection between order and beauty since ancient times (Cf., Lorand, 2000).

to ends or purposes (i.e., *telos*) in nature to make his case. Hence, according to Hicks, he is not making a teleological argument but a eutaxiological one.

It is important, at this juncture, not to get hung up on exegesis. Whether Hicks's interpretation of Anaxagoras's argument is ultimately correct—given the textual evidence and the historical context—is not what we are concerned with here. A historian might push back and provide evidence that, *contra* Hicks, Anaxagoras was making a teleological argument. But this is no matter. What is important, at present, is simply to note the subtle distinction Hicks is making. Whether one thinks we ought to interpret Anaxagoras's design argument teleologically is not of primary interest here. What *is* interesting, and what Hicks wants to direct our attention to, is that it is not apparent that one *must* appeal to teleology in nature to argue that the universe is the product of intelligence. Which is to say, AAO can plausibly be formulated as a eutaxiological argument.

Much more can and will be said about Hicks's ideas in Section 1.2. Let us forego any questions we might have, for the moment, and continue our brief excursion through history. Moving forward in time, we see a slightly more advanced version of Anaxagoras's argument proffered by Stoic philosophers. An outline of the Stoic argument from order is preserved for us by Cicero in his seminal work *De Natura Deorum*. To be exact, Cicero proffers four distinct design arguments. As Jantzen helpfully explains, in *De Natura Deorum* one can identify what he refers to as an 'argument from order', an 'argument from purpose', an 'argument from providence' and an 'argument by analogy' (Jantzen, 2014 p.36). It is only the first of these four arguments—i.e., what Jantzen calls the 'argument from order'—that I am concerned with here. Cicero, speaking through the character Quintus Lucilius Balbus, maintains that one good reason for believing in the existence of an overarching intelligence or Mind is the orderliness of the physical world. As he explains:

> … the uniform motion and revolution of the heavens, and the varied groupings and ordered beauty of the sun, moon and stars, the very sight of which … [is] ... itself enough to prove that these things are not the mere effect of chance. When a man goes into a house, a wrestling-school or a public assembly and observes in all that goes on arrangement, regularity and system, he cannot possibly suppose that these things come about without a cause: he realises that there is someone who presides and controls. Far more therefore with the vast movements and phases of the heavenly bodies, and these ordered processes of a multitude of enormous masses of matter, which throughout the countless ages of the infinite past have never in the smallest degree played false, is he compelled to infer that these mighty world-motions are regulated by some Mind (Cicero 2014, originally 45BC, pp.137-138).

Developing the same line of reasoning, Cicero (through the mouth of Balbus) later exclaims that:

> if it so happened that the first sight of the world perplexed them [i.e., ancient philosophers], afterwards when they had seen its definite and regular motions, and all its phenomena controlled by fixed system and unchanging uniformity, to infer the presence not merely of an inhabitant of this celestial and divine abode, but also of a ruler and governor, the architect as it were of this mighty and monumental structure (Ibid., p.211).

As with Anaxagoras's design argument, the Stoic version of AAO is not explicitly concerned with teleology—i.e., the alleged fact that the parts of a physical entity are structured for an end or purpose or that the universe as a whole is designed for a purpose. Instead, he is merely concerned with the fact that physical entities behave in regular characteristic ways, like the

regular predictable movements of the stars and planets. Unlike Anaxagoras, however, Cicero explicitly highlights another aspect of the concept of order; namely, the concept of uniformity and systematicity. Specifically, he points to the fact that the various physical entities that compose the universe form an interlocking harmonious or well-arranged system.

Cicero then infers that an intelligent agency or Mind must be invoked to fully explain the universe's order. In my analysis of Anaxagoras's argument, I noted that our regular mundane experience confirms that minds possess the unique power to conceive of different design plans and the power to (either directly or indirectly) physically instantiate them. An artist, for example, can conceive of a shape and conform a lump of clay to that shape. An architect can conceive of a floorplan of a building and commission builders to construct a house based on that plan. A gardener can conceive of the layout of a garden and till the ground and plant seeds and tend to the growth of the plants and construct walls to actualise the type of garden she has in mind. Unlike Anaxagoras, Cicero more explicitly expresses this point. He uses the example of a trainer imposing a design plan onto a wrestling-school. Presumably, then, Cicero believes that whenever order obtains it is brought about by some intelligence or Mind because minds have the unique power to conceive of and realise design plans. Importantly, Cicero also believes the Mind that explains the universe's order is also continually and intimately involved in regulating and maintaining its order. As we shall see, St Athanasius heavily emphasises this in his version of AAO.

If one reads the other Stoic design arguments proffered by Cicero, it is manifestly clear that the Stoics believed there is teleology in nature and that the universe, in its entirety, exists for an identifiable end or purpose. It is, thus, legitimate for one to interpret Cicero's version of AAO as a teleological argument. To do this, one might simply identify an additional (unstated) teleological premise; one that maintains the universe is ordered for an identifiable end or purpose. This is, however, of little consequence. I am not making the historical claim that the Stoics were trying to formulate a eutaxiological argument. What is interesting is that it is not obvious that one *must* construe the Stoic argument from order as a teleological one. The reason being, the *explanandum* Cicero appeals to is not teleological. He merely points to the fact that the universe exemplifies structure and systematicity, and that physical entities behave in regular characteristic ways. At no point does Cicero, explicitly, appeal to ends or purposes in nature in proffering this particular argument; nor is it obvious that he needs to. Furthermore, the intelligence indicator he is concerned with seems to be the fact that ordered entities conform to some design plan; and, only, intelligent agents can conceive of a design plan. We shall conclude our brief excursion through history by considering an ancient Jewish and early Christian version of AAO.

1.1.2. Jewish and Christian Arguments from Order

One of the most significant synthesisers of Jewish and Hellenistic thought in the ancient world was Philo of Alexandrea. In him, we see a sophisticated blending of biblical theology, with both Stoic and Middle-Platonic philosophy. Philo seemed especially interested in demonstrating how Hellenistic natural philosophy was consonant with, and even supportive of the creation account in the book of Genesis. Unsurprisingly, therefore, we find in the works of Philo a slightly more robust version of AAO. Unlike Anaxagoras's and Cicero's version, Philo begins his argument by discussing artefacts, such as statues, garments, ships, and houses, and the intelligent agencies that are responsible for bringing about their existence:

> It has invariably happened that the works which they have made have been, in some degree, the proofs of the character of the workmen; for who is there who, when he looks upon statues or pictures, does not at once form an idea of the statuary or painter himself? And who, when he beholds a garment, or a ship, or a house, does not in a moment conceive a notion of the weaver, or shipbuilder, or architect, who has made them? (Philo of Alexandria 1993, originally, 20-50BC p.537)

There are several ways one might interpret this passage. Perhaps Philo is thinking teleologically? It seems plausible that Philo is making an observation very similar to the one famously made by William Paley (2006, originally 1802) centuries later; namely, that the existence of an artefact—like a pocket-watch—could only arise with the aid of some intelligent agency. We should be careful, however, in proffering this anachronistic interpretation. Paley is thinking mechanistically. He makes his argument by noting that the parts of a pocket-watch could not, of their own accord, come together to perform the function of telling time. For Paley, the fact that the components of a mechanism, like a pocket-watch, do not have the power to arrange themselves to achieve an aim, is why it requires an intelligent agency—i.e., someone who intentionally arranged its parts to perform a function like telling time. Philo, however, makes no such argument—at least, not explicitly. One can, of course, argue that Philo is implicitly assuming something like Paley's reasoning. It is not, however, evident he is making such a claim.

Indeed, a closer look reveals there is another way we might interpret Philo. In the passage I just cited he notes that when one comes across an artefact, like a work of art, she *immediately* recognises the intellect that designed it. The critical question is, 'Why does one immediately recognise the intellect who designed an artefact when she comes across one?'. Is it merely because we recognise its parts have been contrived for some end or purpose? Philo never explicitly makes this assertion. If we look at Philo's other writings, however, we discover that there is another important indicator of intelligence that he may have in mind here. Elsewhere, he writes the following regarding the *preconceived plan* an architect forms in his Mind before constructing a city:

> He [the architect] … first of all sketches out in his own Mind nearly all the parts of the city which is about to be completed—the temples, the gymnasia, the prytanea, and markets, the harbour, the docks, the streets, the arrangement of the walls, the situations of the dwelling houses, and of the public and other buildings. Then, having received in his own Mind, as on a waxen tablet, the form of each building, he carries in his heart the image of a city, perceptible as yet only be the intellect, the images of which he stirs up in memory which is innate in him, and, still further, engraving them in his Mind like a good workman, keeping his eyes fixed on his model, he begins to raise the city of stones and wood, making the corporeal substances to resemble each of the incorporeal ideas. Now we must form a somewhat similar opinion of God, who, having determined to found a mighty state, first of all conceived its form in his Mind, according to which form he made a world perceptible only by the intellect, and then completed one visible to the external senses, using the first one as a model (Ibid., p.4).

Here Philo is more explicitly stating what we surmised Anaxagoras and Cicero had in mind; namely, that preconceived design plans, exemplars, or models are indicators of intelligence. As we shall see in Section 1.2., this point is significant for Hicks. When we encounter an artefact, like a city, or a work of art, we immediately and unconsciously recognise that it conforms to an ordering principle (i.e., an exemplar or plan) that specifies how its parts relate to each other.[6] According to Hicks, this explains why we cannot help but infer there is an

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[6] Hicks prefers to use the terms 'design plan' or 'model' but I have opted to use the term 'ordering principle'.

intellect or Mind behind the universe. The universe is ordered, meaning its numerous constituents conform to an ordering principle, and only intellects ground the existence of ordering principles.

For Hicks, the concept of an ordering principle—that specifies the way some set of entities, *E*, relate to each other—is distinct from the concept of an end or purpose for which something is built. When a cosmologist constructs a mathematical model of the universe, she is not assuming the universe was designed for an end or purpose. Rather, she is assuming the universe conforms to an ordering principle of some type—i.e., that there is an objective structure or pattern that it conforms to. She is, thus, merely attempting to explicate what this ordering principle is. The best cosmological models are ones that most accurately describe the actual behaviour and structure of the universe (where accuracy is determined by scientific observation and testing). As we shall see, the claim that the universe conforms to an ordering principle is a hallmark of eutaxiological reasoning.

At present, let us keep our focus on Philo's design argument. What is most important to consider is that we do not have to interpret Philo's version of AAO as a teleological argument. There is evidence that he was thinking eutaxiologically.[7] Having made this import point, let us turn our attention to the rest of Philo's argument:

> If anyone comes into a well-ordered city, in which all parts of the constitution are exceedingly well arranged and regulated, what other idea will he entertain but that this city is governed by wise and virtuous rulers? He, therefore, who comes into that which is truly the greatest of cities, namely, this world, and who beholds all the land, both the mountain and the champagne district full of animals, and plants, and the streams of rivers, both overflowing an depending on the wintry floods, and the steady flow of the sea, and the admirable temperature of the air, and the varieties and regular revolutions of the seasons of the year; and then too the sun and moon … and the revolutions and regular motions of all the other planets and fixed stars, and of the whole heaven; would he not naturally, or I should rather say, of necessity, conceive a notion of the Father, and creator, and governor of all this system … (Ibid.).

As with previous versions of AAO, Philo is not explicitly concerned with the alleged fact that the parts of physical entities are arranged for a purpose, or with the alleged fact that the universe is ordered for a purpose. Rather, the *explanandum* he is concerned with are facts like the fact that there exists an abundance of discrete kinds of physical entities—e.g., different types of animals, plants, and various types of biomes—and the fact that there are patterns or regularities in nature, e.g., weather patterns, seasons, and the revolution of the stars and planets. Furthermore, the indicator of intelligence he seems interested in is the Mind's unique ability to conceive of different design plans and to instantiate them physically.

To be sure, and as I have already suggested above, one could take his version of AAO to be a teleological argument. Philo is taking the universe, with its rich diversity of different physical entities, arranged to form a unified and mutually dependent system, to be an artefact like a city, or a sculpture. Indeed, it is incontrovertible that artefacts are contrived for ends or purposes. Thus, one could make the case that, in comparing the universe to an artefact, Philo is making a teleological argument. Nevertheless, it is significant that Philo never explicitly appeals to aims, goals, ends, or purposes (i.e., *telos*) to make his argument. It is equally

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[7] To be clear, I am not making the historically inaccurate claim that Philo knew of the distinction between eutaxiological and teleological arguments. Rather, I am saying that, retrospectively, one might accurately *describe* Philo's reasoning as being eutaxiological.

significant that he does not explicitly appeal to the fact that intelligent agents have the power to contrive parts for some end or purpose as an indication that there is a Mind behind the universe's order.

Let us conclude this section by considering a version of AAO proffered by the Greek Patristics. A paradigmatic example of this can be found in the writing of St Athanasius the Great, the highly influential fourth-century Bishop of Alexandria. In his apologetic work, *Contra Gentes*, he responds to atheistic strands of ancient pagan philosophy by developing a version of AAO. He begins by citing the dynamic arrangement of the heavenly bodies as evidence that there is an overarching intelligence:

> For seeing the circling of the heaven and the course of sun and moon, the positions and revolutions of the other stars, which are opposed and different but in their difference all keep a common order, who would not think that they do not order themselves but that there is another who orders them and who made them? (Athanasius 1971, originally 335, p.97).

One thing that is unique about St Athanasius' treatment of the argument is his emphasis on the fact that different types of physical entities possess conflicting properties—e.g., some physical entities are solid and firm, while others are soft and pliable, some are hot and others are cold, etc. What St Athanasius finds striking about this fact is that, despite the numerous conflicting properties instantiated by physical entities, they form a unified, systemic, whole. As he elaborates:

> Who, seeing natural opposites united and keeping harmonious concord—for example, seeing fire mixed with water and the dry with the moist, not in hostility to each other but making a unity like a single body—who would not consider that their binding agent was acting from outside them? … these discordant and naturally opposed entities would not have combined had there not been a superior being and master, who joined them together and to whom the elements themselves yield and obey as slaves to their Lord … For there should have occurred great discord among them, the one burning, another making cold, the heavy inclining downwards but the light in opposition rising upwards, the sun shining but the air causing darkness … In such circumstances one would have seen no longer order bud disorder, no longer system but anarchy, no longer unity but all in confusion, no longer symmetry but chaos … But since there is not disorder but order in the universe, and not chaos but symmetry, and not confusion but system and a harmonious ordering of the world, we must consider and form an idea of the master who unites and binds the elements together, bringing them into harmony. For even if he is invisible to our eyes, yet from the order and harmony of these opposites we can gain an idea of their leader, governor, and king (Ibid., pp.99-103).

One can clearly hear echoes of St Athanasius's intellectual predecessors in his formulation of AAO. Particularly with his focus on the revolutions of the heavenly bodies, and the existence of numerous different types of physical entities, and on the fact that all the physical entities form a unified dynamic arrangement. What is especially notable, however, is that St Athanasius (like Cicero) explicitly asserts that the author of the universe's order (i.e., God) is ongoingly involved in sustaining the unity and integrity of its order. In other words, God is ultimately responsible for maintaining the dynamic arrangement of the universe's numerous parts.

In contemporary metaphysical terminology, this amounts to the claim that God grounds the universe's order at every moment of its existence. While St Athanasius doesn't get into the nitty-gritty details, or specify the type of grounding relation that obtains between God and the universe's order, it is not difficult to construct a model that describes what this

grounding relation might be like. I submit that we should think of the grounding relation that obtains between God and the universe's order as being analogous to that of a performative ground. A performative ground obtains when the activity of an agent grounds a particular concrete instance of a dance or musical composition. As when, for example, a dancer performing the Jazz Walk grounds a concrete instance or token of the Jazz Walk in the world. Or when a pianist performing Beethoven's piano concerto no 4 grounds a particular concrete instance or token of Beethoven's piano concerto no 4. We might conceive of God's relation to the universe's order as being analogous to this type of grounding relation. Instead of engaging in the act of performing a type of dance or musical composition, however, God is engaging in the act of willing that a type of ordering principle is realised in the world; and, instead of grounding a particular concrete instance or token of some dance or musical composition, God's activity grounds a particular concrete instance of a type of ordering principle (namely, the order exemplified by the universe). I will say much more about this notion in Chapter 6.

For now, let us move away from rampant speculation, and return to St Athanasius's argument. Like his predecessors, St Athanasius also uses anthropomorphic language when talking about the source of the universe's order, e.g., describing it as a master, leader, governor, or king. One can, therefore, like all the previous iterations of AAO, plausibly interpret St Athanasius as proffering a teleological argument. To do this, one might expound upon some unstated premise in his argument. For example, one might argue that the numerous discrete physical entities that compose the universe are dynamically arranged for some identifiable purpose. This wouldn't be difficult because, elsewhere in his book, St Athanasius explicitly states that God "so ordered creation through his Word that although he is invisible by nature, yet he might be known to men from his works", and he repeats this assertion on multiple occasions (Ibid., p.95).

However, the critical point here is not defending the exegetical claim that St Athanasius was proffering a eutaxiological argument. The crucial point is that it is not apparent that we must interpret his version of AAO teleologically. St Athanasius never explicitly appeals to ends or purposes while formulating his argument; instead, he talks about the orderliness of the universe. Specifically, he talks about patterns and regularities in nature, and about the different kinds of physical entities that instantiate radically different, and often conflicting, properties, and he talks about how all these discrete physical entities form a unified system. Furthermore, he argues that there exists a numerically distinct intelligent agency that sustains or grounds the universe's order at every moment of its existence. All of this suggests that one can formulate St Athanasius's version of AAO as a eutaxiological argument.

1.1.3. Concluding Remarks on the Ancient Argument from Order

Before proceeding to the next section, it is wise to summarise some of the key points made throughout this brief excursion through history. Our examination of AAO has allowed us to make some important observations about the nature of eutaxiological reasoning. It has allowed us to distinguish between the type of phenomena traditional teleological arguments are concerned with, versus the type of phenomena eutaxiological arguments are supposed to be concerned with. We can represent this concisely with the following table:

Teleological Arguments	Eutaxiological Arguments
Explanandum – 'telos'	*Explanandum – 'order'*
1. The fact that the parts of some physical entity, *x*, are contrived for some identifiable end or purpose or to perform some function *y*. 2. The fact that the universe (taken as a whole), is contrived for some identifiable end or purpose.	1. The fact that there are discrete kinds of physical entities, i.e., the fact that physical entities are structured in different ways. 2. The fact that physical entities behave in regular ways, i.e., there are patterns and regularities in nature. 3. The fact that the physical entities that compose the universe are unified and form a system.

Figure 1.1 Explanandum

Furthermore, during my survey of AAO, I also distinguished between two different intelligence indicators. Recall that an intelligence indicator is a marker that specifies whether an intelligent agency or Mind fully or partially explains a given phenomenon. We can represent the respective intelligence indicators teleological, and eutaxiological arguments are concerned with using the following table:

Teleological Arguments	Eutaxiological Arguments
Type-A Intelligence Indicator	*Type-B Intelligence Indicator*
1. Whenever an entity, *x*, has been contrived for some end or purpose, this *indicates* that an intelligent agency or mind either fully or partially explains *x*. *Underlying Assumption*: Only intelligent agents have the natural power to contrive an entity for some *end* or *purpose*.	1. Whenever an entity, *x*, conforms to an ordering principle, this *indicates* that an intelligent agency or mind either fully or partially explains *x*. *Underlying Assumption*: Only intelligent agents have the natural power to conceive of an ordering principle, i.e., only minds ground the existence of exemplars or plans.

Figure 1.2 Intelligence Indicators

Hopefully, now that we have analysed AAO and identified several crucial differences between teleological and eutaxiological argumentation, the nature of eutaxiological reasoning is becoming clearer. There are, however, still several ambiguities that need to be addressed. A big one being that the concept of 'order' is somewhat ambiguous. It denotes a broad range of phenomena, and it is not clear how these phenomena relate to each other. Furthermore, we would do well to have a better grasp of the general structure of eutaxiological reasoning versus the general structure of teleological reasoning. To help address these issues, we will, now, turn our attention to considering Hick's formulation of the eutaxiological argument.

1.2. Hicks' Formulation of the Eutaxiological Argument

As Figure 1.1. indicates, teleological design arguments are concerned with the alleged end or purpose (i.e., *telos*) of physical entities in the universe or the universe taken as a whole. Some paradigmatic examples of the type of *explanandum* important for teleological arguments that Hicks cites include the supposed fact that eyes are configured for the end or purpose of generating visual images, the fact that feet are structured for the purpose of walking, and ears to hear (Ibid., pp.10-11). Here, I believe, Hicks has in mind design

arguments like William Paley's (2006, originally 1802) *Watchmaker* argument.[8] Paley famously opens his inquiry by envisioning a scenario in which one is strolling on the beach and encounters both a rock and a pocket watch. He argues that, unlike the rock, one would immediately recognise that the watch is the product of intelligence. As he explains:

> … when we come to inspect the watch, we perceive (what we could not discover in the stone) that its several parts are framed and put together for a purpose, e.g. that they are so formed and adjusted as to produce motion, and that motion so regulated as to point out the hour of the day; that, if the several parts had been differently shaped from what they are, of a different size from what they are, or placed after any other manner, or in any other order, than that in which they are placed, either no motion at all would have been carried on in the machine, or none which would have answered the use, that is now served by it (Ibid., p.46).

Note that what Paley is concerned with is not the fact that a pocket watch conforms to an ordering principle, but with the fact that it is contrived *for a purpose*. Hicks, on the other hand, adamantly asserts that eutaxiological design arguments are *not* concerned with this at all. Indeed, Hicks considers it an advantage of eutaxiological reasoning that its proponents can happily concede with philosophical naturalists, for the sake of argument, that physical entities do not exhibit teleology as human mechanisms do.

For Hicks, the eutaxiological argument is strictly concerned with the fact that the universe is ordered; which is a fact that is presupposed by modern science and, thus, not nearly as controversial as the existential facts that teleological arguments are focused on. As with AAO, Hicks' conception of order is also very general. It encompasses a broad range of different phenomena. Including, as it were, the synchronic structure or arrangement of a physical entity's parts, and the diachronic patterns and regularities exemplified by physical things over periods of time. Consider the following crucial passage:

> Physical science is a classified knowledge of external nature; but the possibility of classification, and therefore of science, lies in the fact that there is first a natural, external order, whence arises the logical, internal order in the arrangement of facts and principles, which constitutes true science. The external order existed before the science which is based upon it. There was celestial harmony before the science of astronomy was constructed by formulating the laws and principles gathered from observation of the heavens. What, then, is this impressive fact of celestial harmony—this majestic and orderly movement of vast bodies through boundless space—what is it but a divine *thought* impressed upon the cosmos? Chemical combinations obey the law of definite and multiple proportions: can nature count then? Crystals present, some simple and complete, others modified and complex, geometrical forms: is nature a geometrician? Plants and inferior animals are built upon the radiate plan, the higher animals having, on the contrary, distinct right and left sides, dorsal and ventral aspects … Then there are the 'types of structure' in zoölogy—a definite pattern or fashion running through whole classes and sub-kingdoms; a plan it would seem, and so the comparative anatomists call it. Thus we might go on through all the sciences, and see, over and anon, some new principle of order standing out like a creative thought. This eutaxiological argument, then, seems to have no end to it; for order is universal in nature … there is no end to the examples of it, but they are all essentially alike. Order in the heavens is the same principle as order in the setting of leaves on a tiny plant, or of the sparkling facets of a minute crystal (Hicks, 1883 pp.17-18).

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[8] Paley's highly influential work can truly be considered the grandfather of all contemporary teleological design arguments. Including the controversial Intelligent Design movement (Cf., Dembski & Ruse (2004), Behe (1996), Meyer (2010)) and the Fine-Tuning argument (C.f., Craig (2003) and Collins (2009)). All of these arguments share the same basic argumentative structure outlined in figure 1.3.

One cannot help but notice how similar Hicks's argument is to that of Philo of Alexandria's version of AAO.[9] The biggest difference is that Hicks' argument is informed by the latest developments in nineteenth-century science. Aside from that, we see that the *explanandum* Hicks is concerned with is very similar to that of AAO. Furthermore, as with Philo, he believes the fact that physical entities conform to design plans (i.e., ordering principles) indicates that they are grounded in *thoughts* or *divine ideas*. Thus, he is concerned with the same intelligence indicator as Philo. Let us explore both Hicks' conception of 'order' and the type-B intelligence indicator more closely.

First, consider Hicks' concept of 'order'. Like his ancient predecessors, he offers numerous different examples of order but, despite his claim to the contrary, it is *not* immediately obvious what he means by 'order'. Which is to say, he never explains how these disparate examples are "essentially alike". Hicks cites examples from natural history, botany, chemistry, and geology as evidence that there is order in the universe; these examples seem to indicate 'order' is a *synchronic* term that denotes the structure or arrangement of a composite object's parts at a given time. Yet, he also cites the regular movements of the heavenly bodies (i.e., the orbit of the planets in our solar system) and later in the book the geological study of "wave-action"—i.e., the codifiable stratification of materials on a beach produced by the force of waves—as examples of order (Ibid., pp.17; 357-358). These examples seem to indicate 'order' is a *diachronic* term—denoting the regular, codifiable, behaviours or movements of physical entities over a period of time. Unfortunately, he never explains how these different phenomena can be united under a single *genus*: namely, that of 'order'. Consequentially, Hicks does not go any further towards clarifying the concept of 'order' than his ancient predecessors.

In his defence, however, contemporary philosophers have not done much better. For example, consider Richard Swinburne's (2004) teleological argument. In it, he begins by identifying two basic categories of order: what he terms 'spatial order' and 'temporal order' (Ibid., p.154). According to him, 'spatial order' denotes the co-present structure, arrangement, or configuration of a physical entity's parts, or of the members of a set of physical entities, at a given time. For example, to say of a water molecule that it is 'spatially ordered' is to point out that, at a given time, its hydrogen and oxygen atoms maintain a tetrahedral shape with a bond angle of 104.5 degrees. The set of molecules that compose a crystal are 'spatially ordered' just in case, at a given time, they conform to a design plan, e.g., many crystals exemplify a hexagonal shape. To say of a set of chairs in an auditorium, *C*, that they are 'spatially ordered' refers to the fact that at a time, say t_1, the chairs exemplify a pattern; e.g., at t_1 they are arranged in rows of twenty, two inches apart, and all facing east. A set of books in a library may also be 'spatially ordered' at t_1 if they conform to an ordering principle; namely, if they are arranged in 'alphabetical order'.

'Temporal order', on the other hand, denotes the regular, codifiable, behaviour or activities of physical entities in the universe at distinct periods of time (Ibid., p.154-55). For example, to say of a water molecule that it is 'temporally ordered' is to refer to the fact that water molecules (and sets of water molecules forming a body of water) behave in regular, codifiable, ways under different circumstances; e.g., boiling when heated, becoming solid when cooled to a specific temperature, acting as a universal solvent, etc. To say of the planets in our solar system that they are 'temporally ordered' refers to the fact that they follow

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[9] Considering how remarkably similar Hicks's argument is to Philo's, it is especially odd that he does not discuss Philo's design argument or even reference it in his book.

regular, codifiable, orbits around the Sun and rotate at a regular, codifiable, rate around their axes. Like a 'spatially ordered' entity, 'temporally ordered' entities conform to a pattern or principle.

Like Hicks, however, Swinburne does not explain why he groups 'spatial order' and 'temporal order' under the single *genus* 'order'; neither does he develop a clear definition of the concept of 'order' that he has in mind. This is frustrating because, on a *prima facia* reading, it is difficult to see how these disparate phenomena relate to each other. For example, the rotation of a planet over a period of time is quite different from the intrinsic structure of a water molecule's parts at a time; yet both are supposed to be paradigmatic examples of order. The ambiguousness of the term 'order', thus, presents a taxonomic challenge for the eutaxiological argument. Thankfully, it is not an insurmountable one. In Chapter 3 I develop what I call the *order-based* account of the physical. In so doing, I develop a definition of physical order that encompasses both spatially and temporally ordered entities. Presently, however, we must content ourselves with the following tentative definition of order:

> Tentative Definition of Order (TDO): A physical entity, x, is ordered if it exemplifies spatial or temporal order.

Let us, now, shift our attention to the type-B intelligence indicator Hicks is concerned with. Like Philo, Hicks is focused on the following type-b intelligence indicator outlined in table 1.1.: *Whenever an entity, x, conforms to an ordering principle, x is fully or partially explained by an intelligent agency or Mind*. The assumption underlying this principle is that ordering principles are ontologically dependent entities; meaning, their existence is grounded in the existence of a mind or intellect. Hicks' reasoning seems to entail that, when a type-B intelligence indicator obtains, one is warranted a belief that an entity, x, that comprises some fact of our experience, F, depends on an intelligence or Mind for its existence.[10] Indeed, Hicks considers a reliance on the type-B intelligence indicator to be one of the hallmarks of a eutaxiological inference. As Hicks explains:

> The fundamental proposition of eutaxiolgly is that order and harmony are marks of intelligence. They imply that there has been a preconceived plan, to which the phenomena in question have been made to conform (Hicks, 1883 p.18).

Later he states:

> The key-note of eutaxiology is plan, as that of teleology is purpose … the elements of the eutaxiological proof, or the fundamental conceptions involved in it, are, (1) the fact of order in nature; (2) the plan, or the mental conception of that disposition of objects and that movement of forces which constitute order and harmony" (Ibid., p.19).

At this point, it is vital to address a possible problem. One might mistakenly believe Hicks is making a design inference logically equivalent to that which is rigorously defended by William Dembski (1998) in his important book *The Design Inference*. Dembski attempts to build a logico-mathematical apparatus that can be used to eliminate explanations that track with chance or laws of nature. His apparatus relies on the latest advances in probability and complexity theory. According to Dembski, "specified events of small probability do not

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[10] To be clear, the term 'type-B intelligence indicator' is one of my own invention; it cannot be found in Hicks' writing. Nevertheless, I believe this concept accurately describes Hicks' ideas.

occur by chance" (Ibid., p.5). As he explains it, a 'specified event' or 'specification' is a non-*ad hoc* pattern that one may use to eliminate chance and, thus warrant an inference to design (p.13). He uses the following example to illustrate:

> … when an archer first paints a fixed target and thereafter shoots at it, she specifies hitting a bull's eye. When in fact she repeatedly hits the bull's-eye, we are warranted attributing her success not to beginner's luck, but to her skill as an archer. On the other hand, when the archer paints a target around the arrow only after each shot, squarely positioning each arrow in the bull's eye, she fabricates hitting the bull's eye. Thus, even though she repeatedly hits the bull's-eye, we are not warranted attributing her "success" in hitting the bull's-eye to anything other than luck (pp.13-14).

Dembski proceeds to develop this concept with tremendous detail and mathematical precision (which, for the sake of brevity, I will omit here). For present purposes, this passage provides enough information about Dembski's project to determine whether it is anything like Hicks's.

I do not believe it is remotely close to what Hicks has in Mind. Dembski's notion of specification seems very similar to the idea of a type-A intelligence indicator. On Dembski's schema, a pattern constitutes a specification if some end or goal delimits the events that conform to the pattern. Consider the example above (which he returns to throughout his book). The end or goal specified by the archer is hitting the bull's eye. Once we know this, says Dembski, it is not reasonable to attribute the events involving the archer successfully, and repetitively, hitting the bull's eye to random chance or laws of nature. This is because the pattern—i.e., repetitively hitting the bull's eye—to which the events involving the archer repeatedly hitting her mark conform, constitutes a specification. In this case, the pattern is literally aimed at hitting a target or goal. Furthermore, argues Dembski, it is highly improbable for an arrow to continuously hit a fixed mark without the aid of a guiding intelligence. Given that the pattern in question is both specified and highly improbable, he believes we are warranted an inference to design. Meaning, the best explanation for this pattern is one that tracks with an intelligent agent intentionally shooting arrows at the target and continuously hitting the mark due to her great skill.

As we have seen, however, Hicks is not going through anything like this kind of logical process to infer design. He is not interested in discerning whether specific ends or goals delimit a pattern. Rather, he is interested in showing that physical entities that are spatially or temporally ordered, conform to an ordering principle. We can tentatively take the term 'ordering principle' to denote an exemplar or plan that specifies the way some set of entities, *E*, relate to each other (I will proffer a more fine-grained definition in Chapter 3). Note that an ordering principle, in this sense, does *not* specify the end or purpose according to which a given ordered relation obtains. In summary, then, Hicks's inference to design is predicated on the type-B intelligence indicator and is, thus, distinct from Dembski's notion of a design inference.

Having addressed this possible point of confusion, it is now prudent for us to focus on the general structure of eutaxiological argumentation versus the general structure of traditional teleological argumentation. According to Hicks, teleological arguments constitute an argument *from* design; where 'design' is taken to denote the following *explanandum*: the fact that some physical entity is contrived for some end or purpose. In contrast, rightly understood, Hicks considers the eutaxiological argument to be an argument *for* design; where 'design' is taken to denote the fact that some physical entity or entities conform to an ordering principle. As Hicks explains it:

… if your argument is teleological, then "design" means "adaptation of means to an end," and it is an argument *from* design; that is, from the fact of adaptation, as a premise, to an intelligent author of that adaptation as a conclusion. But, if your argument is eutaxiological, then "design" means "plan," and it is an argument *for* design; that is, the fact of order in nature is your premise, from which you infer a preconceived plan, or design, as a conclusion (Hicks, 1883, p.28).

We can represent the different structures of teleological and eutaxiological design arguments with the following flow charts:
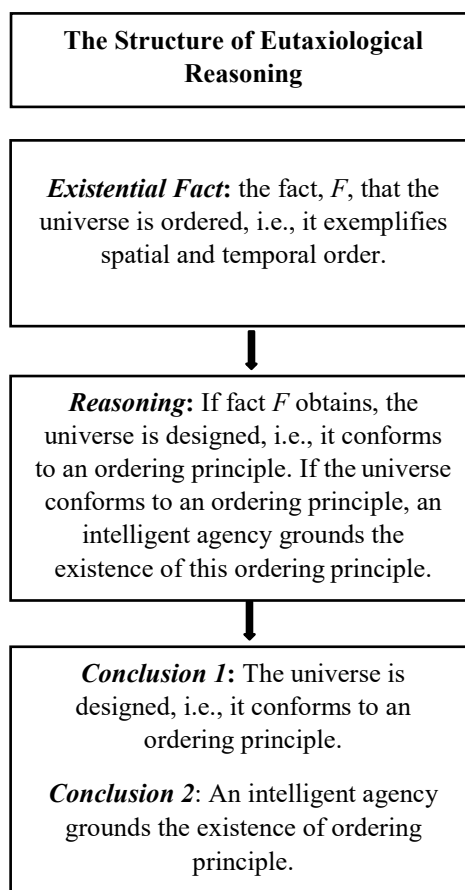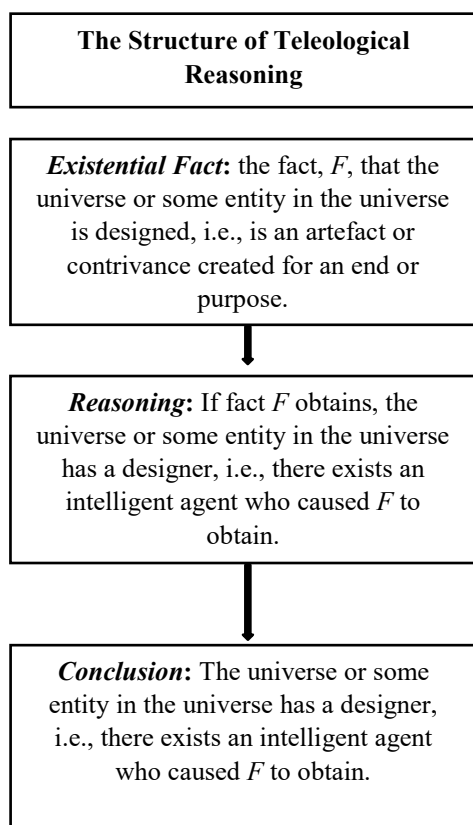

The Structure of Teleological Reasoning	The Structure of Eutaxiological Reasoning
Existential Fact: the fact, *F*, that the universe or some entity in the universe is designed, i.e., is an artefact or contrivance created for an end or purpose.	***Existential Fact***: the fact, *F*, that the universe is ordered, i.e., it exemplifies spatial and temporal order.
Reasoning: If fact *F* obtains, the universe or some entity in the universe has a designer, i.e., there exists an intelligent agent who caused *F* to obtain.	***Reasoning***: If fact *F* obtains, the universe is designed, i.e., it conforms to an ordering principle. If the universe conforms to an ordering principle, an intelligent agency grounds the existence of this ordering principle.
Conclusion: The universe or some entity in the universe has a designer, i.e., there exists an intelligent agent who caused *F* to obtain.	***Conclusion 1***: The universe is designed, i.e., it conforms to an ordering principle. ***Conclusion 2***: An intelligent agency grounds the existence of ordering principle.

Figure 1.3 Structure of Teleological Reasoning   **Figure 1.4** Structure of Eutaxiological Reasoning

Unlike his ancient predecessors—particularly Cicero, Philo and St Athanasius—Hicks does not believe the eutaxiological argument, on its own, grants us the conclusion that God exists. As we saw in Section 1.1., Cicero, Philo, and St Athanasius attribute the intelligence or Mind underlying the universe's order, to God. Furthermore, as we especially saw emphasised by St Athanasius, God is taken to be actively and ongoingly involved in grounding the universe's order. Hicks, on the other hand, upholds a far more modest conclusion:

The utmost that can be claimed from this argument alone is, that intelligence exists in the universe. A personal Supreme Being is not proved; volition is not proved; benevolence is not proved; even intelligence is not provided to be infinite. But the proof of intelligence pervading all nature is no mean result in itself, and may pave the way to further results in the direction of a reasonable proof that there is a God (Ibid., p.368).

The novel version of the eutaxiological argument I defend throughout the remainder of this thesis follows the same general structure outlined in figure 1.4. Meaning, I begin with the same existential fact, i.e., the fact that the universe is ordered. From this I proceed to argue that the ground of the universe's order, or *logos* as I refer to it, is analogous to an intelligence or mind. At no point does my argument rely on attributing ends or purposes to non-cognitive physical entities. There are, however, several notable differences between Hicks' formulation and mine.

To begin with, in *Stage One* I carefully analyse the concept of 'the physical' and the concept of 'order' and conclude that we cannot understand the former without understanding the latter. From this analysis, I develop what I call the *order-based* conception of the physical. In developing the *order-based* conception of the physical, I accomplish two important things. First, I derive a definition of 'order' that encompasses both instances of spatial and temporal order (thus, resolving the taxonomic problem facing Hicks' version of the eutaxiological argument). Second, as will become clear in Part 2, developing the *order-based* conception of the physical allows me to reach a much stronger conclusion than Hicks. More specifically, it enables me to develop arguments that entail *logos* is identical to God as conceived of by apophatic theism.

In any event, now that I have explicated the nature of eutaxiological reasoning, it is time to respond to a *prima facia* objection one might put forth to undermine the eutaxiological-teleological distinction. For reasons that will become clear, I refer to this as the Thomistic Objection (TO).

1.3. The Thomistic Objection

Until now, I have exclusively focused on comparing and contrasting eutaxiological reasoning with early modern and contemporary teleological arguments. Specifically, with teleological arguments that stem from and are akin to William Paley's famous *Watchmaker* argument. There is, however, a variation of the teleological argument that was proffered by St Thomas Aquinas. Aquinas's argument, the fifth of his famous "Five Ways" proffered in the *Summa Theologeia*, is distinct from early modern and contemporary teleological reasoning. For, unlike Paley style design arguments, the *Fifth Way* is not mechanistic.[11] Meaning, it does not conceive of physical entities as contrivances, like human-made artefacts, whose parts have been extrinsically arranged to perform some task.

On the contrary, the *Fifth Way* is concerned with the fact that all physical entities, including both cognitive and non-cognitive entities, are intrinsically structured to act in accordance with specific ends or goals. Or, put differently, it is concerned with the fact that material objects insatiate *forms* that determine their *final causes*. As we shall see, if the Thomistic metaphysical principles that underly the *Fifth Way* are true, a *prima facie* case can be made that the order-telos distinction breaks down and that, in consequence, the teleological-eutaxiological distinction breaks down. I refer to this objection as the Thomistic Objection (TO).

Let us jump right into the details. The *Fifth Way* can be formulated as follows:

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[11] For more details on the differences between Aquinas's and Paley's design arguments see Kronen and Menssen (2012), Feser (2013), and Newton (2014).

The Fifth Way
(1) There are some things that lack cognition yet act for ends.
(2) Anything that lacks cognition does not act for an end unless it is directed by something that is cognizant and intelligent.
(3) Thus, there is something intelligent by which all natural things are ordered to their ends.
(4) This thing we call God. (Pawl, 2011 p.124).

Before considering any of the argument's premises, I must make an important observation. While the *Fifth Way* is different from Paley style design arguments, it roughly follows the same structure outlined in figure 1.3. Recall that, according to 1.3., teleological design arguments are arguments *from* design; meaning, they move from the fact that the universe or things in it are designed to the conclusion that it is the product of an intelligent cause. Likewise, the *Fifth Way* begins by noting that non-cognitive physical entities are designed; namely, they possess an intrinsic structure or form that grounds the fact that they are goal-directed or move towards particular ends. It presumes that acting for an end or purpose is and indicator of intelligence and, from this, argues that there is an intelligent cause of the universe's design. Thus, while it is different from Paley style design arguments, it still follows the same general structure of teleological argumentation. Having clarified this, let us now consider the key premise, at least for our purposes, which is premise (1).

Premise (1) of the *Fifth Way* states there are things in the universe that lack cognition yet "act for ends"; which is to say; there are inanimate, non-cognitive, objects and stuff that seem to be goal-directed. According to Thomistic metaphysics, the ends for which a non-cognitive physical entity exists—i.e., the goals its behaviour is directed towards—are referred to as its 'final cause'. Edward Feser (2014) uses the example of an ice cube to illustrate this. Feser maintains ice cubes behave in predictable ways, moving toward particular ends (e.g., remaining solid so long as they maintain their core temperature, melting when exposed to heat, etc.) and, according to Feser, this is in virtue of the intrinsic structure or *form* they instantiate. Gaven Kerr explains the relationship between an entity's *form* and its *end* or *purpose* (i.e., *telos*) as follows:

> A thing acts for an end, that is, displays goal-directed behavior, in virtue of the form that it has; and its specific end is determined by its specific form. It follows from all this that finality or goal-directed behavior is intrinsic to natural substances, something that they exhibit in virtue of what they are (Kerr, 2018 p.455).

So, according to Thomistic metaphysics, there is an ontological dependence relation that obtains between a physical entity's *form* or structure and its *final cause* (i.e., the end or purpose for which it exists).

There is much more one could say regarding the *Fifth Way* and Thomistic metaphysics. Indeed, I have only very briefly canvassed some hefty philosophical ideas. However, it is beyond the scope of this chapter to explicate the *Fifth Way* and its attendant Thomistic metaphysical principles in detail. The point of this brief exposition of the *Fifth Way* is to expound on TO. Fortunately, the outline I just provided is all I need to do that.

TO amounts to the claim that, given Thomistic metaphysics, the order-telos distinction, and consequentially, the teleological-eutaxiological distinction, breaks down. To see why, first, recall that according to the tentative definition of order (TDO) outlined in

Section 1.2., 'order' partially denotes spatial order. If we take Aquinas' concept of 'form' to be something like 'structure', and if 'spatial order' is partially concerned with the way a physical entity is intrinsically structured at any given time, then it is evident that, a physical entity's intrinsic spatial order is analogous to a Thomistic *form*. Given this, a proponent of Thomistic metaphysics might argue that an entity's intrinsic spatial order (i.e., its form) is what determines or grounds its *telos*. Thus, whenever we talk about a physical entity's intrinsic spatial order we are, implicitly, assuming it has a *telos*. This alone may cause one to worry about the integrity of the order-telos distinction. The problem, however, is more substantial than this.

According to TDO, the term 'order' also denotes temporally ordered phenomena, i.e., the regular, codifiable, behaviour or activities of physical entities over periods of time. As we saw, from the standpoint of Thomistic metaphysics, the regular, codifiable, behaviour of a non-cognitive physical entity, *x*, just is *x* acting for some end or purpose. Think, again, of the ice cube. A Thomist maintains the ice cube's regular, codifiable, behaviour (e.g., remaining solid so long as it maintains its core temperature or melting when exposed to heat) just is the ice cube engaging in goal-directed or purposive behaviour. Accordingly, it can be asserted that one cannot coherently talk about temporal order without presupposing teleology or final causation.

Herein lies the problem. If an entity's intrinsic spatial order grounds its *telos* a Thomist will argue that once one accepts that a physical entity exemplifies spatial order she is also committing herself to the notion that physical entities are ordered for the sake of some end or purpose. Furthermore, on Thomism, an event composed of some temporally ordered phenomena, just is an event involving some physical entity engaging in goal-directed behaviour (i.e., acting for the sake of some end or purpose). Hence, in asserting that temporal order obtains in physical entities, it seems we suppose that physical entities engage in goal-directed behaviour. In short, TO argues that one cannot coherently speak about order without also speaking about telos. If, however, the order-telos distinction breaks down, then the teleological-eutaxiological distinction breaks down too.

Before I develop my response to TO, let me first address the elephant in the room. For those who are disinclined to embrace Thomistic metaphysics (i.e., most contemporary metaphysicians), TO does not constitute a problem. It seems TO is merely an obstacle that may prevent Thomists from embracing the eutaxiological argument. Consequentially, many will be inclined to dismiss TO because they do not accept Thomistic metaphysical principles. One might wonder, therefore, why I feel the need to respond to TO in the first place (especially given the fact that I, myself, am not a Thomist)? The reason I feel the need to respond to TO is as follows. Thomistic metaphysics shares a lot in common with Aristotelian metaphysics. Indeed, the Thomistic notions of 'form' and 'final causation' have been directly lifted from and share a lot in common with Aristotle's notions of form and final causation. Historically, I might add, Aristotelianism has been intimately tied to both natural theology and the concept of teleology in nature. While Aristotle fell out of fashion, especially in the early twentieth century, there has recently been a resurgence of interest in Aristotelian ideas among analytic philosophers, i.e., the Neo-Aristotelian movement (Cf., Simpson & Koon, 2017; Novotný & Novák, 2013; Tahko, 2011). Given the historical significance of Aristotelianism for natural theologians, and the growing number of Neo-Aristotelian philosophers, I believe it is vital to address TO. Having made this point, I will now proffer a response to TO.

Let us grant for the sake of argument that Thomistic metaphysics provides the best metaphysical description of the world. Furthermore, let us concede, for the moment, that TO undermines the order-telos distinction. Even granted this, it is not clear that TO undermines the teleological-eutaxiological distinction. For it is not just the *explanandum* that eutaxiological reasoning is concerned with that sets it apart from teleological reasoning. As we have seen, it is also the *intelligence indicator* that it is concerned with. The *Fifth Way* focuses on the following *type-A₁* intelligence indicator: *Whenever a non-cognitive entity, x, engages in goal-directed or purposive behaviour, this indicates that an intelligent agency or mind either fully or partially explains the existence of x.* Its underlying assumption is that only intelligent agents have the natural power to direct something towards some *end* or *purpose*.

In contrast, as I have shown, the eutaxiological argument is concerned with the following *type-B* intelligence indicator: *Whenever an entity, x, conforms to an ordering principle, this indicates that an intelligent agency or mind either fully or partially explains the existence of x.* Its underlying assumption is that only intelligent agents have the natural power to conceive of or ground an ordering principle. Hence, even granting that TO undermines the order-telos distinction, one could still coherently distinguish between teleological and eutaxiological reasoning. For it is possible to re-imagine the *Fifth Way* as a eutaxiological argument by merely modifying the type of intelligence indicator it is concerned with. One might do this as follows:

> *The Fifth Way - Eutaxiological Style*
> (1)′ There are some things that are spatially-temporally ordered.
> (2)′ Anything that is spatially-temporally ordered conforms to a design plan that is grounded in intelligence.
> (3)′ Thus, there is an intelligence that grounds the existence of spatially-temporally ordered things.
> (4)′ This intelligence we call God.

If we grant that TO undermines the order-telos distinction, premise (1)′ is equivalent to saying, "there are some things intrinsically structured for an end or purpose that engage in goal-directed behaviour". Hence, (1)′ is not substantially different from premise (1) of the original *Fifth Way*. However, in premise (2)′, we have replaced the *Fifth Way's* reliance on a *type-A₁* intelligence indicator with a *type-B* intelligence indicator. In so doing, we have completely changed the nature of the argument. The upshot is, a Thomist who wishes to proffer a eutaxiological argument, but is worried about TO, is free to explicate the teleological-eutaxiological distinction solely on the premise that each argument is concerned with a different intelligence indicator.

Having said this, under closer scrutiny, it becomes evident that TO does not undermine the order-telos distinction. While Thomistic metaphysics envisages a tight relationship between the concept of 'order' and the concept of 'telos' they are still distinct concepts. To see this, let us begin by considering the following two propositions:

P1: A water molecule, *w*, bears the relational property being spatially ordered.

P2: A water molecule, *w*, engages in the goal-directed activity of dissolving salt.

Additionally, consider the facts that plausibly act as their truth-makers. For example, F1 acts as the truth-maker for P1:

F1: *w's* proper parts (i.e., its hydrogen and oxygen atoms) are arranged in a tetrahedral shape with a bond angle of 104.5 degrees.

Conversely, facts $F2_1$ and $F2_2$ are truth-makers for P2:

$F2_1$: *w* engages in the activity of dissolving salt.

$F2_2$: Dissolving salt is a goal-directed activity.

Let us stipulate that P1 and P2 are true propositions—which means that F1, $F2_1$, and $F2_2$ obtain. If Thomism truly undermines the order-telos distinction, then we would expect the relation 'being spatially ordered' contained in P1 to be equivalent to the goal-directed activity 'dissolving salt' in P2. However, this is *not* the case. For, clearly, the relational property 'being spatially ordered' is distinct from the goal-directed activity 'dissolving salt'.

Thomistic metaphysics maintains the fact that F1 obtains, grounds the fact that $F2_1$ and $F2_2$ obtain. This entails that F1 is a more fundamental numerically distinct fact than $F2_1$ and $F2_2$. Consequentially, one can coherently think about and discuss F1 without reference to $F2_1$ and $F2_2$, and one could believe F1 obtains while arguing against the Thomist that $F2_1$ and $F2_2$ do not obtain. All of this is to say, Thomistic metaphysics does not conflict with Hicks's contention that the eutaxiological argument is concerned with existential facts like F1, whereas teleological arguments, like the *Fifth Way*, are concerned with existential facts like $F2_2$. Even granting Thomism, both arguments are concerned with different existential facts— for F1, $F2_1$, and $F2_2$ are obviously not the same facts.

The staunch proponent of TO, however, may not find this very impressive. For, she is likely to think that the most significant problem facing the order-telos distinction is the concept of temporal order. In other words, she is likely to believe that temporal order just is goal-directed activity. If this is the case, then it appears as if the order-telos distinction breaks down. To meet this challenge, let us consider the following two propositions:

P3: A water molecule, *w*, exemplifies the relation being temporally ordered.

P4: When *w* dissolves a substance, it is engaging in goal-directed behaviour.

Likewise, consider their respective truth-makers:

F3: *w* acts as a universal solvent, i.e. when *w* comes into contact with various substances it dissolves them.

F4: Dissolving a substance is a goal towards which some entities (like water molecules) are directed.

For the sake of clarity let us simply assume that F3 is the only truth-maker for P3.[12] Let us also stipulate that P3 and P4 are true and, hence, that both fact F3 and F4 obtain.

If Thomism undermines the order-telos distinction, then we would expect the relation 'being temporally ordered' contained in P3 to be equivalent to the activity 'engaging in goal-directed behaviour' contained in P4. However, this is *not* the case. The former denotes the fact, F3, that *w* acts as a universal solvent, and the latter denotes the supposed fact, F4, that dissolving a substance is a goal towards which some entities, like *w,* are directed. F3 is an empirical fact regarding some phenomena we observe in nature. In contrast, F4 is a theory-laden fact regarding the metaphysical thesis that dissolving a substance is supposedly a goal towards which some entities, like water molecules, are directed.

Even if we grant, with Thomism, that facts like F3 can only be properly understood in light of facts like F4, it does not follow that the order-telos distinction has been undermined. One can choose to focus on the relation 'being temporally ordered' that we observe in nature without reference to the metaphysical thesis that non-cognitive entities engage in goal-directed behaviour, even if one believes the former relation is grounded in the latter teleological activity. Consequentially, it is consistent with Thomism to contend that the eutaxiological argument is concerned with empirical facts like F3, whereas teleological arguments, like the *Fifth Way*, are concerned with theory-laden facts like F4.

Contra TO, Thomistic metaphysics neither undermines the order-telos distinction nor the teleological-eutaxiological distinction. Thomism is, thus, logically consistent with eutaxiological reasoning.

Conclusion

In this chapter, I introduced Hicks's distinction between teleological design arguments and eutaxiological design arguments. Through an examination of AAO, I showed that the former is concerned with the alleged end or purpose (i.e., *telos*) of physical entities in the universe (or the universe in its entirety), and the latter is concerned with the structure, arrangement, patterns, or regularities (i.e., *order*) exemplified by the universe. Additionally, I showed that teleological arguments are concerned with a different intelligence indicator than eutaxiological arguments. More specifically, I explained that teleological arguments are concerned with the type-A indicator: *whenever an entity, x, has been contrived for some end or purpose, this indicates an intelligent agency or mind either fully or partially explains the existence of x.* Contrastingly, eutaxiological arguments are concerned with the following type-B indicator: *whenever an entity, x, conforms to an ordering principle, this indicates an intelligent agency or mind either fully or partially explains the existence of x.* Coupled with the underlying assumption that only intelligent agents have the natural power to conceive of and ground an ordering principle, the type-B indicator is supposed to warrant one's belief that an entity ontologically depends for its existence on an intellect or mind.

I also outlined the general structure of teleological and eutaxiological arguments to explicate further how they differ. Through an examination of Hicks' writings, I showed that,

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[12] Surely there are other facts that partially ground the truth of P3, e.g., the fact that water molecules freeze when their core temperatures fall below zero, or the fact that water molecules turn to vapor when sufficiently heated, etc. It is, however, easier for present purposes to assume P3 has only one fact as its truth-maker.

properly understood, teleological arguments are arguments *from* design. Meaning, they begin by pointing at the fact that the universe or some entity in the universe is designed—i.e., is an artefact or contrivance created for an end or purpose—and conclude there is an intelligent cause of this design. In contrast, the eutaxiological argument is an argument *for* design. Meaning, it begins by pointing at the fact that the universe is ordered—i.e., it exemplifies spatial and temporal order—and concludes two things. First, that the universe is designed (i.e., that it conforms to an ordering principle), and second that ordering principles are grounded in intellects or minds. Ergo, the universe's order is ultimately dependent on an intellect or mind.

After expounding on the nature of eutaxiological reasoning, I outlined and responded to a *prima facie* objection facing Hicks's distinctions. I referred to this challenge as the Thomistic Objection (TO). TO maintains Thomistic metaphysics undermines the order-telos distinction and, therefore, the teleological-eutaxiological distinction. I met this challenge and showed that, *contra* TO, Thomistic metaphysics is logically consistent with eutaxiological reasoning and does not undermine the order-telos distinction. It is, now, time to shift my attention to developing a novel version of the eutaxiological argument. Indeed, I exclusively dedicate the remainder of Part 1 to this goal. I begin, in Chapter 2, by clarifying what the term 'the universe' denotes in the context of *Stage One* of the eutaxiological argument.

Chapter 2: The Physicalist Universe

2.0. Introduction

For the sake of convenience, I have divided my version of the eutaxiological argument into two stages. In this chapter, and the subsequent chapters of Part 1, I focus on developing *Stage One* of the argument. We can formulate it as follows:

> *Eutaxiological Argument: Stage One*
> (1) The universe is ordered.
>
> (2) If the universe is ordered, it has a ground of its order.
>
> (3) Therefore, the universe has a ground of its order.

The primary aim of this chapter is to clarify what the term 'the universe' denotes in the eutaxiological argument. As will become evident, explaining what one means by 'the universe' is not merely a pedantic exercise. On the contrary, what one means by 'the universe' is incredibly important when formulating an argument for the existence of God. This is especially true of the eutaxiological argument.

Taking time to explicate what I mean by 'the universe' will help remove ambiguity from *Stage One*. It will also allow me to respond to two significant objections I anticipate will be proffered against the eutaxiological argument: namely, the God-of-the-Gaps Objection (GOGO) and the Multiverse Objection (MO). In responding to these objections, I will show that the eutaxiological argument is not trying to fill any gaps in our scientific knowledge and that it is, indeed, compatible with *any* conceivable cosmological model (even those which predict the existence of a Multiverse).

Unsurprisingly, there is no consensus among philosophers or scientists regarding how one should define 'the universe'. My strategy is, thus, to provide a general taxonomy of some of the primary ways philosophers and scientists use the term. Doing so helps me clarify what 'the universe' denotes within the context of the eutaxiological argument. Ultimately, I maintain eutaxiological reasoning treats 'the universe' as a plural term that refers to the total collection of all physical entities. I refer to this as a *physicalist* conception of the universe. After explicating this concept, I explain how adopting the physicalist conception helps one respond to GOGO and MO.

Chapter 2, therefore, has the following layout. In Section 2.1., I begin by making a distinction between three conceptions of the universe; namely, *ontological*, *empirical, and theory-laden* conceptions. I then build a conceptual map and explain the differences between each term and show how they relate to each other. I refer to this conceptual map as the *Standard Taxonomy of the Universe* (STU). I then argue that STU suffers from several significant problems. The most notable one being, it rules out the possibility that the eutaxiological argument is sound by fiat. In Section 2.2., I respond to this challenge by developing a slightly modified version of STU that I refer to as STU 2.0. Utilising STU 2.0., I am also able to clarify that the eutaxiological argument utilises a *physicalist* conception of the universe, according to which 'the universe' is a plural term that denotes the total collection of all physical entities. Finally, in Section 2.3., I build on this discussion to develop responses to both GOGO and MO.

2.1. Three conceptions of the universe

Broadly speaking, there are three conceptions of the universe standardly utilised by philosophers and scientists: *ontological*, *empirical*, and *theory-laden*. It is common for an author to alternate between these three conceptions of the term 'the universe' in the same writing without explicitly signalling that she is doing so. For example, Stephen Hawking and Leonard Mlodinow simultaneously utilise both an *ontological* and an *empirical* conception in the opening passage of *The Grand Design*:

> We each exist for but a short time, and in that time *explore but a small part of the whole universe*. But humans are a curious species. We wonder, we seek answers. Living in this vast world that is by turns kind and cruel, and gazing at the immense heavens above, people have always asked a multitude of questions: How can we understand the world in which we find ourselves? How does the universe behave? What is the nature of reality? Where did all this come from? Did the universe need a creator? (Hawking, 2010 p.13 emphasis mine).

On the one hand, the authors seem to be treating 'the universe' as a general metaphysical term that denotes the object of scientific and philosophical inquiry. In this sense 'the universe' denotes the 'whole of reality' or 'everything that exists' of which we can ask questions like 'How does it behave?' and 'Where did it come from?'. Let us label this the *ontological* conception of the universe; and let us stipulate that, according to the *ontological* conception, the term 'the universe' denotes the whole of reality or everything that exists.[13] Often when I am using 'the universe' per the ontological conception, I signal that I am doing so by utilising the equivalent term 'the ontological universe'.

On the other hand, the authors also seem to delineate between the ontological universe, and the domain of the ontological universe that can, in principle, be observed. This suggests they implicitly have another conception of the universe in mind; namely, the *empirical* conception. The empirical conception takes 'the universe' to denote the domain of the ontological universe that can, in principle, be observed.[14] Often when I am using 'the universe' per the empirical conception, I signal that I am doing so by using the equivalent term 'the empirical universe'.

Throughout most of their book, however, Hawking and Mlodinow primarily take 'the universe' to refer to one or another theoretical model. To cite but one example out of many, consider this passage:

> Alexander Friedmann investigated what would happen in a *model universe* based upon two assumptions that greatly simplified the mathematics: that the universe looks identical in every direction, and that it looks that way from every observation point … Based on these assumptions Friedmann was able to discover a solution to Einstein's equations in which the universe begins with zero size and expands until gravitational attraction slows it down, and eventually causes it to collapse in upon itself (Emphasis mine. Ibid., p.162).

Here 'the universe' denotes the ontological universe as it is defined by a theoretical model (in this case, the Friedmann model) that is intended to accurately describe how the ontological universe is ordered. Let us label this use of the term 'the universe' the *theory-laden*

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[13] As Buchler (1978) notes, taking 'the universe' to refer to everything that exists is the most common use of the term. For further discussion on what I am calling the ontological conception of the universe see Leslie (1989) and Heil (2012) and

[14] Munitz (1964) refers to this as the 'observable universe'.

conception; and, let us stipulate that according to the theory-laden conception, the term 'the universe' denotes the ontological universe as it is defined by a cosmological theory or model. Often when I am using 'the universe' per the theory-laden conception, I signal that I am doing so by using the equivalent term 'the theory-laden universe'.

Let us refer to these three conceptions of the universe (standardly employed by philosophers and physicists) as the *Standard Taxonomy of the Universe (STU)*. We can represent this with the following conceptual map:
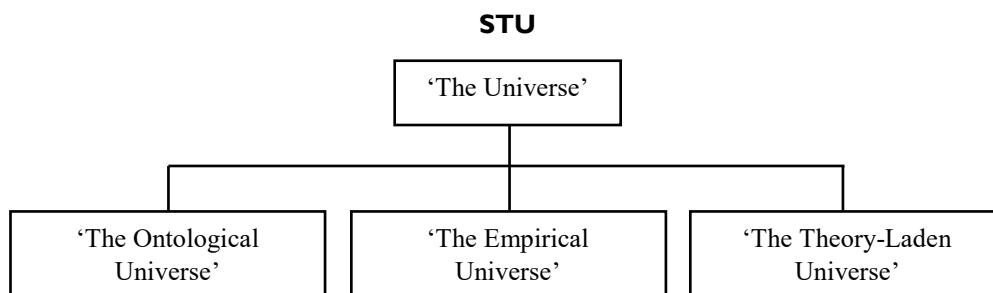
STU

'The Universe'

| 'The Ontological Universe' | 'The Empirical Universe' | 'The Theory-Laden Universe' |

Figure 2.1 Standard taxonomy of the universe.

Now that I have provided a rough introduction to STU, we can take a closer look at each individual conception of the universe it encompasses. We shall begin with a more in-depth analysis of the ontological conception.

2.1.1. The Ontological Universe

The first notable feature of the *ontological* conception is that it is conceptually prior to—and thus, conceptually more fundamental than—*empirical* and *theory-laden* conceptions. To conceive of an *empirical* universe—taken here to mean the domain of the ontological universe that can in principle be observed—one must already grasp the concept of an ontological universe. Likewise, to conceive of a *theory-laden* universe—taken here to mean the ontological universe as defined by a theoretical model—one must first grasp the concept of an ontological universe.

A second important feature of the ontological conception is its commitment to the Totality Thesis (TT):

Totality Thesis (TT): There exists an *ontological* universe, U, such that U is the totality—either the collection, or fusion, or set—of all actually existing things.

According to TT, 'the ontological universe' refers to an external objectively existing entity or entities. From this one can infer that there are more fine-grained ways to interpret the *ontological* conception. For example, one could treat 'the universe' as a plural term (or mass expression) that denotes the total *collection* of all existing entities. In which case, 'the ontological universe' does not refer to a single entity but, rather, refers equally to each member of a collection of entities; namely, the collection of all actually existing entities. Conversely, one could also treat 'the universe' as a singular term that denotes either the mereological *fusion* of all actually existing entities, or the *set* of all actually existing entities. We can more clearly distinguish between these three senses of 'the ontological universe' like so:

The Ontological Universe$_\alpha$: The term 'the universe' is a plural term that denotes the total *collection* of all actually existing entities.

The Ontological Universe$_\beta$: The term 'the universe' is a singular term that denotes the mereological *fusion* of all actually existing entities.

The Ontological Universe$_\delta$: The term 'the universe' is a plural term that denotes the *set* of all actually existing entities.

Each of these interpretations has advantages and disadvantages.[15] What is important to note here, however, is that the various more fine-grained *ontological* conceptions of the universe are not necessarily mutually exclusive. For instance, if one interprets 'the universe' per 'The Ontological Universe$_\alpha$', this is logically compatible with the possibility that the universe is a mereological fusion. In which case, one would say that the total collection of all actually existing things correlates with or supervenes on the unique fusion of all actually existing things. In any event, what these different interpretations of the ontological universe have in common is: (a) their commitment to the conceptual priority or fundamentality of the term 'the universe', and (b) their commitment to TT. These, however, are not the only important features of the *ontological* conception. Another feature of 'the ontological universe' is that it refers to the subject of scientific inquiry. For example, it is supposedly the ontological universe that cosmologists and theoretical physicists are attempting to accurately model and build *theory-laden* conceptions of.

It is here that I must highlight a serious problem facing STU. Many philosophers believe the whole of reality or everything that exists includes a host of non-physical entities including (but not limited to) the following: numbers, sets, propositions, universals, grounding and instantiation relations, mental states, souls, and God. In short, many philosophers are *ontological pluralists*; meaning they believe the ontological universe is comprised of entities from one or more distinct ontological category. If scientists, however, take themselves to be building theoretical models of how the ontological universe is ordered, this seems to suggest that ontological pluralism is false and *ontological monism*—the theory that the ontological universe is only comprised of entities that come from or supervene on one ontological category—is true.

The reasoning for this is as follows. Scientific explanations and models only point to or track with physical entities, e.g., objects like molecules, rocks, biological organisms, and solar systems, and properties like 'being soluble' or 'being five-foot-tall', or 'having an electric charge'. Arguably, however, they do *not* track with alleged non-physical entities like numbers, sets, propositions, universals, or whatever. Accordingly, one can make the following argument. If scientists are building theoretical models that describe how the ontological universe is ordered, and if scientific models only track with physical entities, then the ontological universe is comprised of only physical entities.[16] In other words, it follows

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[15] For an illuminating discussion regarding the advantages and disadvantages of each of these conceptions of the universe, see Simons (2003) and Varzi (2006).

[16] What it means to say that the universe is "comprised of" only physical entities is determined by which fine-grained interpretation of the ontological conception one adopts. If one takes the universe to be a *collection* or *set*, then it means all the members or elements of the universe are physical entities. Conversely, if one takes the universe to be a mereological *fusion*, then it means all the parts of the universe are physical entities.

that ontological monism is true. This conclusion is problematic for ontological pluralists, in general; but it is, especially, problematic for proponents of the eutaxiological argument. As we shall see in Chapter 5, *Stage Two* of the eutaxiological argument shows that the entity that grounds the universe's order (i.e., *logos*) is distinct from the universe. It would seem, therefore, that STU begs the question against both ontological pluralism, in general, and against the eutaxiological argument in particular.[17]

To avoid this difficulty, and to remain as ontologically innocent as possible, I think it is best to modify STU. In Section 2.2. I develop a modified version of STU that I refer to as STU 2.0. Helpfully, STU 2.0. contains a fourth conception of 'the universe' that I label the physicalist universe. Utilising the physicalist conception of the universe, allows one to proffer a response to the problem outlined above (and to several other problems I discuss in subsequent sections). For now, however, let us remain focused on explicating the ontological conception as STU defines it.

As should be clear, by now, the ontological conception takes 'the universe' to be a general metaphysical concept. It neither refers to a specific scientific theory or model, nor includes any precise physical dimensions, or parameters, or descriptions of physical phenomena. So, for example, when we are using 'the universe' in an ontological sense it does not denote any specific physical properties like 'looking identical in every direction and looking identical from every observation point' as the Friedmann model of the universe does. As such, the ontological conception is compatible with numerous discrete metaphysical theses and cosmological models.

For example, it is compatible with both 3-dimentionalist and 4-dimentionalist conceptions of spacetime, endurantist and perdurantist accounts of identity over time, and dualist and physicalist accounts of the mind, etc. It is also compatible with numerous discrete cosmological models, including those that predict the universe is spatially and temporally finite and those that predict the universe is spatially and temporally infinite. I could go on multiplying examples like this, but I think I have made the point: according to the ontological conception, 'the universe' is a general metaphysical concept.

To summarise, the ontological conception of the universe (according to STU) is characterised by the following features contained in this table:

The Ontological Universe
1. Conceptually prior to or more fundamental than both *empirical* and *theory-laden* conceptions.
2. Committed to the Totality Thesis (TT).
3. Takes 'the universe' to denote the entity (or collection of entities) that scientists are attempting to build *theory-laden* conceptions of.
4. Is a general metaphysical term compatible with numerous discrete metaphysical theses and cosmological models.

Figure 2.2 The ontological universe.

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[17] To be more precise, STU begs the question against any argument for theism that takes 'God' to be ontologically distinct from the universe (not just the eutaxiological argument).

Now that I have more rigorously analysed 'the ontological universe', let us shift our focus onto the *empirical* conception of the universe.

2.1.2. The Empirical Universe

Like the *ontological* conception, the *empirical* conception of the universe is a general term that does not refer to any specific scientific theory or model. Unlike the *ontological* conception, however, the empirical conception is not a metaphysical concept but, rather, an epistemological one. According to it, 'the universe' denotes the domain of the ontological universe that can, in principle, be observed. In other words, the portion of the ontological universe we can, in principle, have empirical knowledge of. As I have already shown, 'the empirical universe' is conceptually posterior to and, thus, dependent upon the ontological conception. Meaning, for one to conceive of the empirical universe one must first have a grasp of the concept of an ontological universe. Thus, the empirical conception is a less fundamental concept than the *ontological* conception. Nevertheless, it is conceptually prior to, and thus more fundamental than, *theory-laden* conceptions (a point to which I will return in a moment).

One might dispute with how STU defines the empirical universe. For example, one might argue that the entire ontological universe (and not, merely, one narrow domain of the ontological universe) is in principle subject to observation. The one who maintains this position, however, is making a highly contentious claim. For starters, as we have seen, an ontological pluralist believes non-physical entities such as numbers, sets, or propositions, exist and are thus part of the ontological universe. But non-physical entities exist outside the domain of reality we can access empirically i.e., it is in principle impossible to observe non-physical entities. Ergo, ontological pluralists will maintain that the proposition <It is, in principle, possible to observe the ontological universe> is false.

Given, however, that STU rules out ontological pluralism by fiat, as I pointed out in Section 2.1.1., this is not likely to be the type of response a proponent of STU will rely on. On the contrary, one who has adopted STU is more likely to proffer a response that is consistent with ontological monism. Fortunately, there are counterexamples that both ontological monists and pluralists can point to which suggest there are physical entities we could not possibly observe. For example, suppose one is warranted believing String Theory is true. In which case, she is warranted believing elementary particles are composed of more fundamental physical entities; namely, vibrating strings of energy. Given that strings exist, it follows, necessarily, that the ontological universe is comprised of them. Nevertheless, due to their microscopic size and to certain nomological limitations, it is in principle impossible to observe them. Or consider the Multiverse theory. A growing number of physicists have become convinced that there are numerous (perhaps an infinite number of) discrete spatiotemporal regions that lie permanently beyond the reach of empirical observation. Or, finally, consider the distant cosmological past. It is in principle impossible to observe the state of the universe prior to the singularity predicted by standard models of the Big Bang. Given that there are physical states composed of particles or fields prior to the singularity (as many cosmologists believe), it necessarily follows that the ontological universe is comprised of these unobservable fields or particles. These counterexamples indicate that the proposition <It is, in principle, possible to observe the ontological universe> is false.

One might respond to these counterexamples by arguing that the ontological universe is only comprised of entities we *currently* have empirical access to. Her reasoning might

proceed as follows. She might begin by defending some epistemological principle like the following: if a knowledge seeker, *S*, cannot verify whether some proposition, *p*, is true solely through empirical means, *S* is not warranted believing that *p*. Following this they might argue any proposition concerning entities that cannot be observed is false. Hence, propositions like <elementary particles are composed of unobservable strings> or <the ontological universe is comprised of numerous unobservable spatiotemporal regions> are false. From this they might argue that all the counterexamples above fail because we are not warranted believing in the existence of entities beyond the current scope of empirical observation.

This line of reasoning, however, is not very persuasive. To begin with, the epistemological principle it relies on is notoriously self-refuting. Which is to say, the truth of the proposition <If a knowledge seeker, *S*, cannot verify whether some proposition, *p*, is true solely through empirical means, *S* is not warranted believing that *p*> cannot, itself, be confirmed through empirical observation. Ergo, we are not warranted believing it is true. Aside from this, however, there are numerous propositions that many of us take to be true, whose truth cannot be verified solely through empirical means. Here are some examples:

> P5: I am now having a first-person *subjective* experience of pain.
> P6: It is wrong to torture cute bunny rabbits for fun.
> P7: One ought to keep her promises.
> P8: Properties are universals.
> P9: A proposition and its negation cannot both be true.[18]

Most people who take propositions like these to be true believe they are *objectively* true; meaning there is some objective fact in the world that *makes* them true, i.e., a truth-maker. The truth-makers for these propositions, however, cannot be observed. For instance, the truth-maker for P5 is the fact that I am currently having a first-person subjective experience of pain (which is being induced by my bodyweight pressing into my foot which is presently tucked under my leg). Clearly, one could observe me sat, with my foot tucked under my leg, typing with a grimace on my face. But none of these empirical observations make P5 true. On the contrary, these observations are perfectly consistent with me being an unconscious automaton, devoid of subjective inner experiences, and programmed to grimace from time to time to mimic human behaviour. No, the truth-maker for P5 is a fact regarding my current mental state, which is a fact that no one has third-person objective empirical access to.[19] As such, one cannot come to know a fact about my subjective experience by directly observing it. Likewise, the truth-maker for P6 is the fact that one ought not torture cute bunnies for fun—which is a moral principle that cannot be observed (I, for one, have never encountered the uninstantiated universal moral principle 'thou shalt not torture cute bunnies' floating down the street). I could go on to discuss P7, P8, and P9, but I think I have made my point (I will simply leave it to the reader to consider the others on her own).

The point of this discussion was to show that it is more reasonable to adopt an epistemology that accommodates at least some non-empirically verifiable truth-makers. According to such an epistemology, one might be warranted believing in the existence of some unobservable entity predicted by a scientific model (e.g., strings or Multiverses or dark matter, or whatever) even though she cannot verify its existence solely through empirical means (and will never be capable of doing so). In which case, the counterexamples above

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[18] I have borrowed and modified these examples from Woudenberg (2018).
[19] For those who might be concerned, I moved my foot after writing this and am happy to report I am no longer experiencing pain.

successfully rebut the contention that the entire ontological universe is in principle subject to empirical observation.

I will close this section by returning to the idea that the empirical universe is conceptually prior, and thus more fundamental, than theory-laden conceptions. Epistemologically speaking, it seems incontrovertible that prior to developing scientific theories and models intended to describe and explain how the ontological universe is ordered, one must have at least some empirical access to the ontological universe. Theories are based on observation. In which case, it seems that to grasp the theory-laden conception of the universe one must already have a tentative grasp of both empirical and ontological conceptions of the universe. In summary, we can represent the characteristic features of the empirical universe with the following table:

Empirical Conception
1. Conceptually *posterior* to the ontological conception and conceptually *prior* to or more fundamental than the theory-laden conception.
2. Takes 'the universe' to denote the domain of the ontological universe that can, in principle, be empirically observed.
4. Is a general epistemological term compatible with numerous discrete metaphysical theses and cosmological models.

Figure 2.3 The empirical universe.

Let us, now, conclude this section by considering, more closely, the theory-laden conception of the universe.

2.1.3. The Theory-Laden Universe

As I just established above, the theory-laden universe is conceptually posterior to both the ontological and empirical conceptions. As such, it presupposes one has a grasp of the empirical and ontological universe. There is, however, another important feature of the theory-laden universe. According to the theory-laden conception, the term 'the universe' does *not* have a single *univocal* meaning, i.e., it is an *equivocal* term. More specifically, as Munitz (1951) explains, the term is context-dependent and can hold many different meanings depending on which scientific model one is referring to:

> Each [cosmological] theory offers its own particular factual identification or, if one wishes, its own material definition of what it is to be a universe ... the referent of the term "universe," far from having a constant, univocal meaning throughout such discussions, illustrates on the contrary shifts of meaning to be under stood historically only by reference to these theories (Ibid., p.231).

If, for example, I take 'the universe' to denote the ontological universe as the Steady-State Model defines it, this is quite different from someone who takes 'the universe' to denote the ontological universe as defined by Friedmann-Lemaitre-Robertson-Walker models (FLRW).

It is quite common for writers to use 'the universe' in a theory-laden way (even if they have not explicitly stated that they are doing so). This is especially true of many contemporary analytic philosophers of religion. For example, the second premise of the famous Kalām cosmological argument for the existence of God states that <the universe

began to exist> (Craig and Sinclair, 2009 p.102). To defend the truth of this premise, Craig develops a cumulative scientific argument based on his interpretation of Big Bang cosmology. Craig's scientific argument is two-pronged. First, he outlines and explains FLRW, and argues that it provides the most accurate description of how the universe is ordered. Following this, he argues that FLRW models entail the universe began to exist. He then proceeds to outline and criticize all other competing cosmological models; namely, those that predict the universe did not begin to exist. The upshot is, within the context of the Kalām cosmological argument, 'the universe' is being used in a theory-laden sense to denote the ontological universe *as it is defined by FLRW*.[20]

The same is true of philosophers using the term 'the universe' in the Fine-Tuning argument. Manson (2009) explains that, before advances in cosmology and theoretical physics made in the 20th century, many philosophers believed there was no fine-grained or theory-laden definition of 'the universe'. After the advent of Big Bang cosmology, however, this radically changed. As Manson explains:

> After the development of Big Bang cosmology … the universe was seen to be highly structured, with precisely defined parameters such as age (13.7 billion years), mass, curvature, temperature, density, and rate of expansion. Modern physics also revealed that specific kinds of particles compose the universe and specific kinds of forces govern these particles, and that the natures of these particles and forces determine large-scale processes such as cosmic expansion and star formation (Ibid., p.271).

Manson goes on to explain that if any of the physical parameters of the universe were to have had a slightly different numerical value, this would have rendered the advent of any conceivable form of life impossible. It is clear that, in his development of the Fine-Tuning argument, Manson also uses 'the universe' in a theory-laden sense, i.e., he takes 'the universe' do denote the ontological universe as FLRW, and contemporary physics define it.[21]

Unlike the Kalām cosmological argument and the Fine-Tuning argument, the eutaxiological argument does *not* utilise a theory-laden conception of the universe. On the contrary, it uses a narrow ontological conception of the universe. What I refer to as the physicalist conception. It is to this that we must now finally turn our attention.

2.2. The physicalist conception of the universe

One problem with STU (which I pointed out above) is that it rules out, by fiat, the possibility that ontological pluralism is true. As I explained in Section 2.1.1, according to STU the ontological universe is what cosmologists and theoretical physicists are empirically

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[20] There is another problem lurking here (which is closely related to the problem I explicated in Section 2.1.1). The conclusion of the Kalām argument is that there exists an omnipotent, omniscient, ontologically distinct person who caused the universe to come into existence. Given STU, however, this conclusion is necessarily false. The reason being, on STU, the existence of an entity that is ontologically distinct from the universe is metaphysically impossible in virtue of the Totality Thesis (TT). There cannot exist a person who is not part of (or a member of) the ontological universe because, given TT, the ontological universe just is a fusion, set, or collection of everything that exists. Consequentially, anyone who claims there is a person, *P*, who caused the theory-laden universe to come into being, must hold that *P* is either one of the n-tuple number of actually existing things that comprise the ontological universe, or that *P* is numerically identical to the ontological universe. Both positions are untenable for the proponent of the Kalām argument because they imply that *P* existed prior to *P* coming into being which is metaphysically impossible.

[21] The same tension exists between STU and the Fine-Tuning Argument as it does between STU and the Kalām. See the above footnote for details.

studying and building theoretical models of. In other words, the theory-laden universe is taken to be a more fine-grained conception of the ontological universe; one that supposedly describes, in great detail and precision, how the ontological universe is ordered. I argued that this entails STU is both logically and metaphysically incompatible with ontological pluralism. The reason being, scientific explanations and models, only point to or track with physical entities, e.g., objects like molecules, rocks, biological organisms, and solar systems, and properties like 'being soluble' or 'being five-foot-tall', or 'having an electric charge'. Arguably, however, they do *not* track with non-physical entities (e.g., alleged non-physical entities like numbers, sets, or propositions).[22] If, therefore, theory-laden conceptions of the universe are taken to be describing how the ontological universe (i.e., literally everything that exists) is ordered, and if theory-laden conceptions only track with physical entities, then the ontological universe is comprised of only physical entities. In other words, it follows that ontological monism is true and ontological pluralism is false.

To be clear, STU is compatible with there being numerous possible worlds in which radically different theory-laden conceptions of the universe turn out to accurately describe the objective way the ontological universe is ordered. So, for example, STU is compatible with their being a possible world, W_1, in which, unlike the actual world, the Steady-State model obtains. STU is not, however, compatible with their being a possible world, W_2, in which both a theory-laden conception obtains (e.g., a world in which the Steady-State model obtains) and ontological pluralism obtains.

To see this, consider, again, W_1. In W_1 the Steady-State model is an accurate scientific description of how the ontological universe (i.e., literally everything that exists in W_1) is objectively ordered. Since the Steady-State model only tracks with physical entities, it follows that only physical entities exist in W_1 and that, ontological pluralism does not obtain. In W_1 entities like numbers, sets, or propositions must, in some way, supervene on or be reducible to physical entities; they cannot, however, be ontologically distinct from physical entities. All of this is to say, if we grant STU's definitions of 'the ontological universe' and 'the theory-laden universe', we rule out ontological pluralism by fiat. Which is to say, we rule it out, not based on some persuasive argument or scientific evidence, but merely based on how we have chosen to define our terms.

In case there is any confusion, my goal at present is not to defend the truth of ontological pluralism, but merely to point out that STU unfairly begs the question against ontological pluralism. Additionally, I am trying to show that STU suffers from some internal inconsistency. According to STU, 'the ontological universe' is supposed to be a general metaphysical or ontologically innocent term compatible with numerous discrete metaphysical theses and cosmological models. Yet, STU's definition of the theory-laden universe (as we have just seen) is *incompatible* with ontologies that include entities from more than one category. Before I attempt to resolve these problems, by developing the physicalist conception of the universe, I want to consider, more closely, the unique challenge STU presents for the eutaxiological argument.

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[22] Arguably, scientific explanations and models depend on non-physical entities like numbers and sets, in the sense that they utilise them to precisely describe observable phenomena. Nevertheless, the scientific explanations and models are exclusively pointed at or tracking with observable physical phenomena and, thus, are not tracking abstract mathematical objects.

To begin with, and as should be very clear by now, adopting STU rules out, by fiat, the possibility that *Stage Two* of the eutaxiological argument is sound. As we shall see, *Stage Two* proffers arguments that show *logos* (i.e., the entity that grounds the universe's order) is ontologically distinct from the universe and, thus, a non-physical entity. If, however, STU is incompatible with the truth of ontological pluralism, then it is also inconsistent with the truth of the proposition <*logos* is a non-physical entity>. In which case, if we are defining our terms per STU, *Stage Two* will be unsound.

There is, however, another problem for the eutaxiological argument lurking here. STU also rules out, by fiat, the possibility that the conclusion of *Stage One* is true, i.e., it entails the following proposition is false <The universe has a ground of its order>. To see that this is the case, let us temporarily stipulate that *Stage One* uses 'the universe' in accordance with the ontological conception outlined in STU. Recall that, on STU, the ontological conception is committed to the Totality Thesis (TT). Taking TT into consideration, we can stipulate that, within the eutaxiological argument, 'the universe' denotes either the total *collection* of all actually existing entities, or the mereological *fusion* of all actually existing entities, or the *set* of all actually existing entities. Herein lies the problem. According to the standard conception of ground, grounding relations have the following formal features: *irreflexivity*, *asymmetry*, and *transitivity* (I will say much more about this in Chapter 4). We can define these terms as follows:

> *Irreflexive*: For any (*x*), *x* is not grounded in *x*.

> *Asymmetric*: For any (*x,y*) in a grounding relation R, if *y* is grounded in *x,* then *x* is not grounded in *y*.

> *Transitive*: For any (*x,y,z*) in a grounding relation R, if *x* grounds *y,* and *y* grounds *z,* then *x* grounds *z*.

Importantly, the formal features of ground entail a hierarchical view of reality according to which reality is organised into numerically distinct levels, some of which are more fundamental than others. So, for example, when we say that '*x* grounds *y*' we are saying that *x* is ontologically prior to and, thus, more fundamental than *y*.

Here is how all this talk of grounding applies to the present discussion. According to STU and the tentative definition of order (TDO) developed in Chapter 1, premise (3) of *Stage One*, is equivalent to the following proposition: <the spatial-temporal order that obtains in the total collection, or fusion, or set, of all actually existing entities is grounded in *x*>. Given the formal features of ground, however, this entails the spatial-temporal order exemplified by all actually existing entities is on a "higher" ontological level than the entity, *x,* that grounds it. In other words, if *x* is the ground of the universe's order, then *x* is numerically distinct and ontologically prior to the universe. As such, it exists on a "lower" more fundamental ontological level than the universe.[23]

Given TT, however, *x* is simultaneously a part or member of the ontological universe in virtue of the fact that *x* exists. We have now arrived at our problem. It is metaphysically

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[23] Or on a "higher" level depending on which direction you think the grounding relation is going. For example, one may envision grounding to flow from the "top-down". On this model the higher levels are more fundamental than the lower. I discus this at length in Chapter 6.

impossible for any entity to both ground something and simultaneously be a part or a member of the thing it is grounding—for this violates the *irreflexive* and *asymmetric* nature of grounding relations. The outcome is that the conclusion of *Stage One* is necessarily false. Which is to say, if we define our terms following STU, the notion that the universe has a ground of its order becomes incoherent and, thus, the conclusion of the eutaxiological argument is false. It is only false, however, by fiat. Meaning it is not false due to some damning scientific evidence or strong philosophical argument. Instead, it is false due to the way STU defines the ontological universe coupled with the formal features of grounding relations.

2.2.1. STU 2.0.

Having adequately outlined the problems at hand, I will now develop a modified version of STU in response to these problems. Let us call the modified version STU 2.0. According to STU 2.0., there is a *species* of the ontological conception of the universe called the *physicalist* conception. We can represent STU 2.0. with the following conceptual map:
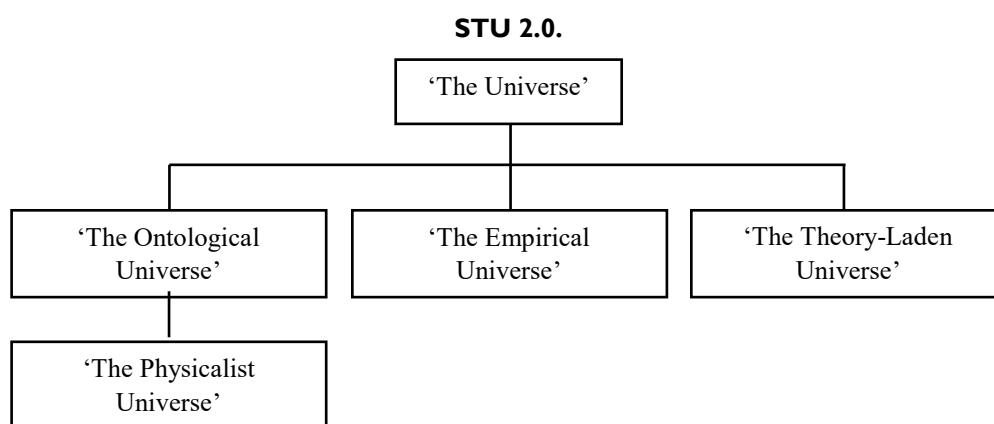

Figure 2.4 The standard taxonomy of the universe 2.0

In STU 2.0., the ontological universe is defined as it is in STU with one crucial difference: the ontological universe is *not* the object of scientific inquiry. Rather, it is the physicalist universe that is the object of scientific inquiry. I will, however, discuss this point more closely in a moment. Before doing so, it is important to note that in STU 2.0. the empirical universe is defined the same as it is in STU without any modification. Conversely, the theory-laden universe is the same as in STU with one significant modification. Rather than taking 'the universe' to denote the ontological universe as described by a cosmological model, the theory-laden conception in STU 2.0. takes 'the universe' to denote the physicalist universe as defined by a cosmological model.

With that being said, I will explicate the concept of the physicalist universe. The physicalist conception is a *species* of the ontological conception. As such, it shares most of the characteristic features of the ontological conception: (i) it is conceptually prior to or more fundamental than both empirical and theory-laden conceptions, (ii) it takes 'the universe' to denote the entity (or collection of entities) that scientists are attempting to explain and build models of, and (iii) it is a general metaphysical term compatible with numerous discrete metaphysical theses and cosmological models. Unlike the ontological conception, however,

the physicalist conception is not committed to TT. Rather, it is committed to the Totality Thesis Lite (TTL):

> Totality Thesis Lite (TTL): There exists a physicalist universe, such that the physicalist universe is the totality (i.e., the *collection*, *fusion*, or *set*) of all actually existing physical entities.

According to STU 2.0, the collection, fusion, or set of all actually existing physical entities is either encompassed within or identical to the total collection, fusion, or set of all actually existing entities (i.e., the ontological universe). In other words, the physicalist conception remains neutral regarding whether we should be ontological pluralists or monists and is logically compatible with both theses. We can summarise all of this with the following table:

The Physicalist Universe
1. Conceptually prior to or more fundamental than both empirical and theory-laden conceptions.
2. Committed to the Totality Thesis Lite (TTL).
3. Takes 'the universe' to denote the entity (or collection of entities) that cosmologists and theoretical physicists are attempting to explain and build models of.
4. Is a general metaphysical term compatible with numerous discrete metaphysical theses and cosmological models.

Figure 2.5 The physicalist universe.

STU 2.0. avoids the problems generated by STU. As I just explained, STU 2.0. does not rule out the possibility that ontological pluralism is true by fiat. According to STU 2.0., theory-laden conceptions of the universe are concerned with describing how the physicalist universe is actually ordered. This, therefore, leaves open the possibility that the ontological universe is comprised of more than just physical entities and, thus, the possibility that ontological pluralism is true. Nevertheless, it is also amenable to the possibility that ontological monism is true, i.e., to the thesis that the physicalist universe is identical to the ontological universe. Importantly, for our purposes, STU 2.0. is also amenable to the eutaxiological argument.

To begin with, STU 2.0. does not rule out the possibility that *Stage Two* of the eutaxiological argument is true by fiat, because it is logically consistent with the possibility that there exists an entity which is ontologically distinct from the universe. Furthermore, if we adopt STU 2.0., and if we interpret 'the universe' per the physicalist conception, we need not worry about the grounding problem that STU poses to the eutaxiological argument either. Here is why. In saying that the physicalist universe's order is grounded in *logos* we are not asserting a contradiction. We are, instead, asserting: (i) that there exists a *logos* such that it is not a part of or a member of the physicalist universe, nor numerically identical to the physicalist universe, (ii) that the order that obtains between the physicalist universe's parts or members is grounded in *logos*, and (iii) that *logos* is ontologically prior to, and thus more fundamental than, the universe's order. I will fully unpack these ideas in Chapters 4 and 6; for now, however, it is enough to show that on STU 2.0. the possibility that *Stage One* of the eutaxiological argument is sound is not ruled out by fiat.

I will conclude this section by clarifying, more precisely, what 'the universe' denotes in my defence of the eutaxiological argument. According to STU 2.0. just as with the

ontological universe, there are multiple more fine-grained ways one might interpret the physicalist universe. We can more explicitly distinguish them as follows:

> The Physicalist Universe$_\alpha$: The term 'the universe' is a plural term that denotes the total *collection* of all physical entities.

> The Physicalist Universe$_\beta$: The term 'the universe' is a singular term that denotes the mereological *fusion* of all physical entities.

> The Physicalist Universe$_\gamma$: The term 'the universe' is a plural term that denotes the *set* of all physical entities.

Within the context of the eutaxiological argument I interpret 'the universe' per 'The Physicalist Universe$_\alpha$'.

I think defining 'the universe' per 'The Physicalist Universe$_\alpha$' is ideal because it makes 'the universe' an ontologically innocent term. Meaning, it does not unduly commit one to the existence of any controversial entities like fusions or sets, and it is compatible with numerous discrete metaphysical theses and cosmological models. It also best captures the aims of the eutaxiological argument. As we saw in Chapter 1, both proponents of AAO and, later, L. E. Hicks, believed one must appeal to an intellect or mind to fully explain the order exemplified by every individual physical entity. A reoccurring theme in their arguments is that mind is needed to explain the fact that there are discrete types of entities engaging in regular kinds of behaviour. As we shall see, if we adopt 'The Physicalist Universe$_\alpha$', when one says that 'the universe is ordered' this applies equally to every member of the total collection of all physical entities. In other words, it means that each individual physical entity is ordered. Hence, when we say that *logos* grounds the universe's order, we are saying that *logos* provides a metaphysical explanation for the fact that every individual physical entity that comprises the physicalist universe is ordered. I will develop this idea in significant detail in Chapter 3.

In any event, throughout the remainder of this chapter, and indeed, the rest of this thesis, I will follow the taxonomy of the term 'the universe' outlined by STU 2.0. Furthermore, when I use the physicalist conception of the universe, I specifically have in mind the meaning of the term 'the universe' outlined by 'The Physicalist Universe$_\alpha$'. Now that I have outlined a general taxonomy of 'the universe' and have clarified what it means within the context of the eutaxiological argument, I can build on this discussion to respond to two anticipated objections to the eutaxiological argument: namely, the God-of-the-Gaps Objection (GOGO) and the Multiverse objection (MO).

2.3. Responding to GOGO and MO

There are two common objections put forth in response to contemporary teleological, and cosmological arguments that I anticipate will also be proffered against the eutaxiological argument. The first is the allegation that the eutaxiological argument commits the God-of-the-gaps fallacy. I refer to this objection as the God-of-the-Gaps Objection or GOGO. The second, involves theory-laden conceptions that predict that the physicalist universe is a Multiverse. As I will explain, there are several different models of the Multiverse. The most significant one, however, takes the physicalist universe to be comprised of numerous (perhaps an infinite) discrete spatiotemporal regions or small 'u' universes. If the Multiverse theory accurately describes how the physicalist universe is ordered, one might argue, this

eliminates the need to appeal to *logos* as an explanation for the orderliness of the universe. I refer to this objection as the Multiverse Objection or MO. In this section, I expound on each of these objections with a bit more detail. Following this, I show why the eutaxiological argument is not vulnerable to these significant objections.

2.3.1. The God of the Gaps Objection

One common objection put forth against proponents of traditional teleological arguments, and against the proponent of the Kalām cosmological argument, is that it commits the so called 'God-of-the-gaps' fallacy. This fallacy is often conceived of as a species of the informal fallacy known as the 'argument from ignorance'. Copi and Cohen, explain that the argument from ignorance is, "the mistake that is committed whenever it is argued that a proposition is true simply on the basis that it has not been proved false, or that it is false because it has not been proved true" (Copi & Cohen, 1990 p.93). Critics of theism often claim a similar fallacy is being committed whenever God is invoked as an explanation of some physical phenomena, *x*, that, currently, lacks a scientific or naturalistic explanation. The problem being, just because we currently do not have a scientific or naturalistic explanation of some physical phenomena, *x*, it does not follow that there is no such explanation for *x*. Nor does it follow that *x* has a supernatural explanation.[24] Let me flesh this out with some concrete examples.

Consider, again, the Fine-Tuning argument—which is, I think, the most significant contemporary teleological argument. Recall that in Section 2.1., I showed that the Fine-Tuning argument uses 'the universe' in a *theory-laden* sense. Indeed, the phenomena that the Fine-Tuning argument is concerned with is the fact that if any of the physical parameters of the physicalist universe—as defined by FLRW models and contemporary physics—where to have had a slightly different numerical value this would have rendered the advent of organic life impossible. It is this phenomenon—the alleged Fine-tuning of the physical constants outlined by FLRW models—that the God of theistic personalism is invoked to explain in the Fine-Tuning argument.

Herein lies the problem. A critic can claim that the proponent of the Fine-Tuning argument only invokes God as an explanation for fine-tuning because there is currently no widely accepted scientific explanation of the phenomena available. They can further argue that citing God to fill in a supposed gap in scientific knowledge is a serious methodological mistake. History teaches us that, just because there is currently no widely accepted scientific explanation for some phenomena of the type that science is aimed at explaining, it does not follow that there is no such explanation. Surely, says the critic, the most reasonable position to hold is that science will eventually discover a naturalistic explanation regarding why the universe is fine-tuned for the advent of organic life (if, indeed, it has not already).

Of course, the teleologist can respond to GOGO by claiming she is not invoking a supernatural explanation *solely* because there is currently no widely accepted scientific explanation for the fine-tuning of the physical constants.[25] On the contrary, the teleologist

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[24] For an excellent overview of the God-of-the-Gaps fallacy and how it has been applied to arguments in natural theology, see Kojonen (2016). As Kojonen's article reveals, GOGO seems to, primarily, be levelled against proponents of Intelligent Design. For several examples of this catalogued by Kojonen, see the following edited volumes: (Pennock 2001, 158-159, 184-185); (Petto & Godfrey 2007, 309-338, 416-417).

[25] As Kojonen rightly notes, "… it is actually quite difficult to find examples in the literature where someone seriously argues for the existence of God (or an unidentified intelligent designer) purely on the basis of our

may argue that she is invoking a supernatural explanation because she takes it that the fact that the universe has been fine-tuned for organic life entails the universe is a contrivance or artefact that exists for an identifiable end or purpose. She may, then, argue that a complete explanation of fine-tuning must track with an intelligent agency on the basis of the type-A intelligence indicator and its underlying assumption that *only* intelligent agents have the natural power to contrive an entity for some *end* or *purpose.*

Whatever one makes of this, it is beyond the scope of this chapter to argue for or against the Fine-Tuning argument. The reason I am talking about fine-tuning at present is to make the following important observation. The Fine-Tuning argument is only vulnerable to GOGO because it utilises a *theory-laden* conception of the universe. To see why this makes it vulnerable to GOGO, let us first consider several paradigmatic empirical facts of the type that scientists are interested in:

F6: Polar bear DNA is sequenced to possess genes for white fur.

F7: Following the plank era, at roughly 10^{-36} of a second after the Big Bang, the size of the physicalist universe inflated by an estimated factor of 10^{26} (in all three spatial dimensions) in a mere 10^{-32} seconds.

I suspect most would agree that if we did not know the explanation for these facts, we would intuitively expect there to be a scientific one. Indeed, I feel confident saying that most philosophers would frown upon me appealing to explanations that track with a supernatural cause to explain why F6 and F7 obtain. I would rightly be met with numerous incredulous stares if I proclaimed that Zeus sneezed and caused F7 to obtain, or that some cohort of helpful forest spirits caused F6 to obtain. Virtually no one would accept such explanations because F6 and F7 are the type of facts that science is aimed at explaining. Indeed, there are good scientific answers to why F6 and F7 obtain.[26]

The important question is, what is it about F6 and F7 that make them susceptible to scientific explanation? Or more importantly, when we encounter facts like F6 and F7, why should we presuppose they have a scientific explanation? It is difficult to answer these questions. To develop an adequate answer would require far more space than I have here. I can, however, make several tentative observations. First, facts like F6 and F7 are highly specific empirically-based theory-laden facts about the way the physical universe is ordered. Second, for the past hundred years, science has grown increasingly successful at discovering explanations for facts of this type. Given that science is concerned with facts like F6 and F7, and given the overwhelming success science has had in explaining such facts, it seems very reasonable to assume that when we encounter an unexplained fact of a similar type that it, too, will have a scientific explanation.

Having said this, consider one of the contingent facts that the Fine-Tuning argument is concerned with:

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present ignorance of natural explanations for some phenomenon" (Kojonen, 2016 p.293). It would seem, therefore, that GOGO is typically levelled against straw man arguments that are not actually proffered by serious proponents of teleology.

[26] Biologists maintain evolution played a role in causing the Polar bear's DNA to be sequenced for white fur. More specifically, they argue that a Polar bear's DNA became coded for white fur as the species adapted to its particular ecological niche. Likewise, cosmologists maintain that inflation might have been caused by a large amount of vacuum energy possessing enough negative pressure to induce gravitational repulsion.

F8: The universe conforms to precisely defined physical parameters—e.g., its age (13.7 billion years old), the mass of the proton (938.28 MeV), the speed of light (2.99792458×10^8 m^1s^{-1})—and if these parameters did not obtain there would be no organic life.

F8 is a highly specific empirically-based theory-laden fact about the way the physicalist universe is ordered—just like facts F6 and F7. In other words, F8 seems to be a paradigmatic example of the type of empirical facts that science is concerned with finding explanations for. Indeed, there is already a viable scientific explanation for why F8 obtains that is gaining serious traction; namely, the Multiverse theory (which I will address in detail in Section 2.3.2.). It should, now, be obvious why the fine-tuning argument is vulnerable to GOGO. The Fine-Tuning argument is concerned with a theory-laden conception of the universe, and consequentially with an existential fact of the type that we usually assume has a scientific explanation. Furthermore, the supernatural explanation it proffers to explain F8 is explicitly competing with scientific explanations of the same phenomena such as the Multiverse theory. One can, therefore, understand why the proponent of GOGO believes there is something fallacious about the reasoning underlying the Fine-Tuning argument (even if one ultimately thinks GOGO fails to undermine the argument).

The Kalām cosmological argument is vulnerable to GOGO for the same reason. It, too, is concerned with a fact of the type that science is concerned with finding explanations for:

F9: The physicalist universe began to exist 13.7 billion years ago at the moment of the Big Bang

F9 is a highly specific empirically-based theory-laden fact. Furthermore, the supernatural explanation for why F9 obtains that Craig offers—i.e., the notion that the God of theistic personalism caused the universe to exist—is proposed as an alternative to scientific explanations for the Big Bang. In other words, Craig pits his supernatural explanation of the phenomena against possible scientific explanations of the phenomena.

What makes all of this more problematic is that many cosmologists do not believe F9 obtains in the first place. This is evidenced by the fact that many cosmologists do not share Craig's conviction that FLRW entails the physicalist universe is temporally finite and, thus, began to exist at the Big Bang. As Stoeger (2010a) explains, FLRW models of the Big Bang break down as we "rewind" the clock back to a time when the universe's temperature was hotter than 10^{26} K during the Plank era. In other words, FLRW models fail to accurately describe the physical state of the universe at the Big Bang (Ibid., p.158-59). As such, FLRW models do not necessarily entail the universe had a beginning. As he states:

… we can clearly see, then, that the Big Bang, or even the Planck era, is not "the very beginning" of the universe. It certainly is "the beginning" according to FLRW models of our universe. But those models are completely inadequate precisely in the region of the Big Bang! (Ibid., p.159).

The cosmologist Sean Carroll also elaborates on this, stating:

…the Big Bang doesn't actually mark the beginning of our universe; it marks the end of our theoretical understanding. We have a very good idea, on the basis of observational data, what happened soon after the Bang … But the Bang itself is a mystery. We shouldn't think of it as

'the singularity at the beginning of time'; it's a label for a moment in time that we currently don't understand (Carroll, 2016 p.51).

J. Brian Pitts confirms that Stoeger and Carroll's views are commonplace among cosmologists and theoretical physicists:

> As one sees all the time in papers on quantum gravity, most people who work on quantum gravity take for granted that the Big Bang singularity is an artefact of incomplete physical understanding and expect or hope that uniting gravity with quantum mechanics in some kind of quantum gravity will resolve the singularity into some well-defined situation that admits extrapolation to still earlier times, *ad infinitum* (Pitts, 2018 p.90).

There are cosmologists actively developing and defending models—e.g., those proposed by Fakir (2000) and Veneziano (2000)—which predict an actual infinite number of past and future temporal events. Admittedly these models lack the robust amount of empirical verification FLWR models enjoy. Yet, the fact that cosmologists are exploring such models is instructive. Namely, it teaches us that many scientists (particularly those working in the field of cosmology) are quite amenable to the possibility that the Big Bang does not mark the definite temporal beginning of the physicalist universe. More importantly, it shows that cosmologists believe there is a scientific explanation for the state of the universe at the Big Bang that tracks with some physical entity or entities that exist diachronically prior to the Big Bang.

In view of all this, one can sympathise with the critic of the Kalām argument who contends that Craig is making a logical error when he infers that the God of theistic personalism is what caused the Big Bang. Which is to say, one can understand why a critic might think Craig is wrongfully appealing to the theistic personalist God to fill a gap in our scientific knowledge. A gap that, given the historic success of science, we have good reason to believe science will inevitably fill. Regardless of whether one thinks GOGO undercuts the Kalām argument, it is clear that it is vulnerable to GOGO because it is concerned with a *theory-laden* conception of the universe.

Given that contemporary arguments for theism, like the Fine-Tuning and Kalām argument—are vulnerable to GOGO, one might assume the eutaxiological argument is as well. Fortunately, this is *not* the case. The eutaxiological argument is concerned with the fact that the universe is ordered which, given the tentative definition of order developed in Chapter 1, and 'The Physicalist Universe$_\alpha$' developed in Section 2.2.1., means it is concerned with the following equivalent fact:

F10: The total collection of all physical entities exemplifies spatial-temporal order.

Note that, while F10 is empirically based (meaning our coming to know F10 obtains is based on *a posteriori* reasoning), it is *not* a highly specific theory-laden fact. Rather, it is a general metaphysical fact that is, in principle, compatible with many discrete metaphysical theses and scientific theories. In short, it is the type of fact that philosophical enquiry is aimed at trying to explain (not science).

Furthermore, one believing that F10 obtains is arguably a necessary precondition for one engaging in scientific inquiry. Meaning, F10 is the type of fact that one must assume obtains logically prior to coming to believe that facts like F6, F7, F8, or F9, obtain. For

example, consider again F7, i.e., the fact that following the plank era, at roughly 10^{-36} of a second after the Big Bang, the size of the universe inflated by an estimated factor of 10^{26} (in all three dimensions) in a mere 10^{-32} seconds. If one did not assume F10 obtained, she would not be warranted believing F7 obtains. The reason being, F7 contains a highly specific empirically-based theory-laden description of the type of spatial-temporal order supposedly exemplified by the physicalist universe. If, therefore, one did not believe the universe was objectively ordered, she would not be inclined to believe that some fact like F7, which contains a detailed description of how the universe is supposedly ordered, obtains.

In other words, the fact that the physicalist universe is ordered—i.e., F10—is a fact that scientists must presuppose obtains for scientific inquiry to even get off the ground. Hicks expresses this as follows

> Physical science is a classified knowledge of external nature; but the possibility of classification, and therefore of science, lies in the fact that there is first a natural, external order, whence arises the logical, internal order in the arrangement of facts and principles, which constitutes true science. The external order existed before the science which is based upon it. There was celestial harmony before the science of astronomy was constructed by formulating the laws and principles gathered from observation of the heavens (Hicks, 1883 p.17).

Given that F10 is the type of fact that one must presuppose obtains for science to even get off the ground, it is not the type of fact that science, can in principle, explain. For the very possibility of successfully engaging in scientific activity depends upon F10 having obtained.

I will close with this final observation. The eutaxiological argument does not state that there is a cause of the physicalist universe's order but, rather, a ground. As we shall see in Chapter 3, grounding is a non-physical relation associated with a form of metaphysical explanation. The claim that there is a ground of the physicalist universe's order is fully compatible with any possible scientific description or theory regarding how the universe is actually ordered. In other words, unlike the Fine-Tuning and Kalām arguments, the eutaxiological argument is not competing with scientific explanations. Instead, as we shall see in Chapters 4, it is proffering a metaphysical explanation that is compatible with whatever science tells us about the universe. The eutaxiological argument is, therefore, not vulnerable to GOGO because it is not attempting to fill any gaps in our scientific knowledge.

2.3.2. The Multiverse Objection

The discussion above leads nicely to the second objection I wish to address: MO. As I just showed above, arguments like the Fine-Tuning or the Kalām argument, pit their supernatural causal explanations against opposing scientific explanations of the phenomena they are concerned with. The Multiverse theory is one such opposing scientific explanation. Its advocates believe it satisfactorily explains both the fine-tuning of the physical constants and the initiation of the Big Bang. For this reason, MO maintains it is not reasonable to embrace the supernatural explanations proffered by the Fine-Tuning and Kalām arguments because there are good reasons for adopting the Multiverse theory and the existence of a multiverse fully explains the phenomena in question.[27]

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[27] For a good overview of the Multiverse Objection see Collins (2005).

Before I explain how one can appeal to the Multiverse to explain the fine-tuning of the physical constants or to explain the fact that the universe began to exist, it is important to note that there is not a single Multiverse theory. Rather, as Koperski (2015) notes, there are a cluster of different Multiverse theories. One prominent version of the theory is the *serial multiverse model*. According to this model, the physicalist universe correlates with but one of an infinite series of discrete finite spatiotemporal regions. Each discrete finite spatiotemporal region comes into existence at the Big Bang, expands, then eventually contracts, and the whole process starts over again, generating a new spatiotemporal block with completely different nomological properties.

The *serial multiverse model* is not, however, the most popular conception of the multiverse. The most widely held Multiverse theory is the *single multiverse model* (Ibid., p.87).[28] According to this theory, the physicalist universe correlates to a single, unique, and unimaginably large (possibly infinite) spacetime structure composed of numerous discrete spatiotemporal regions with entirely different nomological properties. On this view, the empirical universe correlates with but one spatiotemporal region or proper part of the single Multiverse. There are, however, numerous other spatiotemporal regions (with completely different nomological properties) that we cannot, in principle, observe.

To get your head around this, imagine you find Dr. Who's Tardis parked on your street with the door open. You poke your head in and discover it is empty. So, you step in and take the Tardis for a quick cosmic joy ride. As the Tardis hurls through time and space, and before you can put on the brakes, it passes beyond the empirical universe and into another, completely different spatiotemporal region, with its own unique set of nomological properties. Imagine, however, that the breaks have completely malfunctioned. Thus, you continue hurling through this second spatiotemporal region and eventually pass into a completely different one, with a completely different set of nomological properties than the previous two. According to the single multiverse model, if you do not find a way to stop the Tardis, you will continue to pass from one discrete spatiotemporal region to another potentially indefinitely. This is one way—perhaps a very crude way—to imagine the *single multiverse model*.

Either version of the Multiverse theory can be used to explain the fine-tuning of the physical constants. For, given the serial multiverse model, one can say that it was inevitable that a spatiotemporal region fine-tuned for the advent of organic life would come into existence. Just as, if I pull the lever on a slot machine a sufficient number of times, it is inevitable that I will eventually win the lottery (assuming it is not unfairly rigged). It is not, therefore, surprising that we live in a universe fine-tuned for the advent of organic life. It was an inevitability. Likewise, given the *single multiverse model*, the probability that there exists a spatiotemporal region with physical constants fine-tuned for the advent of life is extremely high. In other words, if the universe is comprised of numerous spatiotemporal regions that contain virtually every possible combination of physical constants, one of these regions is bound to be fine-tuned for the advent of intelligent life. As intelligent organic lifeforms, it is, therefore, not surprising at all that we inhabit a spatiotemporal region fine-tuned for life. For it is the only region within the Multiverse that we could possibly inhabit!

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[28] For a classic scientific exposition of this theory see Linde (1994). For an engaging and winsome philosophical exposition and defence of a version of the single multiverse theory see Wallace (2012).

As should now be clear, if a version of the Multiverse theory is true, then it seemingly eliminates the need to appeal to a supernatural cause to explain the fine-tuning of the physical constants.[29] At any rate, whether you buy into the arguments in support of the Multiverse theory, or think MO successfully undercuts the Fine-Tuning argument is not of importance here. What is important, at present, is that the Fine-Tuning argument is vulnerable to MO for two reasons. First, because it is concerned with an empirically based highly specific theory-laden fact of the type that science is typically aimed at explaining; second, because it is pitting its supernatural causal explanation against a plausible scientific one; namely, the Multiverse theory.

The Kalām argument is vulnerable to MO for the same reason. If the *serial multiverse model* is accurate, then there is, evidently, no need to posit a supernatural cause of the Big Bang. The empirical universe began to exist because it is part of a continuous and infinite series of universe's that expand and contract. To be clear, I am not presently arguing that the Kalām argument is unsound (to do so would take us far afield from our present concerns).[30] What I am claiming is that the Kalām argument is vulnerable to MO for the same reasons that the Fine-Tuning argument is. First, it is concerned with an empirically based highly specific theory-laden fact of the type that science is aimed at explaining. Second, it is pitting a supernatural causal explanation against other possible scientific explanations of the same phenomena—specifically, in this case, against the *serial multiverse model*.

In stark contrast to both the Fine-Tuning and Kalām arguments, the eutaxiological argument is not vulnerable to MO. Unlike these arguments, it is concerned with a general metaphysical fact—the fact that the universe is ordered—and it proffers a metaphysical explanation for why this fact obtains. In other words, it is neither concerned with a empirically based highly specific theory-laden fact of the type that science is aimed at explaining, nor is it pitting a supernatural causal explanation against a competing scientific explanation. On the contrary, the conclusion of *Stage One* is logically compatible with any scientific model; including those that predict that existence of a Multiverse.

Conclusion

In this chapter I clarified what the term 'the universe' denotes in the eutaxiological argument. I outlined and explained the *Standard Taxonomy of the Universe* (STU) and showed that, problematically, it rules out the possibility that the conclusion of *Stage One* is true by fiat. I then outlined a modified version to STU, which I called STU 2.0. and showed that it is amenable to the eutaxiological argument. Following this, I explained that the eutaxiological argument utilises what STU 2.0 calls a physicalist conception of the universe. Specifically, a physicalist conception of the type 'The Physicalist Universe$_\alpha$', according to which 'the universe' denotes the total collection of all physical entities. Going through this, admittedly tedious, taxonomic process, helped me remove ambiguity from *Stage One*. It also allowed me to respond to two significant potential objections to the eutaxiological argument: namely, the God-of-the-Gaps Objection (GOGO) and the Multiverse Objection (MO). In

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[29] Recently, however, this notion has come under heaven criticism. In response to the Multiverse Objection, many recent proponents of the Fine-Tuning argument have argued that its conclusion is logically consistent with or even entails some version of the Multiverse theory. For examples of this see Saward (2013), Metcalf (2018), and Friederich (2019).

[30] Craig & Sinclair (2018) have provided an extended criticism of the serial multiverse model as part of their defence of the Kalām argument. Hence, one would need to seriously engage with their arguments if she wanted to show the Kalām argument to be unsound.

responding to these objections, I showed that the eutaxiological argument is not trying to fill any supposed gaps in our scientific knowledge and that it is, indeed, compatible with *any* conceivable cosmological model (even those which predict the existence of a Multiverse).

Moving forward, the reader must keep in mind that, unless I explicitly state otherwise, when I use the term 'the universe' I have in mind the *physicalist* conception of the universe I outlined in this chapter. Specifically, I have in mind the physicalist conception outlined by 'The Physicalist Universe$_\alpha$'. Having made these critical taxonomic points, it is now time to turn our attention to several other key terms of the argument. As we have seen, the eutaxiological argument is concerned with the order exemplified by physical entities. More specifically, it is concerned with the fact that each member of the total collection of all physical entities is ordered. We would do well, then, to say more about what it means for an entity to be physical and what it means to say that an entity is ordered. As we saw in Chapter 1, 'order' is used to denote a broad range of discrete phenomena exemplified by physical entities, and it is unclear why these seemingly disparate phenomena are encompassed under the single *genus* of order. In Chapter 3 I will, thus, focus my attention on clarifying these terms—i.e., 'physical' and 'order'—by developing what I call the *order-based* conception of the physical. Doing so will help me to revise the tentative definition of order I proffered in Chapter 1. It will also help me to develop sub-arguments in support of the truth of premise (1) of the eutaxiological argument.

Chapter 3: Order and the Nature of the Physical

3.0. Introduction

In the previous chapter I clarified what conception of the universe the eutaxiological argument is concerned with. I showed that the eutaxiological argument holds a *physicalist* conception of the universe according to which the universe is the total collection of all physical entities. There are, however, two big questions that remain unanswered. The first question is, *what is a physical entity?* Or, put differently, *what does the term 'physical' refer to?* Until we answer this question, the *physicalist* conception of the universe remains too ambiguous. The second critical question is, *what does the term 'order' refer to?* The tentative definition of order that I explicated in Chapter 1 is also far too ambiguous.

The aim of this chapter is twofold. First, I endeavour to clear up the ambiguities mentioned above and provide answers to the questions above. As will become apparent, how one answers the first question—namely, what one takes the term 'physical' to refer to—is inextricably tied to how one answers the second question regarding what the term 'order' refers to. The result of my analysis of these concepts is the development of a novel conception of the physical which I refer to as the *order-based* conception. The second aim of this chapter is to draw upon the *order-based* conception of the physical to proffer sub-arguments in support of the truth of premise (1) of the eutaxiological argument.

I begin, in Section 3.1., by examining standard physicalist's accounts of the physical. Broadly speaking, physicalists can be divided into two groups based on how they answer the following question: 'What is a physical entity?'. These two groups are: (a) *theoretical physicalists* who proffer a *theory-laden* conception of the physical, and (b) *nontheoretical physicalists* who proffer an *entity-based* conception of the physical.[31] I show that both *theory-laden* and *entity-based* conceptions of the physical—in so far as they are formulated and defended by physicalists—face serious problems. Following this, in Section 3.2., I develop an alternative account of the physical that I refer to as the *order-based* conception of the physical. After outlining the *order-based* conception I show that it is not vulnerable to the problems faced by standard *theory-laden* and *entity-based* accounts of the physical. In so doing, I clear up the ambiguities surrounding the terms 'order' and 'physical'. Finally, in Section 3.2., I build on this discussion to develop several sub-arguments in support of the truth of premise (1) of the eutaxiological argument.

3.1. Problems Facing Standard Physicalist Accounts of the Physical

Physicalists are committed to the claim that everything that exists is physical.[32] There is, however, disagreement over what it means for an entity to be physical. As I stated in the introduction, we can divide physicalists into two groups: (a) *theoretical physicalists* who proffer a *theory-laden* conception of the physical, and (b) *nontheoretical physicalists* who proffer an *entity-based* conception of the physical. In this section I briefly outline and explain

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[31] I am following Nagasawa (2008) in labelling proponents of the *entity-based* conception of the physical 'nontheoretical physicalists'.

[32] One must be careful here not to assume that by 'everything' the proponent of physicalism necessarily means that the ontologically universe—i.e., the total collection of all actually existing entities—is physical. Some proponents of physicalism—who are ontological monists—may, indeed, interpret it this way. Others, however, may simply take 'everything' to refer to the object of scientific inquiry—i.e., the physicalist universe.

the variant conceptions of the physical proffered by groups (a) and (b); following this I elucidate some of the problems facing their respective accounts of the physical. While I believe these problems are significant, my aim is not to decisively refute the ideas proposed by groups (a) and (b); rather, I merely want to show that both groups face some pretty serious objections. Doing so will make the *order-based* conception of the physical I proffer in Section 3.2.—which does *not* face the same challenges—more attractive.

3.1.1. Theory-laden conceptions of the physical

Let us begin by discussing group (a). Some global physicalists are referred to as theoretical physicalists because they proffer a *theory-laden* conception of the physical.[33] According to theoretical physicalism, the term 'physical' is a theory-laden concept that's extension is ultimately determined by whatever the most well-established theories in physics happen to be. One influential way of articulating this idea goes as follows:

Theory-laden conception: for an entity, x, x is physical *iff*: (i) x is mentioned by fundamental physics, or (ii) x is realised by things that are (Melnyk, 2009 p.9).[34]

So, for example, an object like a tree or a brick is, according to Melnyk, physical because it is realised by entities that are mentioned by fundamental physics (e.g., atoms, particles, fields, etc.). Likewise, an event is physical just in case it is realised by entities mentioned by fundamental physics. Entities like atoms, particles, fields, and forces are physical in virtue of the fact that they are explicitly mentioned by fundamental physics.

Unfortunately, the theory-laden conception faces some serious problems. One, longstanding, problem facing proponents of the theory-laden account of the physical is Hempel's Dilemma.[35] According to this objection, if we adopt a theory-laden conception of the physical this renders physicalism either false or trivial. For example, if by 'fundamental physics' we mean 'current theories in fundamental physics' then this renders the following proposition false <an entity, x, is physical if and only if it is mentioned by fundamental physics or realised by things that are>. The reason being current theories in fundamental physics are incomplete and will surely be modified and updated by scientists in the future. Furthermore, future physical theories will include entities that are not currently mentioned by fundamental physics. This entails there are, *contra* the theory-laden conception of the physical outlined above, physical entities that are not currently mentioned or realised by entities mentioned by fundamental physics. To escape this horn of the dilemma one might be tempted to maintain the term 'fundamental physics' denotes some future complete fundamental physics. Unfortunately, this renders the theory-laden conception of the physical trivial because what it means to be physical remains vague and unspecified.

Stoljar (2010) proffers another significant objection to *theory-laden* conceptions of the physical which I refer to as the modal challenge. The modal challenge states that it is, in principle, mistaken to define the physical with respect to physical theories about the actual

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[33] For further discussions regarding the *theory-laden* conception of the physical see Feigl (1967), Smart (1978), Lewis (1994), and Chalmers (1996).

[34] Shoemaker (2007) also explicates theoretical physicalism in terms of realisation. For another illuminative discussion of the concept of realisation and how it relates to physicalism see also Baysan (2015).

[35] For the original formulation of the dilemma see Hempel (1969). For lengthy and informative discussions about Hempel's Dilemma and some possible solutions to the dilemma see Melnyk (1997), Ney (2008), Stoljar (2010), and Msimang (2015).

world because this would entail only the actual world contains physical entities. According to Stoljar, this is a mistake because there is a possible world in which physics is radically different from the actual world, yet, there are physical entities. To use Stoljar's example, consider a possible world, W_1, completely described by medieval impetus physics. W_1 contains physical objects and properties—of which, having impetus is a central physical property. However, given the theory-laden conception of the physical outlined above, the proposition <having impetus is a physical property in W$_1$> is false. Why? Because 'having impetus' is not a property mentioned by the fundamental physics of the actual world; and, only entities mentioned by fundamental physics (in the actual world) or realised by entities mentioned by the fundamental physics (of the actual world) are physical. Hence, according to the *theory-laden* conception of the physical, any counterfactual proposition that asserts there are physical entities in a world whose fundamental physics differ from the actual world is false. Surely, however, this is a mistake. Surely there are true counterfactual propositions regarding physical entities in worlds with physics different from our own?

While the *theory-laden* conception suffers from some significant problems, it has a certain intuitive appeal. Intuitively, we accept that the entities mentioned by fundamental physics (and realised by entities which are mentioned by fundamental physics) are unquestionably physical. Accordingly, it seems very reasonable to think that we should be able to understand the nature of the physical by thinking about entities that are, unquestionably physical (like those mentioned by fundamental physics). Arguably, however, this intuition is best captured by group (b); and it is to their conception of the physical that we must now turn our attention.

3.1.2. Entity-based conceptions of the physical

Physicalists in group (b), who do not believe the term 'physical' is a *theory-laden* concept that's extension is ultimately determined by fundamental physics are referred to as *nontheoretical physicalists*. Nontheoretical physicalism begins by carefully considering paradigmatic examples of physical entities in order to determine what the term 'physical' denotes. Consequentially, a nontheoretical physicalist conception of the physical, is referred to as an *entity-based* conception of the physical.[36] Unlike the *theory-laden* conception, the *entity-based* conception takes the term 'physical' to be a metaphysical concept that's extension is determined by the notion of ontological continuity. As Nagasawa explains:

> The entity-based account starts with objects and properties that are unquestionably physical and states that objects and properties are physical if they do not have any ontological discontinuity with these paradigmatic physical objects and properties. The crucial point here is that nontheoretical physicalism is concerned only with the ontological continuity or discontinuity, not the theoretical continuity or discontinuity (Nagasawa, p.138).

So, based on Nagasawa's comments, we can articulate the entity-based conception of the physical as follows. We begin by identifying a set, *P*, of paradigmatic physical entities (i.e., entities that are unquestionably physical):

P: {quarks, atoms, molecules, crystals, roses, dogs, planets, solar systems, galaxies}

We can, then, define the *entity-based* conception of the physical like so:

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[36] For lucid articulations and defences of the *entity-based* conception of the physical see Stoljar (2001; 2010), and Nagasawa (2008).

Entity-based conception: for any entity, *x*, *x* is physical *iff x* is ontologically continuous with the members of *P*.

What, however, does it mean to say that an entity is ontologically continuous with the members of *P*? To understand this notion better we must turn to one of the *entity-based* conception's most substantial exponents, Daniel Stoljar.[37]

Utilising Stoljar's account of the *entity-based* conception, we can better explain what it means for an entity to be ontologically continuous with the members of *P* as follows:

Ontological continuity with *P* (OCP): For any entity, *x*, *x* is ontologically continuous with the members of *P iff*: (i) *x* shares the kind of properties required by a complete account of the intrinsic nature of the members of *P* and their constituents, or (ii) *x* possess a property which metaphysically (or logically) supervenes on the sort of properties required by a complete account of the intrinsic nature of the members of *P* and their constituents.[38]

A *prima facia* case can be made that the *entity-based* conception of the physical proffered by nontheoretical physicalists is superior to the *theory-laden* conception. The *entity-based* conception is neither vulnerable to Hempel's dilemma, nor to the modal challenge. The reason being its definition of the physical does not depend upon either current physics or some future complete model of the actual physical world.

Consider, for example, the first horn of Hempel's dilemma. It specifically targets the *theory-laden* conception of the physical. It states that if by 'fundamental physics' we mean 'current theories in fundamental physics' then this renders the proposition <an entity, *x*, is physical if and only if it is mentioned by fundamental physics or realised by things that are> false. Fortunately, the *entity-based* conception of the physical does not define the physical in this way and, thus, does not face the challenge presented by the first horn of the dilemma. The same can be said of the second horn. According to the second horn of Hempel's dilemma, if the term 'fundamental physics' denotes some future complete fundamental physics, then the *theory-laden* conception is trivial because what it means to be physical remains vague and unspecified. Again, since the *entity-based* account of the physical does not define the physical in terms of future physics, it does not fall victim to the second horn of the dilemma either.

Neither does it fall victim to the modal challenge. Like Hempel's dilemma, the modal challenge is specifically aimed at a *theory-laden* conception of the physical. Indeed, the

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[37] For the sake of clarity, I must note that Stoljar refers to his view as an *object-based* conception of the physical. I have opted, however, to follow Nagasawa in referring to this same position as the *entity-based* conception. Nothing terribly significant rides on this terminological difference.

[38] Stoljar's original formulation reads as follows: "a physical property is a property which either is the sort of property required by a complete account of the intrinsic nature of paradigmatic physical objects and their constituents or else is a property which metaphysically (or logically) supervenes on the sort of property required by a complete account of the intrinsic nature of paradigmatic physical objects and their constituents" (Stoljar, 2001 p.257). Stoljar never explicitly uses the term 'ontological continuity' in his account; nevertheless, I believe my adaption of his account to explain Nagasawa's notion of ontological continuity is consistent with Stoljar's position.

modal challenge points out a problematic feature of the *theory-laden* conception of the physical. It states that, given the *theory-laden* conception, any counterfactual proposition that asserts there are physical entities in a world whose fundamental physics differ from the actual world is false. This is a difficult position to defend because there are true counterfactual propositions regarding physical entities in worlds with physics different from our own. Fortunately, however, the *entity-based* conception is not open to this criticism because it does not define what it is to be physical with reference to what entities are mentioned by the fundamental physical theories of the actual world.

So, the *entity-based* conception is attractive because it avoids the significant problems facing *theory-laden* conceptions. It also captures the intuition that the entities mentioned by fundamental physics (or realised by such entities) are, unquestionably physical, and that this should, somehow, inform our understanding of the nature of the physical. Arguably, it captures this intuition better than the *theory-laden* conception because it starts with the notion that there are paradigmatic examples of physical entities and proceeds to develop a conception of the physical from this fact. Unfortunately, however, the *entity-based* account of the physical suffers from ambiguity. It simply isn't clear what kind of property or properties the members of P share in common that make them physical; and it certainly isn't clear what kind of property or properties an entity must possess in order to be ontologically continuous with the members of P.

According to OCP, if x is ontologically continuous with the members of P it will share the same kind of properties required by a complete account of their intrinsic nature or have properties that metaphysically (or logically) supervene on such properties. Must x, then, possess all the same kind of intrinsic properties as the members of P to be a physical entity; or is it sufficient if x only shares one or two intrinsic properties with the members of P? More importantly, what are these intrinsic properties anyway? The *entity-based* conception simply does not answer these questions because it does not specify the necessary or sufficient conditions that must be met (i.e., what properties x must possess) for x to count as being physical.

Suppose you asked me what it is to be an evergreen tree and I responded by, first, asking you to consider a set of paradigmatic evergreen trees T:

T: {Blue spruce, Eastern Hemlock, White Fir, Western Redcedar, Scots Pine}

Following this, imagine I explained that an entity, x, is an evergreen tree *iff* it is ontologically continuous with the members of T; then defined ontological continuity with T as follows:

> Ontological continuity with T (OCT): For any entity, x, x is ontologically continuous with the members of T *iff*: (i) x shares the kind of properties required by a complete account of the intrinsic nature of the members of T and their constituents, or (ii) x possess a property which metaphysically (or logically) supervenes on the sort of properties required by a complete account of the intrinsic nature of the members of T and their constituents.

I suspect you will not be pleased with my response to your question. The reason being I have not told you what kind of intrinsic properties x must possess in order to count as an evergreen tree (which is precisely the information you were seeking when you asked the question).

OCT strikes one as being a sophisticated way of saying something rather trivial; namely, something along the lines of the following proposition:

P10: Entity *x* belongs to set T *iff* it is like paradigmatic members of T.

P10 is profoundly unhelpful because the question at hand is, *'What makes x like the paradigmatic members of T?'* and P10 does not provide us with an answer. The *entity-based* account of the physical is, similarly, unhelpful because it does not tell us what kind of intrinsic properties an entity must possess to count as being physical.

One might respond that the *entity-based* conception is intentionally vague to accommodate future accounts of the intrinsic nature of the members of *P*. After all, it is unlikely that we currently possess a complete account of the intrinsic nature of any of the members of *P*. We may currently believe that a complete account of the intrinsic nature of the members of *P* include exemplifying properties *a*, *b*, *c*, *d*, and *e* (let the variables stand for whatever properties you like). In the future, however, we may discover that, in addition to exemplifying properties *a*, *b*, *c*, *d*, and *e,* a complete account of the intrinsic nature of the members of *P* includes a further property; namely, property *f*. This response, however, is not very helpful because, like the *theory-laden* conception, it leaves the *entity-based* conception of the physical open to the charge that it is trivial. For, ultimately, this response entails the *entity-based* conception is based on some future account of the intrinsic nature of the members of *P* that will include properties we cannot predict.

As I stated at the outset, the aim of this section was not to decisively refute (a) and (b); rather, I merely wanted to show that both groups face some significant problems. Group (a) faces Hempel's dilemma, and the modal problem and group (b) faces the problem of ambiguity and the problem of triviality. In the face of such problems, it is prudent to consider an alternative account of the physical. In Section 3.2., I proffer just such an account; namely, I defend an *order-based* conception of the physical. As I will demonstrate, the *order-based* conception is both explanatorily powerful and, advantageously, not vulnerable to the kind of objections facing *theory-laden* and *entity-based* conceptions of the physical. Additionally, the *order-based* account is amenable to many physicalist intuitions. This, I maintain, makes it a very attractive account of the nature of the physical.

3.2. An Order-Based Conception of the Physical

Like the *entity-based* approach, the *order-based* conception of the physical is a *species* of nontheoretical physicalism.[39] Meaning, it does not define what it is to be physical in terms of current or future fundamental physics. Additionally, like the *entity-based* approach, the *order-based* account also begins by considering the same set, *P*, of paradigmatic physical entities:

P: {quarks, atoms, molecules, crystals, roses, dogs, planets, solar systems, galaxies}

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[39] While the *order-based* conception of the physical is a novel metaphysical thesis of my own creation, it bears many striking similarities with elements of both contemporary proponents of the Aristotelian theory of *hylomorphism* (Cf., Johnston, 2006; Jaworski, 2016; Austin, 2017; Marmadoro & Paolini, 2019) and proponents of what is called ontic structural realism (Cf.,. Esfeld & Lam, 2011; Sider, 2011; Landry & Rickles, 2012; McKenzie, 2017). The primary inspiration for this view, however, can be found in the metaphysics of St Maximas the Confessor and his theory of the *logos* and the *logoi* (Cf., Tollefsen, 2008).

Unlike the *entity-based* approach, however, it identifies a specific property shared by the members of *P*; one that any entity must exemplify in order to be ontologically continuous with *P*; namely, the relation 'being ordered'.

It is relatively uncontroversial to state that entities like quarks, atoms, molecules, crystals, roses, dogs, planets, solar systems, and galaxies exemplify order. Indeed, the fact that the members of *P* exemplify order seems to be presupposed by science—which seeks to objectively describe both the way in which the members of *P* are ordered (i.e., what kind of order they exemplify), and explain what caused the members of *P* to exemplify the order that they do. As such, I take it that set *P* is identical to set, *O*—a set of paradigmatic ordered entities:

O: {quarks, atoms, molecules, crystals, roses, dogs, planets, solar systems, galaxies}

While it may be uncontroversial to state that entities like quarks and planets are ordered, it is, as we saw in Chapter 1, not always clear what is meant by stating this. Philosophers utilise the concept of order regularly; but, rarely, do they take time to define what the term 'order' means. To avoid the charge of ambiguity, therefore, I must explain what the term 'order' means when it is predicated of physical entities.

3.2.1. The Nature of Physical Order

As I outlined in Chapter 1, Swinburne has identified two basic categories of order exemplified by physical entities: what he terms 'spatial order' and 'temporal order' (Swinburne, 2004 p.154). It is important to go over this distinction once more. According to Swinburne, 'spatial order' denotes the co-present structure, arrangement, or configuration of an entity's parts or of the members of a collection of entities at a given time. For example, to say of a water molecule that it is 'spatially ordered' is to point out that, at a given time, its hydrogen and oxygen atoms maintain a tetrahedral shape with a bond angle of 104.5 degrees. The set of molecules that compose a crystal are 'spatially ordered' just in case, at a given time, they conform to a particular geometrical structure, e.g., many crystals exemplify a hexagonal shape. To say of a set of chairs in an auditorium, *C*, that they are 'spatially ordered' refers to the fact that at a time, say t_1, the chairs exemplify a structure; e.g., at t_1 they are arranged in rows of twenty, two inches apart, and all facing east. A set of books in a library may also be 'spatially ordered' at t_1 if they conform to an ordering principle; namely, if they are arranged in 'alphabetical order'.[40]

'Temporal order', on the other hand, denotes the regular, codifiable, behaviour or activities of physical entities as they move through time (Ibid., p154-55). For example, to say of a water molecule that it is 'temporally ordered' is to refer to the fact that water molecule's (and collections of water molecules forming a body of water) behave in regular, codifiable, ways under different circumstances; e.g., boiling when heated, becoming solid when cooled, acting as a universal solvent, etc. To say of the planets in our solar system that they are

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[40] Spatial order seems to be a *general* metaphysical category for Swinburne. The examples I have used are, obviously, very different. In the case of a water molecule, the order seems to be intrinsic to the object; contrarily, in the case of the set of books, the order seems to be extrinsically imposed onto the objects. What each example has in common is the *fact* that the object or set of objects possess some sort of structure or arrangement or configuration; i.e., the fact that the hydrogen and oxygen atoms that compose a molecule of water are arranged a particular way, and the fact that the books in a library are arranged a particular way, etc.

'temporally ordered' refers to the fact that they follow regular, codifiable, orbits around the Sun and rotate at a regular, codifiable, rate around their axes. Like a 'spatially ordered' entity, a 'temporally ordered' entity conforms to some pattern or principle. For example, the collection of planets, S, that orbit the sun in our solar system conform to a regular pattern; namely, the members of S follow an elliptical orbit around the sun which can be represented mathematically.

As I previously noted, a *prima facia* reading of Swinburne's distinction between spatial and temporal order may leave one scratching their head. Spatial order seems to be a *synchronic* relationship holding between some object and its parts or between some collection of objects at a time. Temporal order, in contrast, seems to denote a *diachronic* relation holding between entities as they are extended through time. Unfortunately, Swinburne does not explain why he groups 'spatial order' and 'temporal order' under the single *genus* 'order'; neither does he develop a clear definition of the concept of 'order' he has in mind. It is to this task that we must now turn our attention if we are to develop a coherent, unambiguous, and non-trivial account of the order-based conception of the physical.

In her seminal work on the nature of order, Ruth Lorand (2000) identifies four characteristic features of ordered entities. These features are *complexity, relationality, conformity to an ordering principle, and quantifiability*. I roughly follow Lorand's conception of order, with a few notable revisions. The first one being, I do not believe complexity is a necessary feature of a physical-ordered entity. Complexity is typically defined as follows:

Complexity: For any entity, x, x is complex *iff* x has proper parts.[41]

If we take complexity to be a necessary feature of physical-ordered entities, this may rule out the possibility that quarks, for example, are physical-ordered entities. Some believe that quarks are not composed of proper parts; that they are metaphysical 'atoms' or 'simples'. Presumably, however, if this should turn out to be true, they are still physical entities. Accordingly, I do not believe complexity is a necessary feature of order. Saying this is not to deny that many physical-ordered entities are complex. Atoms, molecules, crystals, roses, dogs, planets, solar systems, and galaxies are complex entities. However, the fact that many physical-ordered entities are complex is subsumed under one of the other necessary features of order proffered by Lorand; namely, the concept of relationality. It is to this feature I will now turn my attention.

The members of O are *relational*. More specifically, they stand in *n-adic* relations— i.e., relations that obtain between, at least, two or more numerically distinct entities. I, like Lorand, take relationality to be a general term that can denote a broad range of relations including mereological, causal, functional, instantiation, dependence, or grounding relations (and possibly many others!). Additionally, I take it that relations can be either *intrinsic* (e.g., the internal functional relation that holds between the constitutive parts of a biological organism) or *extrinsic* (e.g., the causal relation that holds between some cause, x, and its effect y). As I will explain in a moment, it is only the relationships that can be quantified that are important for developing a conception of order as it applies to physical entities. For now,

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[41] This is, indeed, also how Lorand defines complexity (Lorand, 2000 p.1).

however, let us briefly consider a few examples to illustrate what I mean by saying the members of *O* are *relational*.

Quarks stand in numerous intricate *n-adic* relations. For example, they are the proper parts of mesons. In turn, mesons are the proper parts of hadron particles (i.e., protons, electrons, and neutrons). Even if, therefore, quarks turn out to be simples—meaning they are not composed of proper parts—they are still relational in virtue of the fact that they are the proper parts of mesons and hadron particles and causally interact with other particles and atoms.[42] Consider, also, atoms. Atoms are composed of proper parts (i.e., protons, neutrons, and electrons) and, in turn, are the proper parts of molecules. For example, two of the constitutive parts of a water molecule are its hydrogen atoms. Thus, hydrogen atoms are relational because they both have proper parts and are the proper parts of numerous elements. As we move up the scale of being and consider entities like roses, dogs, planets, solar systems, and galaxies, it is uncontroversial to state that they are relational as well.

It is important to note that in saying the members of *O* are relational, we are remaining neutral regarding whether the universe is gunky, junky, or hunky. According to advocates of *gunkiness*, every entity in the universe has proper parts.[43] According to advocates of *junkiness*, every entity in the universe is a proper part.[44] Finally, according to advocates of *hunkiness*, every entity in the universe both has proper parts and is a proper part.[45] Each of these theories is compatible with the proposition that all the members of *O* stand in *n-adic* relations. Hence, one need not take a stand on whether the universe is gunky, junky, or hunky, to agree that paradigmatic examples of physical/ordered entities are relational. This point will be of great importance in Chapter 6, where I argue for the fundamentality and ontological distinctness of *logos*. For now, however, let us keep our attention to the concept of order.

The examples I have highlighted so far only show that the members of *O* are relational in the sense that they stand in mereological or compositional relationships, i.e., they either are composed of proper parts or are proper parts. As I stated, however, mereological relations are not the only relations associated with physical order. The members of *O* also, for example, stand in causal relationships. So, for example, quarks causally interact with other particles like antiquarks to form various bonds, molecules interact with each other to cause numerous different kinds of chemical reactions, dogs bark at passers-by and wag their tales when someone rubs their bellies, and the gravitational pull of the moon causes the tides.[46] Some of the members of *O*—i.e., roses and dogs—also exemplify systemic or functional relationships. Meaning, their various constitutive parts (e.g., cells, tissues, etc.) form a system coordinated to perform or to contribute to the performance of some function (e.g.,

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[42] It is worth noting that if string theory is true, quarks are not simples but composed of strings of energy.

[43] For more on *gunk* see Sider (1993) and Schaffer (2003).

[44] For more on *junk* see Bohn (2009a;2009b).

[45] For more on *hunk* see Bohn (2009a) and Giberman (2020).

[46] I am not, here, assuming any particular conception of causation. I take it that the proposition <the members of *O* stand in causal relationships> is logically consistent with whatever conception of causation one prefers. Accordingly, I am also remaining neutral regarding what kind of thing (e.g., events, facts, properties, substances, etc.) the *relata* of causal relationships are. For the sake of simplicity and convenience, however, I typically talk about causation purely in terms of *event-event* causal relationships in this thesis. One, however, should not read too much into this choice.

transforming sunlight into food via the process of photosynthesis). We could proliferate these examples *ad nauseum*—I believe, however, the examples I have given will suffice.

I will conclude my discussion of relationality by noting that, arguably, the members of *O* stand in various metaphysical relationships as well. Most notably, they arguably stand in instantiation, existential dependence, and grounding, relationships. As I have already hinted at, however, I do not believe these kinds of relationships are important for developing the conception of order needed for the *order-based* account of the physical. To understand why I think this, however, we must first consider two more characteristic features of the members of *O*: namely, 'conformity to an ordering principle' and 'quantifiability'.

Let us first discuss the fact that the relations exemplified by the members of *O* conform to an ordering principle. Unfortunately, Lorand does not provide a clear definition of an ordering principle. I define the term 'ordering principle' as follows:

> Ordering principle: An *exemplar* or *plan* that specifies the way in which a given collection of entities, *E*, relate to each other by describing an explicit, non-empty, finite, and complete set of requirements {R1, …, Rn} to be satisfied by the elements of *E*.[47]

A pattern is a paradigmatic example of an ordering principle. A pattern specifies the way in which a given collection of entities, *E*, relate to each other by describing an explicit, non-empty, finite, and complete set of requirements {R1, …, Rn} to be satisfied by the elements of *E*. Examples of entities conforming to patterns abound in nature. Some examples include the reoccurring ripples one sees in the desert sand, the reoccurring geometrical forms one encounters in a honeycomb, the regular beating of a heart that regulates an organisms blood flow, the regular elliptical orbits of the planets in our solar system, the fact that sugar cubs recurrently dissolve when dropped in water. Importantly, patterns can be instantiated *synchronically*—e.g., the reoccurring hexagonal shape of a honeycomb at a time, t_1—or *diachronically*—e.g., the reoccurring beating of a heart, and regulation of an organism's blood, for a duration of time (say, from t_1—t_5).

Another example of an ordering principle is *structure*. Following Harte (2003) and Koslicki (2008), I take the term 'structure' to denote the way a given set of parts are supposed to be arranged or configured. According to this view, a structure specifies what "slots" or positions an entity's parts must fill to instantiate a specific identifiable type of arrangement or configuration (Cf., Harte, 2003 p.162-164; Koslicki, 2008 pp.235-236). Examples of entities that conform to structures also abound in nature. Consider, for example, a water molecule *w*. The atoms that compose *w* are positioned so that they conform to a specific type of configuration; namely, a tetrahedral shape with a bond angle of precisely 104.5 degrees. Or consider, for example, the planets in our solar system. They each stand at certain precise measurable distances from each other, rotate on their axis' at certain measurable rates, and follow precise elliptical orbits around the sun. As such, the members of the collection of planets in our solar system fill certain slots or positions that conform them to an oval or egg shape. Like patterns, structures can be instantiated *synchronically*—e.g., the proper parts of a water molecule can conform to a tetrahedral shape at a time, t_1—or *diachronically*—e.g., the

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[47] The formulation of this definition is adapted from and influenced by Floridi's fascinating discussion about the logic of design (Floridi, 2019 p.200).

planets in our solar system can conform to an egg shape for a duration of time (say, from time t_1—t_5).

This brings us to the final characteristic feature of ordered entities. Many of the relationships exemplified by the members of *O* are *quantifiable*. I define quantifiability as follows:

> Quantifiability: a relationship, *R*, is quantifiable *iff*: (i) it can be precisely measured, (ii) it can be codified, or (iii) it can be represented by an empirically testable model.[48]

A relationship, *R*, is measurable if we can apply some sort of precise metric to it. For example, I can measure the distance between New York city and Pasadena in kilometres or miles. *R* is *codifiable* if it can be expressed mathematically. So, for example, the causal relation that obtains between the moon and the tides can be expressed mathematically. Many relations can be represented using empirically testable models. For example, the systemic or functional relation that obtains between an organism's organelle, can be represented with a mathematical model or blueprint that can be empirically tested.
Cosmologists build empirically testable models of the universe to describe its structure and behaviour. Chemists mathematically model and test the structures of atoms and molecules. Sociologists routinely measure how individuals and groups socially relate to each other and represent this data through statistical models. Again, we could proliferate examples like these *ad nauseum*—I think, however, the examples I have provided are enough.

Quantifiability is an important feature of the order that obtains in physical entities because science presupposes physical entities can be measured, codified, and mathematically modelled. Indeed, it is difficult to see how science could even get off the ground if it were not for the fact that many of the relationships exemplified by physical entities are quantifiable. I think the fact that science presupposes the physical world is ordered, and hence is quantifiable, provides support for the *order-based* account of the physical. I will, however, say more about this in a moment.

Presently, I wish to make a point of clarification. Metaphysical relationships like instantiation, dependence, or grounding are *not* quantifiable in the sense that I have just discussed. Imagine, for example, trying to precisely measure the rate at which an abstract entity like *Redness* is instantiated in some physical entity like a rubber ball, or trying to explicate the laws of physics that govern the grounding relation that obtains between, say, Bob Newhart and the singleton set {Bob Newhart}, or trying to build an empirically testable model of the grounding relation that obtains between a fact and a proposition. It simply is not possible to engage in these activities because metaphysical relations are not quantifiable (in the sense that I am using the term). To be clear, one can generate crude models of these relationships, like the following (where '→' represents a grounding relation):

Bob Newhart → {Bob Newhart}

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[48] According to Lorand, to say that an ordered entity is quantifiable is to say that one can measure the degree to which its parts conform to an ordering principle. I cannot, however, follow her here because this assumes all ordered entities are complex. As we have seen, my account of order does not assume this. Furthermore, I think what is unique about physical order is the fact that it can be precisely measured, codified, and represented by empirically testable models.

One can argue that, in some sense, order obtains between the *relata* in this grounding relation—i.e., because Bob Newhart is ontologically prior to {Bob Newhart} and we can model this using the symbols above. Nevertheless, the relation that obtains between Bob Newhart and {Bob Newhart} is *not* quantifiable—it cannot be precisely measured, or codified, and the model above cannot be empirically tested. Consequentially, it is not the type of relationship that the *order-based* account of the physical is concerned with. Having made that point of clarification, we are now able to develop a definition of order.

Pulling everything together, we have identified three characteristic features of ordered entities:

(I) Relationality

(II) Conformity to an ordering principle

(III) Quantifiability

Taking all this into consideration, then, we can conclude the following:

An entity, x, is ordered iff x exemplifies a quantifiable relationship conforming to an ordering principle.

From this, we can derive the definition of 'order' as:

A quantifiable relationship conforming to an ordering principle.

Now that I have developed a definition of order, I can more clearly articulate the *order-based* conception of the physical.

3.2.2. The Nature of Physical Entities

As I noted at the beginning of this section, my proposal is that exemplifying order is a jointly necessary and sufficient condition for being physical. Accordingly, I propose we should define what it is to be physical as follows:

Order-based conception of the physical: For any entity *x*, *x* is physical *iff x* is ordered (i.e., *x* exemplifies a quantifiable relationship(s) conforming to an ordering principle(s)).

The *order-based* conception of the physical has many advantages over the *entity-based*. To begin with, it explicitly tells us when an entity is ontologically continuous or discontinuous with a member of *P*. In other words, if an entity exemplifies order then (according to the *order-based* conception) it is ontologically continuous with the members of *P*. Contrastingly, if an entity does not exemplify order then it is ontologically discontinuous with the members of *P*.

Let us briefly consider an example to illustrate this. Suppose, hypothetically, that abstract entities like numbers, sets, or forms, exist in the sense that Platonists believe. Given the *order-based* conception of the physical, we can confidently identify abstract entities as non-physical entities. Unlike atoms, molecules, dogs, and planets, for example, abstract entities like numbers or *forms* do not exemplify order (as I have just defined it). To be sure, abstract entities can stand in *n-adic* relations with other non-physical entities or with physical

entities. For example, Trogdon and Cowling (2019) have recently argued that some abstract objects are aggregates of ontologically simple abstract objects.

Additionally, abstract entities like sets are believed by many to be grounded in physical entities like human beings. Yet, even if we grant that this is true, one cannot quantify (i.e., precisely measure, codify, or build empirically testable models of) the grounding relationships that supposedly exist between one abstract entity and another or between an abstract entity and a physical entity. Since quantifiability is a necessary feature of order, it follows that abstract entities are not ordered (according to the definition of order above) in virtue of the fact that they do not stand in any quantifiable relationships. This entails they are ontologically discontinuous with members of *P* and are, therefore, not physical.

The fact that the *order-based* account is sufficiently constrained—meaning, it explicitly tells us what makes an entity ontologically continuous or discontinuous with the members of *P*—gives it a distinct advantage over the *entity-based* account. There are, however, other advantages to adopting this definition of the physical. The *order-based* conception is not vulnerable to any of the objections outlined in Section 1. Specifically, it is neither susceptible to Hempel's dilemma nor to the modal problem that group (a) is vulnerable to. For, unlike *theory-laden* conceptions of the physical, the *order-based* account does not define what it is to be physical in terms of current or future physical theories. As such, Hempel's dilemma and the modal challenge do not apply to it.

Additionally, it is not vulnerable to the problem of ambiguity or triviality that group (b) is susceptible to. For, unlike the *entity-based* account, the *order-based* conception identifies the specific property that entities in set *P* share that makes them physical; namely, the relation 'being ordered'. It also provides a clear definition of 'order'—providing a set of jointly necessary and sufficient conditions for something to count as being ordered.

The *order-based* conception of the physical is also ideal because it makes sense of why science is so successful. It is common to conceive of science as a tight-knit family of disciplines and methodologies aimed at describing and explaining the order exemplified by physical entities. As I alluded to at the beginning of this section, the very possibility of science successfully uncovering the objective nature of the physical world depends upon the physical world exemplifying a significant amount of order at every level. As Rescher so eloquently states:

> If the world were not orderly (both in itself and as concerns the *modus operandi* of inquiring creatures), then there would be no uniformity in information-gathering, information-storage, etc., and consequently there would be no avenue to the acquisition of knowledge of the world—or indeed even putative knowledge of it. If the attainment—nay even the pursuit—of knowledge is to be possible for us, the world must be at any rate sufficiently orderly to permit of our cognitive functioning. This rulishness is basic to the very possibility of natural science. The aims of science—the description, explanation, prediction, and control of nature—would clearly be altogether unrealizable in a world that is badly asystematic. A significant degree of ontological systematicity *in* the world is (obviously) a causal requisite for realizing codificational systematicity in our knowledge *of* the world (Rescher, 2003 p.18).

Indeed, much of what scientists do is describe how physical entities are ordered—i.e., measuring physical entities, building mathematical models of them, uncovering the patterns or structures they conform to, etc. If exemplifying order is what makes a given entity physical—as the *order-based* account says—this explains why science has been so successful at studying the physical world. For, given the *order-based* account of the physical, physical entities are, by definition, ordered entities and, hence, in principle, open to scientific investigation.

Building on this, adopting the *order-based* approach to the physical may help us develop a nonreductive ontological conception of the unity of science. It is beyond the scope of this chapter to rigorously develop this idea here, but I can provide a brief and tentative sketch of what I mean. One can argue that what unifies the various scientific disciplines is that each one is aimed at describing and explaining the order that obtains between the physical entities (and their parts) that fall within their domain of inquiry. The cosmologist, for example, is attempting to describe and explain the order exemplified by the universe. The chemist is attempting to describe and explain the order exemplified by atoms, molecules and compounds. The biologist is trying to describe and explain the order exemplified by biological organisms and ecosystems. Likewise, the sociologist is attempting to describe and explain the order exemplified by individuals and societies. Every scientific discipline is attempting to describe and explain the order exemplified by physical entities; yet no one level of reality is privileged. For example, the order that obtains in crystals and dogs is not merely reducible to the order that obtains in elementary particles (even if they existentially depend on each other or causally interact with each other via top-down or bottom-up causation). To provide a full scientific account of objects like dogs and crystals one needs to take into account the order they exemplify at both a microscopic and macroscopic level. What unifies scientific activity is the fact that all the scientific disciplines are aimed at describing and explaining the order exemplified by the physical entities they are studying.

Ceteris paribus, the *ordered-based* conception of the physical is a very attractive metaphysical theory. In the next section, I shift my attention back to premise (1) of the eutaxiological argument. First, I draw on the *order-based* conception of the physical to provide a more precise interpretation of premise (1) of the eutaxiological argument. Following this, I develop several reasons why it is more reasonable to believe premise (1) is true than false.

3.3. The Order-Based Account and The Eutaxiological Argument

Now that I have outlined the *order-based* conception of the physical, I can interpret and defend premise (1) of the eutaxiological argument. Recall that premise (1) states the following: <The universe is ordered>. In Chapter 2, I clarified that, within the context of the eutaxiological argument, 'the universe' is a plural term that denotes the total collection of all physical entities. According to the *order-based* conception of the physical, an entity is physical just in case it exemplifies order, i.e., a quantifiable relationship(s) conforming to an ordering principle(s). Tying all this together we can, thus, interpret premise (1) as being equivalent to the following proposition: <The total collection of all physical entities exemplifies quantifiable relationships conforming to ordering principles>. In other words, each member of the physicalist universe exemplifies order—e.g., every quark, atom, molecule, organism, rock, planet, sun, and solar system, exemplifies quantifiable relationships conforming to ordering principles of some type.

Now that I have clarified what premise (1) is stating, we can consider several reasons why it is more reasonable to believe it is true than false. In Section 3.3.1., I show that premise (1) enjoys strong empirical confirmation and that it is a proposition that must be true for science to even get off the ground. This, alone, makes it more reasonable to believe premise (1) is true than false. Nevertheless, in Section 3.3.2., I develop a metaphysical argument that shows that, given the *order-based* account of the physical, it is metaphysically impossible for premise (1) to be false.

3.3.1. Some Empirical and Metaphysical Considerations

To begin with, we have strong empirical reasons for believing (1) is true. Our shared experience of the world—bolstered by hundreds of years of scientific research—teaches us that physical entities stand in *n-adic* relationships. For example, observation confirms that paradigmatic physical entities such as particles, atoms, molecules, plants, animals, rocks, planets, solar systems, galaxies, super-galaxies all stand in *n-adic* mereological, causal, and systemic or functional relationships. Furthermore, observation also confirms that these relationships conform to various ordering principles (i.e., patterns or structures) that are quantifiable (i.e., can be measured, codified, or mathematically modelled). I could literally fill thousands of pages with examples, drawn from the sciences, to back this claim up empirically. I believe, however, that the list of paradigmatic physical entities I just sketched will suffice. Given that 'the universe' (as interpreted by 'The Physicalist Universe$_\alpha$') is a plural term that refers to the total collection of all physical entities, we have strong empirical confirmation for the truth of premise (1) because observation overwhelming confirms that physical entities are ordered.

There is another reason for believing premise (1) is true. As I argued in Section 3.2., the very possibility of science successfully uncovering the objective nature of the physicalist universe depends upon the entities that comprise it exemplifying order at every level. Given that the various scientific disciplines are all aimed at explaining and describing the order that obtains within their given domain of inquiry, it follows that science could not be successful if premise (1) is false.

One might, however, be concerned about these empirical and metaphysical reasons for believing (1) is true because they presuppose scientific realism. A scientific anti-realist might contend science does not, nay cannot, tell us anything about the objective order exemplified by the universe because the universe does not conform to any mind-independent structures or patterns, i.e., it is not objectively ordered. An anti-realist making this claim would contend that scientific theories are merely mental or social constructs that we project onto the world and do not correspond to any objective features of the external world. My response to this is that scientific anti-realism is not a unique problem facing the eutaxiological argument. Rather, it is a general problem facing anyone who believes there is an external world that is objectively ordered, and that science successfully (though not perfectly) explains and describes this order. It is far beyond the scope of this chapter, however, to develop a full-blown defence of scientific realism. Suffice it to say, I think the overwhelming success of science indicates some form of scientific realism, and not anti-realism, is true. While I do not have space to defend this contention here, I can point the interested reader to several recent discussions about scientific realism: (Cf., Saatsi, 2017; Sprenger & Hartmann, 2019; Park, 2019; Rowbottom, 2019).

In any event, as long as one is willing to embrace some version of scientific realism, the fact that premise (1) enjoys strong empirical confirmation and the fact that science could not get off the ground if premise (1) were false, is more than enough to justify believing premise (1) is true. Nevertheless, there is an even stronger metaphysical argument one could make for the truth of premise (1). In the next section I argue that, given the *order-based* conception of the physical, it is metaphysically impossible for premise (1) to be false.

3.3.2. The Metaphysical Impossibility of the Existence of a Disorderly Universe

Some believe it is metaphysical possible for the universe to exist and for premise (1) to be false. Swinburne's teleological argument, for example, is built on the assumption that it is possible for the universe to exist and for it to be disorderly. As he explains, "The orderliness of the universe … is a very striking fact about it. The universe might so naturally have been chaotic, but it is not—it is very orderly" (Swinburne, 2004 p.154). It is this datum—i.e., the supposed fact that the universe might have been disorderly or chaotic—which, he believes, makes the fact that the universe exemplifies order a striking feature that cries out for explanation. Unlike Swinburne's teleological argument, however, the eutaxiological argument is not built on the belief that the universe might have been disorderly or chaotic. Instead, the eutaxiological argument draws the exact opposite conclusion. It holds that, necessarily, if the physical universe exists, it is ordered. In other words, it holds that it is not metaphysically possible for the physicalist universe to exist and for its members to be completely disordered.[49] It holds this view because of its commitment to the *order-based* account of the physical.

According to the *order-based* conception of the physical I outlined and defended in Section 3.2., an entity is physical just in case it is ordered, i.e., just in case the entity conforms to a quantifiable relationship(s) conforming to an ordering principle(s). So, given that the physicalist universe is comprised of only physical entities, and given the *order-based* conception of the physical, it follows necessarily that the universe is ordered. We can formalise this as follows:

Argument for the Metaphysical Necessity of an Orderly Universe (AMNOU)

(1) The universe is the total collection of all physical entities.

(2) If the universe is the total collection of all physical entities, necessarily, it is ordered, i.e., necessarily each member of the universe exemplifies a quantifiable relationship(s) conforming to an ordering principle(s).

(3) Therefore, necessarily, the universe is ordered

Premise (1) of AMNOU defines the universe per 'The Physicalist Universe$_\alpha$'. One should not, however, read too much into this. One could easily reformulate AMNOU using 'The Physicalist Universe$_\beta$' or 'The Physicalist Universe$_\delta$'. So, while I have chosen to define the universe per 'The Physicalist Universe$_\alpha$', the success of AMNOU does not hinge on this

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[49] Nicholas Everitt (2003) argues for this same conclusion—i.e., that it is metaphysically impossible for the universe to be disordered—to refute Swinburne's teleological argument. Whereas I am arguing for this view to support the first premise of the eutaxiological argument the existence of God.

choice. With that point having been made, let us focus our attention on AMNOU's key premise; namely, premise (2).

According to the *order-based* conception of the physical, premise (2) of AMNOU is true by definition. In other words, an entity is physical just in case it exemplifies the relation 'being ordered' according to the *order-based* conception. Therefore, it necessarily follows that the total collection of all physical entities is ordered. Taken all together, if one adopts the *order-based* conception of the physical, AMNOU is a sound argument; and, if AMNOU is sound, it follows that premise (1) of the eutaxiological argument is true.

One might be concerned, however, that if AMNOU is sound—i.e., if premise (1) of the eutaxiological argument is necessarily true—this entails a form of *necessitarianism*. More specifically, one might worry that if it is necessarily true that the universe is ordered this entails that the universe is necessarily ordered the way it is. In which case, there are no possible worlds containing universes that conform to different types of ordering principles than that of the actual universe. Fortunately, this is not the case.

The quantifiable relations conforming to ordering principles that hold between physical entities are *contingent.* There are numerous (perhaps infinite) different ordering principles that the physical entities that populate the actual world might have conformed to. Hence, the order that obtains in the actual world does not, necessarily, obtain in every possible world. There are possible worlds containing universes that conform to different ordering principles. To make this clearer, let us stipulate that the actual universe conforms to the set of ordering principles, I_1—where 'I_1' merely signifies the set of ordering principles that the universe's members objectively conform to. While it is true that, necessarily, the universe is ordered, it is, nevertheless, possible that the universe could have conformed to a different set of ordering principles, e.g., $I_1, I_2, I_3 \dots I_n$.

Hence, on the *order-based* conception, it is correct to say that, necessarily, the universe exemplifies order. It is, however, incorrect to say that, necessarily, the universe conforms to I_1. For the universe might have been ordered in many different ways. Therefore, the conclusion of AMNOU does not entail a form of *necessitarianism*. Rather, it is still a contingent fact that the universe exemplifies the type of order that it does. This point is of great significance and will be considered more carefully in Chapter 5 where I argue that *logos*—i.e., the entity, *x*, that grounds the universe's order—is analogous to an intelligent agency or Mind.

All of this is to say, if the *order-based* conception of the physical is true, then AMNOU is sound and, consequentially, premise (1) of *Stage One* of the eutaxiological argument is necessarily true.

Conclusion

In this chapter, I began by examining standard physicalist's accounts of the physical. I noted that a crucial question facing the proponent of physicalism is what the term 'physical' denotes? I then divided physicalists into two broad groups based on how they answer this question: (a) *theoretical physicalists* who proffer a *theory-laden* conception of the physical, and (b) *nontheoretical physicalists* who proffer an *entity-based* conception of the physical. I

then showed that both *theory-laden* and *entity-based* conceptions of the physical face serious problems.

Following this, I developed a compelling alternative account I referred to as the *order-based* conception of the physical. After explaining the *order-based* conception, I extolled its numerous virtues and argued that it is the ideal conception of the physical. I argued that it is both explanatorily powerful and, ideally, not vulnerable to the problems faced by standard *theory-laden* and *entity-based* accounts of the physical. Importantly, in explicating the *order-based* account of the physical, I also cleared up the ambiguities surrounding the terms 'order' and 'physical' as the eutaxiological argument uses them. I concluded by developing supporting arguments for the truth of premise (1) of the eutaxiological argument. If the sub-arguments for premise (1) where successful, we have good reason to believe the proposition <The universe is ordered> is true. It is now time to turn out attention to premise (2) of the eutaxiological argument. Premise (2) states that 'If the universe is ordered, it has a ground of its order'. In Chapter 4, I unpack the concept of grounding that the eutaxiological argument is concerned with and proffer arguments in support of the truth of premise (2).

Chapter 4: The Existence of Logos

Let us begin by revisiting the first stage of the eutaxiological argument once more:

The Eutaxiological Argument Stage One

(1) The universe is ordered.

(2) If the universe is ordered, it has a ground of its order.

(3) The universe has a ground of its order.

In Chapters 2 and 3 I focused most of my attention on clarifying several key terms of the argument, explicating several important metaphysical theses, and defending premise (1). In this chapter, I focus on developing a supporting argument for the truth of premise (2) of the eutaxiological argument. Unlike the majority of contemporary teleological and cosmological arguments, I do not defend premise (2) by appealing to some version of the Principle of Causality (POC) or the Principle of Sufficient Reason (PSR). On the contrary, I grant, for the sake of argument, that there may be some explanatorily brute facts; and, thus, that principles like POC and PSR are false. Nevertheless, I argue that whenever we encounter some unexplained existential fact, *F*, it is never reasonable to believe *F* is explanatorily brute. From this, I argue that it is more reasonable to believe premise (2) of the eutaxiological argument is true than false.

I begin, in Section 4.1., by clarifying one final key term in the argument; namely, by explaining the notion of 'ground' and how it relates to the concept of metaphysical explanations. In Section 4.2, I engage in a careful analysis of the concept of brute facts. In my analysis, I distinguish between *epistemologically brute* and *explanatorily brute* facts. In Section 4.3., I build on these discussions and argue that it is never reasonable to believe an existential fact is explanatorily brute. I conclude that it is, therefore, more reasonable to believe that premise (2) of the eutaxiological argument is true than false.

4.1. The Notion of Ground and Metaphysical Explanation

Premise (2) states that <If the universe is ordered, it has a ground of its order>. I will begin by clarifying the concept of ground at work here. Some consider grounding to be a relation that only holds between facts (i.e., obtaining states-of-affairs). Others, however, take grounding to be a general metaphysical relation that can hold between various discrete entities from different ontological categories (including facts, propositions, objects, properties, etc.). Following Correia (2005), Schaffer (2010; 2016), and Fine (2012), I assume the latter. Meaning, I take grounding relations to obtain between entities from many different ontological categories including, but not limited to, abstract entities like numbers and sets, and concrete physical entities like trees and piles of sand. Another way of expressing this is that grounding is a *genus* of which there are many different *species*. This approach is ideal because it accommodates the wide range of paradigmatic examples of grounding relations that one encounters in the literature (and, indeed, throughout the history of philosophy). Some paradigmatic examples of ground include the following:

1. The existence of the singleton set {Bob Newhart} is grounded in the existence of the physical entity Bob Newhart.

2. The truth of the proposition <Bob Newhart exists> is grounded in the fact that the physical entity Bob Newhart exists.

3. The existence of an H_2O molecule, *w*, is grounded in the existence and arrangement of *w's* hydrogen and oxygen atoms.

4. A concrete instance or token of the Jazz Walk is grounded in the existence of a dancer performing the Jazz Walk.

To accommodate all these examples (and many others) it is prudent to take grounding to encompass a wide range of *relata*.

Now that I have considered the *relata* involved in grounding relations let us turn our attention to the formal features of ground. As I explained in Chapter 2, there are certain formal features of grounding relations that most philosophers accept. As we saw, standard or "orthodox" accounts of grounding maintain grounding is *irreflexive, asymmetric, and transitive.*[50] By irreflexive we mean that an entity, *x*, cannot ground its own existence. In other words, there must, at least, be two distinct entities—an *x* and a *y*—for a grounding relation to hold. The relationship between *x* and *y* must also be *asymmetric*. Asymmetry entails that, if *y* depends on *x* for its existence, then *x* cannot depend on *y* for its existence. Finally, if a grounding relationship holds between three or more entities—e.g., an *x*, *y*, and *z*—then it will be *transitive*. Transitivity entails that if *y* depends on *z* for its existence, and *z* depends on *x*, then *y* depends on *x* for its existence. Following standard or "orthodox" accounts of grounding, I shall also take grounding to be *irreflexive, asymmetric, and transitive.* I will say more regarding why I follow the "orthodox" conception of ground in a moment.

Grounding is also closely associated with the notion of ontological dependence. More specifically, a grounded entity, *x*, is said to existentially depend for its existence (either fully or partially) on its ground, *y*. Following Correia (2008), we can use the sentential operator '□' for metaphysical necessity, the one-place predicate 'E' for existence, and the two-place sentential operator '→' for material implication to formalise ontological dependence as a form of existential dependence as follows:

$$\Box \, (Ex \rightarrow Ey)$$

Returning to the examples above, we can rephrase them in terms of existential dependence as follows:

5. Necessarily, if the physical entity Bob Newhart exists, the singleton set {Bob Newhart} exists.

6. Necessarily, if the fact that the physical entity Bob Newhart exists obtains, the proposition <Bob Newhart exists> is true.

7. Necessarily, if a hydrogen atom and two oxygen atoms are bonded together and are arranged in a tetrahedral shape with a bond angle of 104.5 degrees, a H_2O molecule, *w*, exists.

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[50] Michael Raven (2013) is one of the first to explicitly label this the "orthodox" approach to ground.

8. Necessarily, if a dancer engages in the act of performing the Jazz Walk, a particular concrete instance or token of the Jazz Walk exists.

Grounded entities are, thus, non-self-sufficient or derivative entities. Meaning, their existence is generated by or derived from or built upon an entity or entities which are more fundamental.[51] This observation leads us to another concept of central importance; namely, the notions of *ontologically priority* and *posteriority*.

An entity, x, is said to be ontologically prior to y just in case x is more fundamental than y. So, for example, if x grounds y, then we say that x is a more fundamental entity than y, i.e., that x is *ontologically prior* to y. To return to the example of the water molecule again, the existence and unique arrangement of the hydrogen and oxygen atoms that ground the existence of the water molecule are said to be more fundamental than or ontologically prior to the existence of the water molecule. This reveals that grounding relations are hierarchical or layered in the sense that they involve a numerically distinct entity, x, depending for its existence upon some numerically distinct entity, y, that exists on a lower or more fundamental level of reality.

Importantly, the notion that grounding is concerned with priority relations entails the formal features of ground outline above. Here is why. It is incoherent to say that an entity, x, is ontologically prior to (i.e., more fundamental than) itself—which is precisely what we would be saying if we claimed that an entity could ground itself. Hence, if the entity doing the grounding is ontologically prior to the entity being grounded, it follows that grounding relationships are *irreflexive* (i.e., that an entity, x, cannot ground itself).

Likewise, if the grounding entity, x, is ontologically prior to that which is being grounded, y, it would be incoherent to say that:

P11: x is ontologically prior to and more fundamental than y, and y is ontologically prior to and more fundamental than x.

It follows, therefore, that if we understand grounding in terms of ontological priority, grounding relationships are *asymmetrical* (i.e., if x grounds y then y cannot ground x). Finally, if the grounding entity, x, is ontologically prior to that which is being grounded, y, then it also follows that x is ontologically prior to any entity that is grounded in y. So, for example, let us say that z is grounded in y, and y is grounded in x. It would be problematic to say that z is ontologically prior to x, because z is ontologically posterior to y, which is ontologically posterior to x. To assert otherwise would, ultimately, lead us right back to the contradiction in P11. It follows, therefore, that grounding relationships are *transitive*; that is, if x is ontologically prior to y, and z is grounded in y, then x is ontologically prior to z.

Finally, grounding is closely associated with the concept of metaphysical explanation. It is, therefore, to this concept that we must now turn our attention.

4.1.1. Metaphysical Explanation

According to Bohn (2018), a grounding relation is not, itself, an explanation but is, instead, tracked by metaphysical explanations—just as a causal relation is not, itself, an

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[51] Karen Bennett (2017) describes grounding relations as being a type of building relation whereby a grounded entity is said to be built upon or generated by the entity that grounds it.

explanation but tracked by causal explanations.[52] To understand this, I will begin by saying something, more generally, about the concept of an explanation (I will say even more about this in Section 4.2.). Explanations are propositions put forth to account for some *explanandum*, i.e., some phenomena or fact of experience. An explanation is, thus, an answer to a *why or in virtue of what question* regarding some fact or obtaining state-of-affairs. So, for example, one might ask the following question about a water molecule *w*:

Q1: Why or in virtue of what does *w* exist?

One might respond to Q1 in multiple ways, depending upon how she interprets it. Here are two possible explanations one might put forth in response to Q1:

E1: <*w* exists because a hydrogen atom and two oxygen atoms formed a covalent bond>

E2: <*w* exists because its hydrogen and oxygen atoms exist and conform to a tetrahedral shape with a bond angle of 104.5 degrees>

One who proffers E1 as an answer to Q1 is interpreting Q1 as seeking a causal explanation. In other words, she is interpreting Q1 along the lines of $Q1^{\alpha}$:

$Q1^{\alpha}$: 'What caused *w's existence*?

Contrastingly, one who proffers E2 as an answer to Q1 is interpreting Q1 as seeking a metaphysical explanation. In other words, she is interpreting Q1 as $Q1^{\beta}$:

$Q1^{\beta}$: 'What grounds *w's* existence?

To say that an explanation tracks a relation *R* is to say that: (i) *R* obtains in the world, and (ii) the explanation corresponds to a fact comprised of *R*. Thus, for example, E1 can be said to track with or correspond to a causal relation given that the following two conditions are met.

Condition 1: the event involving a covalent bond forming between a hydrogen atom and two oxygen atoms occurred, causing the event involving a water molecule coming into existence to occur.

Condition 2: the proposition put forth to explain why *w* exists corresponds to a fact composed of the event-event causal relation described in Condition 1.

Likewise, E2 can be said to track or correspond to a grounding relation given that the following two conditions are met.

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[52] The concept of 'tracking' is, perhaps, most associated with 'truth-tracking' theories of knowledge. As Roush explains, "There is a picture of knowledge in which the dominant metaphor for describing what knowledge is involves the simple notion of following. We know things when we follow them. We understand something when we can truthfully answer 'yes' to the question 'Do you follow?' I take it that simple, spatio-temporal following, as when we follow a crawling insect with our eyes, or a hunter follows the footprints of prey with steps of his own, is the paradigm image of what it is for someone to track something" (Roush, 2005 p.1). I do not, however, believe Bohn has in mind the epistemological notion of truth-tracking when he argues that explanations track with different relations. Rather, I think he has something along the lines of truth-making in mind. Where a true explanation tracks with or corresponds to a relation that obtains in the world.

Condition 3: *w* exists and the grounding relation between the existence of *w* and the existence and arrangement of *w's* atoms obtains.

Condition 4: the proposition put forth to explain why *w* exists corresponds to a fact composed of the grounding relation described in Condition 3.

Explanations like E2, that track grounding relations, are a type of metaphysical explanation.[53] Contrastingly, explanations like E1 that track causal relations are a type of naturalistic explanation. Scientists are exclusively concerned with naturalistic explanations, whereas, philosophers are often concerned with metaphysical explanations (Fine, 2012 p.40).

Much more can and will be said about the nature of explanations in the next section. For now, I have said enough to show how I take the concept of grounding to be related to the concept of metaphysical explanation. I hold that grounding relations are objective features of the world. I further maintain that a state-of-affairs can be composed of a grounding relation in the same way that it can be composed of entities like objects, properties, events, or causal relations. Consequentially, then, a metaphysical explanation is one that corresponds to a fact composed of a grounding relation.

Taking all this into consideration, therefore, we can interpret premise (2) of the eutaxiological argument as stating that if the universe is ordered there exists a *logos* such that it grounds (and, thus, metaphysically explains) its order. In other words, we can interpret (2) as affirming that there is, indeed, an answer to the following question, 'In virtue of what does the universe's order obtain?'. Ultimately, the answer *Stage One* provides to this question is vague; namely, it simply tells us that the universe's order obtains *because logos* grounds its order. It does not, however, tells us anything about the nature of *logos*. In Part 2, I will show that *logos* is identical to God, as conceived of by apophatic theism. At present, however, it is enough to have clarified what premise (2) is stating. Now that I have done so, I can show why it is more reasonable to believe (2) is true than false.

As I explained in the introduction to this chapter, most deductive arguments for the existence of God—e.g., the Kalām cosmological argument, or the Leibnizian argument from contingency, etc.—appeal to a universal metaphysical principle like the Principle of Causation (POC) or the Principle of Sufficient Reason (PSR). However, principles like POC and PSR are very controversial.[54] Considering this, I will grant, for the sake of argument, that POC and PSR are false.[55]

In the next section I will argue that, even if one grants that POC and PSR are false, when she encounters some unexplained fact, *F*, it is never reasonable to believe it is explanatorily brute. From this, I then argue it is more reasonable to believe premise (2) is true than false.

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[53] There are other candidates for metaphysical explanations apart from grounding, e.g., explanations that track general existential dependence relations and instantiation relations.

[54] To be clear, I am not claiming POC and PSR are false because they are controversial. Rather, I am merely noting that principles like POC and PSR are highly contentious metaphysical theses—this is especially true among Neo-Humean philosophers. Alexander Pruss (2006) dedicates Part III of his book *The Principle of Sufficient Reason: A Reassessment* to discussing numerous objections to PSR.

[55] In the interest of full disclosure, I believe some version of PSR is probably true. Nevertheless, I am sympathetic with my Neo-Humean brethren who find this hard to accept.

4.2. It is Never Reasonable to Believe a Fact is Explanatorily Brute

For any unexplained fact, *F*, at least one of three things may be true:

I. *F* has an explanation and it is epistemically *possible* for someone to come to know *F's* explanation

II. *F* has an explanation and it is epistemically *impossible* for someone to come to know *F's* explanation.

III. *F* does not have an explanation.

In this section I argue that, when faced with an unexplained fact, *F*, it may be reasonable to believe I or II is true; but it is *never* reasonable to believe III is true. In Sections 4.2.1. and 4.2.2., I provide a deeper analysis of the concept of an 'explanation'. Following this, in Section 4.2.3., I clarify what it means to say that a fact is unexplained. In Section 4.2.4. I build on these discussions and outline the difference between *epistemological* and *explanatory* bruteness. Having clarified my terms, I proceed to develop my argument that it is never reasonable to believe a fact is explanatorily brute. I begin, in Section 4.2.5. by outlining some conditions in which it is reasonable to believe I and II are true. I then ask the question, 'When, if ever, is it more reasonable to shift from believing I and II to believing III is true?'. In Section 4.2.6. I answer this question in the negative; namely, I show that it is never reasonable to believe III is true. I develop my argument through a critical examination of the strongest reasons one could put forth for believing III is true. I show that, at best, they only compel us to believe II is true; none of them, however, make it more reasonable to believe III is true.

4.2.1. Explanations

Let us return to the discussion about explanations I started in Section 4.1.1. Recall, first, that an explanation is merely an answer to a *why or in virtue of what question* like the following:

Q2: 'Why or in virtue of what does some fact, *F,* obtain?'[56]

Tentatively, we can define an explanation as follows:

Explanation: A proposition, *E,* is an explanation of some fact *F iff E* provides a positive answer to Q2.

Note that in order to count as an explanation *E* must provide a positive answer to Q2. One could, of course, respond to Q2 negatively by saying 'I don't know' or 'nothing explains why *F* obtains' but these are hardly explanations. To understand this better let's consider another example. Here is a paradigmatic example of a fact that requires an explanation regarding why it obtains:

F11: Barack Obama is the first African American president of the United States.

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[56] For the sake of convenience, I shift to talking about explanations purely in terms of facts in this section. One should not, however, read too much into this. I believe one coud rephrase my argument without using facts if she found them objetionable.

One might ask the following question: 'Why or in virtue of what does F11 obtain?'. Presumably, the person asking this does so because she is seeking to obtain knowledge regarding the circumstances involving presidential elections and the first African American being elected president. If one responded by saying 'I don't know why F11 obtains' or 'nothing explains why F11 obtains' then the agent asking the question hasn't come to know anything about the facts that explain why Barack Obama is the first African American president. This highlights an important point. Explanations are supposed to impart knowledge regarding why or in virtue of what some fact obtains. Hence, negative responses to Q2 do not count as explanations.

Let us consider an explanation one might put forth for why F11 obtains:

E3: < F11 obtains *because*: (i) in 2008 Barack Obama—an African American senator—secured 365 electoral college votes and nearly 53 percent of the popular vote, thus, winning the presidential election, and (ii) none of the previous presidents of the United States were African American.>

E3 brings out something I have implicitly assumed up until now; namely, that there can be multiple answers to any given question. In other words, one can appeal to more than one fact to explain some other fact; explanations can, thus, be many-one. In E3, the truth of (i), for example, only partially explains why F11 obtains. A complete explanation requires the truth of (ii) as well (and probably some other important facts that I've missed out). For simplicity sake, however, let us tentatively assume that E3 is a complete explanation. If E3 is a complete explanation, and one is justified in believing it is true, then one is said to know F11's explanation, i.e., to know *why* or in virtue of what F11 obtains.

I have outlined a general account of what I mean by an explanation. This account of explanations is, however, too coarse-grained. To properly develop the argument that it is never reasonable to believe III is true, I need to develop a more fine-grained account of explanations. It is to this that I will now turn my attention to.

4.2.2. A closer look at explanations

As I demonstrated in Section 4.1.1., there are multiple ways one can interpret Q2. Likewise, some (perhaps most) facts require multiple explanations regarding why they obtain if one is searching for a complete explanation. Furthermore, I have shown there are different types of explanations (e.g., naturalistic versus metaphysical) that correspond to the different ways one can interpret Q2. I want to elucidate this notion—i.e., the notion that there are different ways of interpreting Q2—a bit more. As was previously intimated, when one poses a question like Q2, she usually means something more specific like $Q2^{\alpha}$:

$Q2^{\alpha}$: 'What caused the fact that F obtains?

One who interprets Q2 as $Q2^{\alpha}$ is searching for a naturalistic answer to Q2. In other words, she expects a full or partial explanation to track with or contain the physical *events* or causes that brought about the fact that F obtains. To better understand this, consider, again, F11. Suppose that when I posed the question, 'Why or on account of what does F11 obtain?', what I had in mind was 'What caused or brought about the fact that F11 obtains?'. Given this, one

would expect that my answer to this question would include the events that brought about the fact that F11 obtains. Indeed, E3 reveals that I did take F11 to require a naturalistic explanation. For E3 includes the events that caused Obama to become president; namely, those involving Obama winning the electoral college and popular votes in the 2008 presidential election.

There is, as I have shown, another way one can interpret Q2; namely, Q2 can also be interpreted as $Q2^{\beta}$:

$Q2^{\beta}$: 'What grounds the fact that F obtains?'

When one interprets Q2 as $Q2^{\beta}$ she is seeking a metaphysical explanation. In this particular case, she expects a full or partial answer to track with or contain the ground of the fact that F obtains. So, returning to our example, when I posed the question, 'Why or on account of what does F11 obtain?', I also could have meant, 'What grounds the fact that F11 obtains?'. Once again, a closer look at E3 reveals that I did interpret it in this way. For E3 does not merely include the events that *caused* Obama to become the first African American president, but also properties that ground the fact that F11 obtains, e.g., that Obama bears the property 'being an African American' and that all previous presidents of the United States bear the property 'being Caucasian'.

There is, yet another way one could interpret Q2 that I have not mentioned yet. One could interpret Q2 as $Q2^{\gamma}$:

$Q2^{\gamma}$: 'For what end or purpose does F obtain?'

One who interprets Q2 as $Q2^{\gamma}$ is seeking a teleological explanation. Accordingly, she will expect a full or partial answer to include the reason, end, or purpose for which F obtains. It is, therefore, possible that in asking 'Why or on account of what does F11 obtain?', I could have meant, 'For what end or purpose does F11 obtain?'. Some theists maintain there is an objective answer to this question (even if we do not know what that answer is). Which is to say, God intentionally created a world that contains a universe in which F11 obtains for a specific reason. We may not know what that reason is, but there is one. An atheist, on the other hand, may be inclined to believe there is no objective reason, end, or purpose for which F11 obtains. The claim that F11 has an objective teleological explanation is, thus, controversial.

There are, however, uncontroversial examples in which questions of type $Q2^{\gamma}$ clearly do have a positive answer. Consider, fact F12:

F12: the set of wooden chairs in the auditorium, C, are arranged in rows of twenty, two inches apart, and all facing east.

If one were to ask, 'Why or for what end or purpose does F12 obtain?', it would be uncontroversial to assume there is an answer to this question. Indeed, one highly plausible explanation is that the chairs in set C are arranged in rows of twenty, two inches apart, and all facing east to provide the most optimal view of an upcoming talk. The reason to suppose there is an answer to 'Why or for what end or purpose does F12 obtain?' is because, on their own, ordinary wooden chairs do not have the power to arrange themselves into any pattern.

Rather, wooden chairs are typically arranged into seating patterns by intelligent agents; and, it is widely believed that agents act to achieve ends or goals (i.e., they act purposively).

I will pause here to remind the reader why I am going through such great pains to articulate some of the ways one might interpret Q2. As will become more apparent in a moment, I am doing this to formulate a more refined definition of an explanation. Doing so will, ultimately, help to clarify the difference between *epistemological* and *explanatory* bruteness that I develop in Section 4.2.4. This, in turn, will help me to argue for the conclusion that it is never reasonable to believe III is true of some unexplained fact *F*.

As should now be obvious, there are times in which one can provide an answer to one of Q2's iterations (e.g., Q2$^\beta$) but not another (e.g., Q2$^\gamma$). Let's return to the example of the hypothetical atheist above. She might argue that facts like F11 are objectively meaningless; namely, that facts like F11 don't obtain for any objective end or purpose. For an atheist who holds this view, there simply is *no* answer to the question 'For what end or purpose does F11 obtain?'. However, and this is very important, just because she believes there is no objective teleological explanation for F11, it doesn't follow that she believes there is no answer to the question 'Why or on account of what does F11 obtain?'. Indeed, our hypothetical atheist may believe E3 provides an adequate explanation regarding why F11 obtains; even though E3 does not include a teleological explanation. This highlights an important point. For a proposition to count as an explanation, it need not answer every possible iteration of Q2. As long as it provides a positive answer to, at least, one iteration of Q2 it counts as being an explanation.

Given all that I have just said regarding the different ways one might interpret Q2, we can refine our definition of an explanation as follows:

> Explanation*: A proposition, *E,* is an explanation of some fact *F iff E* provides a positive answer to at least one fine-grained interpretation of Q2 (e.g., Q2$^\alpha$, Q2$^\beta$, Q2$^\gamma$, …).

A brief disclaimer is now in order. I am sure I have not covered every possible way of interpreting questions of type Q2. My aim, however, was not to provide a complete account of every possible way one might understand Q2. Rather, my goal was merely to show that there are multiple ways in which one can interpret *why* questions and, hence, different ways of explaining why some unexplained fact, *F*, obtains. Let us, now, shift our attention to considering what it means to say that some fact, *F*, is unexplained.

4.2.3. Unexplained facts

On my account, to say that some fact, *F*, is *unexplained,* is merely to say that we currently do not know the answer to Q2, i.e., 'Why or on account of what does *F* obtain?'. More precisely, given 'Explanation*', it means that we don't know the answer to any possible interpretation of Q2 (e.g., Q2$^\alpha$, Q2$^\beta$, Q2$^\gamma$, etc.). Consider the following example. Suppose that an astrophysicist named Gertrude told you the following fact is an unexplained fact:

> F13: 'Roughly 68% of the universe is dark energy'

On my account, what Gertrude is claiming is that we do not know the answer to 'Why or in virtue of what F13 obtains?'—meaning we do not know the answer to *any* possible way one might interpret the question 'Why or in virtue of what does F13 obtain?'.[57]

For the sake of the example, I will stipulate, further, that Gertrude believes F13 is an unexplained fact because all the best explanations currently proposed are demonstrably false. I will also add that her belief that F13 is an unexplained fact is highly defeasible. Given some new arguments or information Gertrude may modify her belief that F13 is an unexplained fact. For example, suppose that in a year's time, and in light of new observations and testing, her distinguished colleague Johannes convinces her that his partial naturalistic explanation regarding why F13 obtains is true (for the sake of simplicity, let's call this hypothetical explanation E4). Given that Gertrude now believes E4 is true, and that she is justified or warranted in her belief, it would be proper to say that she has a partial explanation for why or in virtue of what F13 obtains. In which case, it would be improper for her to continue claiming that F13 is an unexplained fact. I say all of this to demonstrate that, on my account, an unexplained fact is not one that objectively lacks an explanation. Instead, to say that a given fact, *F*, is unexplained is ultimately to describe the epistemic state of some knowledge seeker(s). Specifically, it is to say that if a given knowledge seeker (or set of knowledge seekers), *S,* encounters some fact, *F*, and does not know the positive answer to Q2 (or any of its possible interpretations), then *S* will, rightly, take *F* to be an unexplained fact. However, *S* may change this belief if/when she comes to know the answer to Q2 (or, at least, one interpretation of Q2).

I must emphasize this last point. According to my account, it is no longer proper to designate *F* as being an unexplained fact if one comes to know the answer to one or more interpretations of Q2. It only takes coming to know the positive answer to one iteration of Q2 for a knowledge seeker, *S*, to say that she knows (or, at least, partially knows) why *F* obtains. Now that I have explained the unexplainable (Dad joke intended), I am finally in a position to explicate the distinction between *epistemological* bruteness versus *explanatory* bruteness. It is to this task that I now turn.

4.2.4. Epistemological versus explanatory bruteness

As I stated at the beginning of Section 4.2., whenever we encounter some unexplained fact, *F*, one of three things may be true. The first is that:

I. *F* has an explanation, and it is epistemically *possible* for someone to come to know *F's* explanation

If I is true, this entails there exists some fact—composed of some entities (e.g., objects, properties, relations, etc.)—that explains why or in virtue of what *F* obtains. Given enough time (and the removal of any obstacles that may currently be hindering us), we will eventually come to know the answer to Q2—or, rather, to one of the fine-grained iterations of Q2 like $Q2^{\alpha}$, $Q2^{\beta}$, $Q2^{\gamma}$, etc. Note that the moment one does come to know *F's* explanation, it is no longer correct to say that *F* is an unexplained fact. Now, let us consider option two:

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[57] I realise that physicists are entertaining various theories as to why F13 obtains and that, perhaps, one of these theories provides the best explanation. My point was not to argue that F13 is actually an unexplained fact. Rather, I'm simply using this as a hypothetical example to explain what it means for some fact to be unexplained.

II. *F* has an explanation, and it is epistemically *impossible* for someone to come to know *F's* explanation.

According to II, *F* has an explanation, but due to some insurmountable obstacle—e.g., some cognitive or nomological limitation—it is epistemically *impossible* to come to know what that explanation is. Hence, no amount of time will ever lead to someone coming to know *F's* explanation. So, like I, II maintains that *F* has an objective explanation that we currently do not know. In other words, there exists some fact—composed of some entities (e.g., objects, properties, relations, etc.)—that explains why or in virtue of what *F* obtains. Unlike I, however, II asserts that it is in principle impossible for us to come to know *F's* explanation.

To get your head around this let us return to the example of the astrophysicist Gertrude and fact F13. Let us begin by making another stipulation. Assume Gertrude is a proponent of scientism according to which science is the only reliable source of knowledge. Hence, the only type of explanations she will accept are naturalistic/scientific ones. In other words, she doesn't believe F13 has any other type of explanation (e.g., a metaphysical or teleological explanation) because such explanations are derived through non-naturalistic/scientific methods. In addition to this, let us suppose (hypothetically) that to explain why or in virtue of what F13 obtains she would have to build an observational device the size of a large galaxy.

In this scenario, Gertrude is faced with an insurmountable obstacle that is preventing her from coming to know why F13 obtains. She is cognitively hindered because, without the assistance of the galaxy-sized observational device, she is unable to come to know why F13 obtains. She is also nomologically hindered because it is physically impossible to construct a device the size of a large galaxy. In this hypothetical scenario, the *explanandum* (i.e., the fact that Roughly 68% of the universe is dark energy) has an *explanans*. Unfortunately, it is epistemically impossible to know what it is. Unlike I, II is concerned with facts that a knowledge seeker will never come to know the explanation for. Not because *F* lacks an objective explanation; but, rather, because there are insurmountable obstacles to coming to know *F's* explanation.

I and II are both concerned with *epistemically brute* facts. We can define *epistemological bruteness* as follows:

Epistemological bruteness: For any unexplained fact, *F*, *F* is epistemologically brute *iff F* has an objective explanation and some knowledge seeker (or set of seekers) *S* does not know *F's* explanation.[58]

Again, it is essential to emphasise that an epistemically brute fact has an explanation—i.e., there is a proposition that corresponds to a fact composed of some object, property, or relation, that makes it the case that *F* obtains. The only problem is, we currently do not know *F's* explanation (and, in some cases, we may never know).

I will now turn my attention to the contrasting concept of *explanatory* bruteness. Whenever we encounter some unexplained fact, *F*, it is also possible that III is true:

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[58] Some philosophers, notably Elanor Taylor (2018), do *not* consider facts with an explanation that is epistemically impossible to know, to be *epistemically brute*. Taylor claims that facts such as these are somewhere in between an epistemically and ontological brute fact. However, it is not clear to me what she means by this.

III. *F* does not have an explanation.

Explanatorily brute facts are facts that have *no* objective explanation. They remain permanently unexplained, not because we need more time or technology to explain them, or because it is epistemically impossible to explain them, but because such facts simply lack any explanation. To say they lack an explanation, is to say that there simply is no positive answer to any interpretation of Q2 (e.g., there is no answer to $Q2^{\alpha}$, $Q2^{\beta}$, $Q2^{\gamma}$, etc.). There simply is no fact—i.e., no collection of objects, or properties, or relations of any type—that we can point to that make it the case that *F* obtains. We can state this more precisely with the following definition:

> Explanatory bruteness: For any fact, *F*, *F* is explanatorily brute *iff F* has no objective explanation, i.e., there is no positive answer to at least one fine-grained interpretation of Q2 (e.g., $Q2^{\alpha}$, $Q2^{\beta}$, $Q2^{\gamma}$, …).

Now that I have clarified all my terms, I will argue for the conclusion that it is never reasonable to believe that an unexplained fact, *F*, is explanatorily brute. In other words, it is never reasonable to believe that III is true. I shall begin by outlining some reasons for believing I and II are true.

4.2.5. Some reasons for believing I and II are true

Initially, when faced with an unexplained fact, *F*, it is more reasonable to make the highly defeasible assumption that I is true. For if we initially presupposed II or III is true, we would not be motivated to seek out any scientific or philosophical explanation for *F*. In other words, if one always began by presupposing II or III is true, she would simply give up on seeking out explanations for unexplained facts. This would, effectively, undermine all scientific and philosophic inquiry. Pragmatically speaking, therefore, and barring any initial obvious reason for believing II or III is true, the most reasonable assumption for any knowledge seeker to hold initially is that I is true.

Eventually, however, after so many failed attempts to explain *F*, and after careful philosophical analysis, one might reasonably begin to question this initial assumption. In such cases one may have good reason for believing II is true rather than I. Let's consider, once more, the imaginary renowned astrophysicist Gertrude to illustrate this point. Recall that Gertrude is a proponent of *scientism*. According to scientism, science alone provides the only viable pathway to knowledge. This entails the only meaningful or important way of interpreting Q2 is one that interprets Q2 as seeking some type of naturalistic explanation (as, for example, $Q2^{\alpha}$ does). Assuming Gertrude has good reasons for adopting scientism, she would seem to be justified in her belief that the only viable type of explanation for why F13 obtains is a naturalistic one. Additionally, given the truth of scientism, Gertrude is right to believe that if F13 has a metaphysical, teleological, or other non-naturalistic explanation, it is epistemically impossible to come to know what any of these non-naturalistic explanations are. The reason being one cannot come to know non-naturalistic explanations by means of science.

I have now set up an example in which it would be reasonable for a knowledge seeker, *S*, to shift from believing I is true to believing II is true. When Gertrude initially encountered F13 she, rightly, assumed I was true—namely, that F13 had an explanation (in this case a naturalistic one) and that it was epistemically possible for her to come to know what it is. Her confidence in the truth of this assumption, however, soon began to weaken.

For, as I stipulated above, after extensive research, Gertrude came to believe that all the best naturalistic explanations for F13 are false. She later learned that in order to explain why or in virtue of what F13 obtains she would need to build an observational device the size of a large galaxy. In this scenario, as I explained, Gertrude faces insurmountable obstacles for coming to know F13's explanation. Given her scientism, the only type of explanations she can, in principle, come to know are ones that are derived from science. Unfortunately for Gertrude, the only scientific means to finding out why F13 obtains is to build a special device the size of a large galaxy (which is nomologically impossible). This hypothetical scenario shows that if certain conditions obtain it can be reasonable for a knowledge seeker to abandon her initial assumption that I is true and shift to believing II is true. In the imaginary scenario above, if we grant that Gertrude has good reason to embrace scientism, and if we grant the insurmountable cognitive and nomological obstacles described, we can agree that it is reasonable for her to believe F13 has an explanation but that it is epistemically impossible to come to know what it is.

The critical question facing us now is, 'When, if ever, is it more reasonable to shift from believing I or II is true to believing III is true?'. Put differently: 'When faced with some unexplained fact, *F*, is it ever more reasonable to believe III is true rather than I or II?'. Clearly, in the scenario above, it is reasonable for Gertrude to believe it is epistemically impossible to come to know F13's explanation. What would it take to make it more reasonable, however, for her to shift to believing the much stronger claim that F13 has no explanation? In what follows I will argue that, when faced with some unexplained fact, *F*, it is *never* reasonable to believe III is true rather than I or II.

Before I develop and defend my argument it is important to make a few clarificatory remarks. I want to stress, again, that I am *not* making an argument for PSR—roughly the thesis that for every fact that obtains there exists an explanation regarding why it obtains. I am merely arguing that, when faced with some unexplained fact, *F*, it is never reasonable to believe that *F* is explanatorily brute. In short, I am making an epistemological argument, not a metaphysical one. Some facts may be explanatorily brute. If my argument is sound, however, it is never reasonable to believe that some unexplained fact, *F*, is explanatorily brute.

With that clarification in mind, I will now proceed to outline and defend my argument. I will first consider the strongest reasons one might have for believing III is true (when faced with an unexplained fact, *F*). I then show that, on their own, none of these reasons make it more reasonable to believe III is true rather than I or II.

4.2.6. Reasons for believing III is true

In this section, I consider the most substantial reasons one might put forth for believing III is true. Following each reason, I provide a response which shows that, on the contrary, none of these reasons make it more reasonable to believe III is true (rather than I or II).

Reason One: We currently do not know *F's* explanation. When faced with some unexplained fact, *F*, one might argue it is reasonable to believe III is true if there is currently no adequate or compelling naturalistic/scientific or philosophical answer to Q2 (i.e., 'Why or on account of what does *F* obtain?). In this case, to say there is currently no adequate or compelling naturalistic/scientific or philosophical answer to Q2 is merely to say that the

explanations currently being offered face serious problems such that it is *not* more reasonable to believe they are true than false.

Response: On its own, the mere fact that we currently lack an adequate or compelling answer to Q2 is not enough to undercut our initial assumption that I is true. Unless we have reason to believe otherwise—like Gertrude's commitment to scientism and her discovery that she'd need to build a device the size of a galaxy to come to know F13's explanation—it is possible that given enough time (and the removal of any obstacles), we will eventually develop an adequate scientific or philosophical answer to Q2. Perhaps, for example, scientists simply need to develop some new (and unforeseen) technology that will enable us to explain why *F* obtains? Or, perhaps, in the next century, a philosophical genius will develop a compelling philosophical explanation for why *F* obtains? Indeed, given that scientists and philosophers have successfully developed (and continue to develop) compelling explanations for unexplained facts, it seems very reasonable to expect that, eventually, they will come to develop a compelling explanation for *F's* obtaining. If we should learn that it is not possible (due to some insurmountable obstacle) to come to know *F's* explanation, this would make it more reasonable to believe II is true than I. However, to shift from II to believing III is true, we would need some additional reason for believing that, unlike other unexplained facts, there is no answer to any iteration of Q2 and, thus, that there are no facts composed of entities that make it the case that *F* obtains.

Reason Two. There have already been a sufficient number of failed attempts by knowledge seekers to adequately explain why *F* obtains. One might argue that, when faced with an unexplained fact *F*, it would be more reasonable to believe III is true if there have been a sufficient number of failed attempts at producing an adequate or compelling explanation for *F*. Again, in this context, an adequate or compelling naturalistic/scientific or philosophical answer to Q2 is merely an explanation that is both coherent and in which we have good reason to believe is true.

Response. There is no non-arbitrary way to determine when there have been a sufficient number of failed attempts by knowledge seekers at explaining *F*. How many attempts at explaining *F* must a scientist or philosopher make before it is rational to believe that *F* has no explanation whatsoever? 100 attempts? 1,000 attempts? There is simply no objective way to determine when a sufficient number of failed attempts at explaining *F* have occurred.

The problem, however, is even more acute. Even if we grant, for the sake of argument, that there *is* a non-arbitrary way to determine when there have been a sufficient number of failed attempts at answering Q2, this does not give us the conclusion that III is true. It may provide us with reason to shift from believing I is true to believing II is true. For, example, one might argue the fact that knowledge seekers have utterly failed (after a sufficient number of attempts) to provide an adequate or compelling explanation for *F* is evidence that it is epistemically impossible to come to know *F's* explanation. We would still, however, need some further reason to shift from believing II is true to believing III is true.

On the other hand, one might argue that, *ceteris paribus*, *Reason Two* is compatible with both the truth of II and III. In which case, until we acquire further evidence for believing III is true (and not II), it would be more reasonable to withhold judgement. So, even if we grant that a sufficient number of failed attempts at explaining *F* have occurred, we will still

need an additional reason to justify believing III is true (rather than II). On its own, then, *Reason Two* does not compel us to believe III is true.

Reason Three: F falls outside of the domain of human inquiry. All the disciplines of science, philosophy, religion, subjective experience, and whatever else you'd like to include on this list, are incapable (in principle) of helping a knowledge seeker, *S*, come to know *F's* explanation. In other words, it is in principle impossible to answer Q2 (or any of its possible fine-grained iterations). One might argue that if *F* falls outside the domain of human inquiry, we have good reason for believing III is true.

Response: On the contrary, *Reason Three* is merely an argument for believing II is true. If *F* falls outside the domain of human inquiry, all that follows from this is that it is *epistemically impossible* to come to know the answer to Q2 (which is precisely what II states). One would need to make an additional argument to show that *F* has no explanation at all—i.e., that there exists no collection of objects, properties, relations, or whatever—that in some sense make it the case that *F* obtains. In other words, one would still need to make a further argument showing that *F* is not merely *epistemically brute* but that *F* is also *explanatorily brute* (as III states). Hence, while *Reason Three* may compel us to believe II is true, it does not make it more reasonable to believe III is true.

Reason Four: F is composed of an entity, *x*, that is well-founded, i.e., that is not grounded in anything more fundamental than itself. Suppose, hypothetically, one had a good reason for believing the following existence claim is true:

Hypothetical existence Claim: There exists an *x* such that *x* does not depend upon anything ontologically prior (i.e., more fundamental than) itself for its existence.

Let the unexplained fact, *F*, be the fact that the hypothetical existence claim obtains. One might argue that *F* is an explanatorily brute fact because it is a fact that consists of a fundamental (or well-founded) entity *x*. For, given that there is nothing ontologically prior to *x*, one might argue there can be no metaphysical explanation regarding why *F* obtains because *F* consists of an entity, *x*, that is ungrounded. As such, the chain of explanation stops with *x*.

Response: As I argue above, explanations that track grounding relations are only *one* type of metaphysical explanation. Metaphysical explanations may also correspond to existential dependence relations, or instantiation relations, or other similar kinds of metaphysical relations. For example, although *x* lacks a ground, it could be that *x* existentially depends on itself for its existence. Given that *x* existentially depends on itself for its existence, *x* would, indeed, have a metaphysical explanation—one that tracks with a non-grounding dependence relationship. Accordingly, on its own, *Reason Four* fails to establish *F* lacks a metaphysical explanation.

Perhaps, however, my initial response to *Reason Four* was too hasty? Let us suppose *Reason Four* compels us to believe *F* lacks a metaphysical explanation. What would follow from this? Not much. It certainly does not give us the conclusion that III is true. At best, it merely compels us to believe there is at least one interpretation of Q2 (namely, $Q2^\beta$) that has no answer. On its own, therefore, *Reason Four* doesn't compel us to believe all other possible interpretations of Q2 (i.e., $Q2^\alpha$, $Q1^\gamma$, etc.) lack an answer—which is what one would need to

do to establish that *F* is explanatorily brute. One would, thus, still need to provide further arguments showing there's no positive answer to any possible interpretation of Q2.

It is unlikely, however, that anyone could successfully make such an argument. Here's why. Suppose I successfully argued that *F* lacks an answer to $Q2^\alpha$, $Q2^\beta$, and $Q1^\gamma$? It is still possible that there is an answer to Q^δ or Q^ε and so on and so forth. The point being, unless we have some reason to believe otherwise, it is reasonable to assume there exists some unknown entity—i.e., some object, property, or relation—that we have not encountered which makes it the case that facts like *F* obtain. Call this entity *z*. Perhaps, given enough time (and the removal of any obstacles that may currently be hindering us), we will eventually discover *z* and, thus, come to know why *F* obtains? In other words, even if we provide compelling arguments that *F* lacks an answer to $Q2^\alpha$, $Q2^\beta$, and $Q1^\gamma$, it would still be reasonable to assume I is true and to continue our search for an explanation for why *F* obtains. Should we eventually discover that it is in principle impossible to come to know why *F* obtains this would, indeed, undercut our assumption that I is true and compel us to believe II is true. It would, not, however, make it more reasonable to believe III is true. As such, *Reason Four* neither undercuts one's belief that I or II is true nor provides justification for coming to believe the truth of III.

Reason Five: *F* being an explanatorily brute fact is part of a general metaphysical theory with strong abductive support (Taylor, 2018 pp.41-42). Suppose, for example, that some general metaphysical theory N includes the truth of the proposition '*F* is an explanatorily brute fact'. Further suppose that, through a process of abductive reasoning, we are compelled to believe N is true because it is the best general metaphysical theory available to us. Since, one can argue, we have good reason to believe N is true, we also have good reason to believe III is true because III is part of N.

Response: *Reason Five* seems compelling until one asks the following question: 'Why does N take III to be true?'. One might respond that N takes III to be true because there is currently no adequate naturalistic/scientific or philosophical explanation for *F*? In which case she is ultimately arguing that III to is true based on *Reason One*. We have already shown, however, that *Reason One* does not support the truth of III. Alternatively, one might maintain N takes III to be true because there have been a sufficient number of failed attempts by knowledge seekers to adequately explain why *F* obtains? In which case, she is ultimately arguing that N takes III to be true based on *Reason Two.* Unfortunately, this doesn't work either—for we have shown above that *Reason Two* does not make it more reasonable to believe III is true (rather than I or II).

To this, one might respond N takes III to be true because, according to N, *F* falls outside of the domain of human inquiry. Ultimately, however, this is an attempt to justify believing III on the basis of *Reason Three*; which is problematic because we have shown that *Reason Three* does not make it more reasonable to believe III is true. On the other hand, one might respond that N takes III to be true because, according to N, *F* is composed of an entity, *x*, that is well-founded. This, too, is problematic because it is merely to advocate *Reason Four.* We have already shown, however, that *Reason Four* does not make it more reasonable to believe III is true (rather than I or II). As a last resort, one might respond that N simply stipulates that *F* is explanatorily brute (and, thus, assumes that III is true). Such a response, however, is not very helpful. Simply stipulating that some proposition, *p*, is true does not make it more reasonable to believe *p* is true. Surely, stipulating that N takes III to be true does not make it more reasonable to believe III is true (even if we think N is the best metaphysical theory in town). In this case, it seems more reasonable to believe N is true with

one caveat—that we drop the assumption that III is true (because it isn't clear that N entails III is true).

In summary, a closer look at *Reason Five* reveals it is not as compelling as it might initially seem. If N takes *F* to be explanatorily brute based on *Reasons One –Four*, this is problematic because we have already shown that they do not make it more reasonable to believe III is true. In which case, *Reason Five* does not make it more reasonable to believe III is true. Conversely, if N merely stipulates that *F* is explanatorily brute (without providing any reasons for why this is the case), this also fails to make it more reasonable to believe III is true. For, simply stipulating that III is true does not make it the case that III is actually true; neither does it make it more reasonable to believe III is true. Furthermore, it just does not seem that the truth of III is a necessary feature of N. It seems that one can believe in N and also believe, say, that II is true. Since there does not appear to be any compelling reasons why N entails III is true, the acceptance of N does not seem to warrant a belief that III is true after all. On its own, therefore, *Reason Five* does not make it more reasonable to believe III is true.

Given that there simply is no good reason to believe III is true and that any reason one might proffer is consistent with either I or II being true, it follows that, when faced with some unexplained fact, *F*, it is never more reasonable to believe *F* is an explanatorily brute fact.

4.3. The universe has a ground of its order

In 4.1 I expounded on the notion of ground and on the notion of a metaphysical explanation. In 4.2., I explored the concept of explanations even further and argued that it is never reasonable to believe a given unexplained fact, *F*, is explanatorily brute. I will now build on this work to develop a sub-argument in support of the truth of premise (2) of the eutaxiological argument, i.e., the proposition that 'If the universe is ordered, it has a ground of its order'.

To begin with, let us remember that the *explanandum* the eutaxiological argument is concerned with is the fact that the universe is ordered. More specifically, it is concerned with the following equivalent fact:

F14: The total collection of all physical entities exemplifies quantifiable relations conforming to ordering principles.

Accordingly, the eutaxiological argument is ultimately concerned with answering the following question:

Q4: 'Why or in virtue of what does the universe's order obtain?'

Given the argument I developed in 4.2., it is unreasonable to believe that this question lacks an answer. Meaning, it is unreasonable to believe that the fact that the universe is ordered is an explanatorily brute fact. Hence, the most reasonable position to take is that there is, indeed, an objective answer to Q4 (even if one, currently, does not know what the answer is or may never know). This is a significant point because a critic of the eutaxiological argument—taking her cue from Bertrand Russel—may be tempted to argue that premise (2) is false because the fact that the universe is ordered is an explanatorily brute fact.[59]

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[59] In a famous BBC radio debate, Bertrand Russel proffered just such a objection in response to Fr. Copleston's argument for theism—see Russell (1986, originally 1948) for a transcript of this debate. As Oppy and Trakakis (2013 pp. 301-2) have shown, Russell's arguments have had a tremendous influence on contemporary critiques of theism.

Fortunately, as I have gone through great lengths to show, this kind of ham-handed objection to the eutaxiological argument ultimately fails because it is never more reasonable for a knowledge seeker, *S*, to believe a given unexplained fact of her experience is explanatorily brute. Ergo, it is not reasonable for one to believe F14 is explanatorily brute.

Furthermore, it is not reasonable to think F14 has a scientific explanation. In Chapter 2, I proffered responses to both the God-of-the-Gaps Objection (GOGO) and the Multiverse Objection (MO). In proffering my responses to GOGO and MO, I noted that the *explanandum* the eutaxiologial argument is concerned with is not the type of phenomena that science is aimed at explaining. I showed that science is aimed at explaining highly specific empirically-based theory-laden facts about the way the physical universe is actually ordered. But F14 is *not* a highly specific empirically-based theory-laden fact about the way the physical universe is actually ordered. On the contrary, it is a general metaphysical fact about the nature of the universe; one that is compatible with numerous discrete metaphysical theses and with various discrete scientific theories. Accordingly, it is not the type of fact that science is aimed at proffering an explanation of. It is, rather, the type of fact that a metaphysician is aimed at explaining; and, thus, the type of fact that requires a metaphysical explanation that tracks with a grounding relation.

There is, however, more to be said. Scientific explanations track with quantifiable relations conforming to ordering principles, i.e., they track with the order exemplified by physical entities in the universe. For example, if you ask a scientist to explain what causes the ocean's tides, her explanation will correspond to a fact composed of the moon, and the earth standing in a quantifiable relationship conforming to an ordering principle that can be described mathematically in terms of the laws of gravity.

Likewise, when a scientist proffers a scientific explanation regarding what caused the formation of our solar system, she will point to the events immediately preceding and leading up to the solar system's current physical state. So, for example, she might point to the explosion of a supernova that disturbed a cloud of gas, which led to the formation of a super nebula, which began to rotate and draw particles together which would eventually develop into our sun and the planets that orbit it. Importantly, these events are composed of physical-ordered entities—e.g., clouds of gas, a super nebula, particles, the sun, planets—that stand in quantifiable relationships conforming to ordering principles.

Consider one final example. When a geologist encounters rocks on the beach which are composed of regular, repeated layers of sediment, and have specific sizes and shapes, she can proffer a scientific explanation for this phenomenon. In developing her explanation, she will likely point to harsh winds, rushing water, extreme pressure, and other similar geological events to help us understand why the rocks on the beach exemplify the order that they presently do. These events that the geologist might point to explain the sedimentation of the rocks, are composed of physical-ordered entities standing in quantifiable relations conforming to ordering principles. I could proliferate examples like this, from every scientific discipline, *ad nauseum*. I think, however, these are enough to get the point across.

What these examples show is that scientific explanations track with or correspond to the order that obtains in the universe. From this it follows that, if physical entities were not ordered, one could not scientifically explain them. In other words, it is because F14 obtains that science is even possible. Given this, it is simply incoherent to assert that one can proffer

a scientific explanation for F14. Scientific explanations depend upon F14 having obtained and, therefore, there cannot be any scientific explanations prior to F14 obtaining.

Another way to argue for this conclusion is as follows. One cannot point to a physical entity ontologically prior to the universe's order, to explain why or in virtue of what the universe is ordered. This would be equivalent to claiming that there exists a numerically distinct physical entity ontologically prior to, and thus more fundamental than, the total collection of all physical entities (which is absurd). Given this, it follows that there are no physical-ordered entities prior to the universe that a scientific explanation could track with. The unavoidable conclusion is that the explanation for why or in virtue of what the universe is ordered must be a metaphysical explanation and, not, a scientific one.

Conclusion

In this chapter, I clarified and provided supporting arguments for the truth of premise (2). I began in Section 4.1. by explaining the concept of grounding and the closely related notion of metaphysical explanation that play such a crucial role in the eutaxiological argument. Following this, in Section 4.2., I developed a novel defence of premise (2). Unlike many proponents of teleological and cosmological arguments, I did not defend a version of the Principle of Causality (POC) or the Principle of Sufficient Reason (PSR) to show that premise (2) was true. Instead, I granted, for the sake of argument, that there may be some *explanatorily brute* facts; and, thus, that principles like POC and PSR are false.

I then argued that whenever one encounters an unexplained fact, *F*, it is never reasonable to believe *F* is *explanatorily brute*. From this, I further argued in Section 4.3. that it is unreasonable to believe the fact that the universe is ordered is an explanatorily brute fact. Hence, there must be some explanation for why or in virtue of what the universe is ordered. Importantly, I argued that it could not, in principle, be a scientific explanation but, rather, must be a metaphysical explanation that tracks with a grounding relation.

Given all that I have argued in this chapter, I believe it far more reasonable to believe premise (2) of the eutaxiological argument is true than false. In which case, we have good reason to accept the conclusion of *Stage One*; namely, that <The universe has a ground of its order>. If the conclusion of Stage One is true, then the following existence claim obtains:

> Stage One Existence Claim: there exists a *logos, L,* such that the universe's order is grounded in *L*.

Ceteris paribus, the Stage One Existence Claim is rather modest. It does not, for example, explicitly tell us anything about the entity—what I refer to as *logos*—that grounds the universe's order. In Part 2 I contend there is a lot we can say about *logos*. Specifically, I develop arguments which show that *logos* is identical to the God of apophatic theism.

Part 2

The Eutaxiological Argument: Stage Two

II. Introduction

Part 2 focuses on *Stage Two* of the eutaxiological argument. *Stage Two* is the identification stage, in which I develop arguments that show *logos* is numerically identical to the God of apophatic theism. I do this by demonstrating *logos* possesses all the attributes outlined by ATS. Recall that ATS states the following:

> Apophatic theism *simpliciter* (ATS): there exists a unique *logos or Mind*, *L*, such that: *(i) L* is simple, (ii) *L* is ontologically distinct from the universe, (iii) the universe's order and existence is fundamentally grounded in *L* from nothing, and *(*iv*), L* is ineffable.

In Chapter 5, I utilise many of the metaphysical principles I defended in Chapter 3. I begin by proffering arguments that show *logos* is analogous to an intelligence or Mind. The first argument I explicate is based on a type-B intelligence indicator. I argue that the fact that all physical entities conform to ordering principles indicates that a full or partial explanation for the existence of the total collection of all physical entities will track with an intelligence or mind. I also argue that the contingency of the universe's order indicates that *logos* is Mind. Additionally, I construct a coherent model of what the relationship between *logos* and the universe's order may be like. Building on these discussions, I then shift to arguing that if *logos* is the ground of the universe's order, it is simultaneously the ground of the universe's existence from nothing. In making this argument, I develop and utilise the concept of essential order.

In Chatper 6, I argue that *logos* is both ontologically distinct and fundamental. In saying that *logos* is 'ontologically distinct' I mean it is neither part of nor numerically identical to the universe and that the universe is not a part of *logos*. In so arguing, I eliminate the possibility that *logos* could be identified with pantheistic or panentheistic conceptions of God. In saying that *logos* is 'fundamental', I mean that it does not depend on anything ontologically prior to or more fundamental than itself for its existence. My argument for the fundamentality of *logos* is unique. Unlike contemporary arguments for a fundamental level of physical existence, my argument for the fundamentality of *logos* is not based on the concept of well-foundedness. In fact, my argument is compatible with there being no fundamental level of the physicalist universe.

The final two chapters focus on developing a coherent account of ineffability. In Chapter 7, I start with a brief overview of the contemporary conception of ineffability, which I refer to as *metaphysical ineffability*. According to this view, God has no properties and, thus, nothing can be predicated of him. I then show that this thesis faces formidable objections and that contemporary philosophers of religion have severely criticised this view. Before expounding on my view of ineffability—which is inspired by the Eastern Christian tradition—I analyse two contemporary attempts at defending divine ineffability. Having shown that these attemps are, ultimately, incoherent, I then proffer my own view which I label *epistemic ineffability*. According to this view, it is epistemically impossible to know *logos's* essence (i.e., to know what kind of entity *logos* is). I conclude by proffering an argument that demonstrates the ineffability of *logos* which utilises the concept of essential order I introduced in Chapter 5.

In Chapter 8, I address the perception that apophatic theism is incompatible with Christian dogmatic theology. I can state the problem as follows. It seems that all Christian traditions affirm we can know many of God essential properties. Yet apophatic theism asserts that it is epistemically impossible to know *logos's* (i.e., God's) essence. It seems, therefore, that a Christian apophatic theist would be committed to the following logical contradiction:

P12: It is both possible and impossible to know *logos's* essence.

To respond to this objection, I develop a model of Christian apophatic theism inspired by the Greek Patristic tradition and, especially, the work of St Gregory Palamas. My model is based on two critical metaphysical distinctions. The first distinction is between an entity's *essence* (i.e., what kind of thing it is) and its properties. I derive this distinction from the traditional conception of essentialism known in the contemporary literature as *real essentialism*. However, I develop an original version of real essentialism based upon the concept of essential order. The second key distinction is a distinction between an entity's *essence* and its *energies* (i.e., its characteristic activities). Utilising these metaphysical distinctions, I show that Christian apophatic theists are not necessarily committed to P12, and that ATS is compatible with Christian theology.

Chapter 5: Logos, Mind, and Creatio ex Nihilo

In Part I, I established that there exists a *logos* such that it grounds the universe's order. In this chapter, I progress the argument in several important ways. To begin with, I proffer arguments that show *logos* is analogous to an intelligent agency or Mind. Following this, I go on to argue that: if *logos* is the ground of the universe's order, *logos* is simultaneously the ground of the universe's existence from nothing, i.e., the thesis historically referred to as *creatio ex nihilo*.

In Section 5.1., I explicate several arguments that show *logos* is analogous to an intelligent agency or Mind. The first argument utilises the concept of a type-B intelligence indicator. I contend that the fact that all physical entities conform to ordering principles indicates that a full or partial explanation for the existence of the total collection of all physical entities will track with an intelligence or Mind. Second, I argue that the contingency of the universe's order also further indicates that *logos* is a mind. Building on this discussion, I construct a coherent model of what the relationship between *logos*, as Mind, and the universe's order may be like. In Section 5.2., I shift my focus to expounding on the tight connection between order and physical existence. Specifically, I develop the concept of *essential order*. From this, I argue that when an entity, *x*, grounds a physical entity, *y's*, essential order, *x* simultaneously grounds *y's* existence. I conclude, in Section 5.3., by drawing on the arguments defended in the previous sections to argue that if *logos* is the ground of the universe's essential order, it is simultaneously the ground of the universe's existence from nothing.

5.1. Logos as Mind

In this section, I show that there is good reason to believe *logos* is analogous to an intelligence or Mind. There are, in fact, two primary reasons for believing this. The first reason is based upon the concept of a type-B intelligence indicator. More specifically, it is based on the notion that when a fact of our experience tracks with an entity that is conformed to an ordering principle, this indicates that an intelligent agency or mind either fully or partially explains why this fact obtains. The second reason points to the fact that the quantifiable relations conforming to ordering principles that hold between physical entities are contingent. They are contingent because the universe could have been conformed to numerous, perhaps an infinite, number of different types of ordering principles. Let us, first, consider the type-B intelligence indicator at play here.

5.1.1. Ordering Principles as Indicators of Intelligence

Recall that in Chapter 1, I explained that the eutaxiological argument (unlike its teleological counterparts) is concerned with a type-B intelligence indicator. A type-B intelligence indicator is a marker that, when present, suggests an intelligent agency or mind either fully or partially explains a fact of our experience. We can define this more formally as follows:

> Type-B Intelligence Indicator: Whenever an entity, *x*, conforms to an ordering principle, this *indicates* that an intelligent agency or mind either fully or partially explains *x*.

Typ-B intelligence indicators warrant a belief that intelligence is needed to explain some fact because only intelligent agents have the natural power to conceive of and ground the existence of an ordering principle. To see that this is true, first, recall the definition of an ordering principle I outlined in Chapter 3:

> Ordering principle: An *exemplar* or *plan* that specifies the way in which a given collection of entities, E, relate to each other by describing an explicit, non-empty, finite, and complete set of requirements {R1, …, Rn} to be satisfied by the elements of E.

One does not find mind-independent exemplars or plans "free-floating" in the world. On the contrary, our shared consistent experience of reality confirms that ordering principles are ontologically dependent upon the minds which conceive of them. Experience also teaches us that entities like stars, planets, clouds, oceans, mountains, rocks, trees, molecules, atoms, and quarks, do *not* produce ordering principles; but, rather, intelligent agencies with minds capable of engaging in complex thought, like human beings, do. I want to be careful, here, to clarify a possible point of confusion. The power to conceive of an ordering principle is not the same as the property 'being conscious'. A panpsychist, for example, maintains that all physical entities—including entities like stars, planets, rocks, and trees, etc.—are, in some sense, conscious.[60] When I say that entities like stars and rocks do not produce ordering principles, I do not necessarily deny they are, in some sense, conscious. They may very well bear some minimal level of consciousness as the panpsychist claims. What I am saying, rather, is that they are *not* intelligent agencies with minds capable of complex thought. Only intelligent agencies have the power to engage in complex thinking and, thus, to produce ordering principles.

All of this is to say, the fact that the universe is ordered—i.e., the fact that each member of the total collection of physical entities exemplifies quantifiable relations conforming to ordering principles—indicates that a complete explanation regarding why or in virtue of what the universe is ordered must involve the activity of something analogous to an intelligence or mind. I say 'analogous' because, whatever intelligence grounds the ordering principles that physical entities conform to is, clearly, not of the same kind as the intelligences we are familiar with through every-day experience, e.g., human beings or artificial intelligences.[61]

Before exploring how this constitutes evidence that *logos* is analogous to an intelligence or mind, I will pause here and shift my focus onto the contingency of the universe's order. After expounding on this, I will tie these two discussions together to make my argument.

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[60] For recent work on panpsychism see Chalmers (2013), and the edited volume Bruntrop & Jaskolla (2017).

[61] Other notable philosophers who have recently argued that the universe is grounded in an intelligence or mind include Leslie (2001), Johnston (2009), and Buckareff (2019). While there are many aspects of their explication of the divine mind that are similar to or amenable to what I argue for in this chapter, there are significant differences as well. One important one being that, unlike Leslie and Buckareff, who proffer *pantheistic* conceptions of the divine mind, and Johnston, who defends a *panentheistic* conception of the divine mind, the eutaxiological argument argues that *logos* is ontologically distinct from the universe (see Chapter 6).

5.1.2. The Contingency of the Universe's Order

As I argued in Chapter 3, if one embraces the *order-based* conception of the physical she is committed to the thesis that it is metaphysically impossible for the physicalist universe to exist and for its members to be completely disordered. The reason being, according to the *order-based* conception of the physical, an entity is physical just in case it is ordered, i.e., just in case it conforms to a quantifiable relationship(s) conforming to an ordering principle(s). So, given that the universe is the total collection of physical entities, it follows necessarily that the universe is ordered. I formalised this reasoning in my development of the *Argument for the Metaphysical Necessity of an Orderly Universe* (AMNOU).

I also explained that although the *order-based* conception entails the proposition <The universe is ordered> is necessarily true, it does not entail a form of *necessitarianism* is true. As I demonstrated, there are numerous (perhaps infinite) different sets of ordering principles the universe might have instantiated. Hence, the order that obtains in the actual world does not, necessarily, obtain in every possible world. There are possible worlds containing universes that conform to different ordering principles. To make this clearer, I stipulated that the actual universe conforms to the set of ordering principles I_1—where 'I_1' merely signifies the set of ordering principles that the universe's members objectively conform to. While it is true that, necessarily, the universe is ordered, it is, nevertheless, possible that the universe could have conformed to different sets of ordering principles, e.g., I_2, I_3, or I_4. Therefore, I concluded it is correct to say "necessarily, the universe is ordered" but incorrect to say "necessarily, the universe is ordered per I_1". The upshot of this is that it is a contingent fact that the universe is ordered the way it is.

Either the activity of a mind explains the fact that the universe's members conform to I_1, or not. If not, one cannot explain why the universe is conformed to I_1 rather than some other set of ordering principles, e.g., I_2, I_3, or I_4. The reason being entities that lack intelligence lack the power to choose between one set of ordering principles over another. To be clear, this is not to say that all intelligences are capable of choosing between one thing or another. It is, however, to say that, in principle, intelligent agencies are the kind of entities that have the natural power to deliberate and to act volitionally.

I believe the above statement is relatively uncontroversial. A hard determinist who held that intelligent agents do *not* have the power to deliberate or choose one course of action over another, may disagree. But this is a metaphysical debate that has far-reaching implications and is, not, a unique problem facing the eutaxiological argument. As with other general philosophical problems touched on in Part 1—e.g., the problem of scientific anti-realism—it is far beyond the scope of this chapter to develop a full-blown response to hard determinism. Suffice it to say; there are strong and persuasive defences of both *compatibilist* and *incompatibilist* conceptions of free will out there.[62]

Notwithstanding the challenge of hard determinism, it is almost incontestable that unintelligent entities like electromagnetic fields or rocks or trees are incapable of deliberation and of choosing to realise one set of ordering principles versus another. Conversely, an

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[62] For a fantastic edited volume on contemporary perspectives on free will see Buckareff, Moya, & Rosell (2015). For a canonical defence of compatibilism see Fischer and Ravizza (1998). For a collection of essays exclusively concerned with incompatibilist or libertarian accounts of free will see Clarke (2003).

intelligent agency seems to be precisely the type of entity capable of making such a choice and, arguably, intelligent agents (like human beings) engage in the act of making such choices all the time.

Suppose, however, one is unwilling to accept the conclusion that intelligence played a role in realising the universe's order? Well, such a person is then committed to the thesis that some unintelligent, mindless, automatic, process realised the universe's order. If, indeed, this is correct, I cannot see how to avoid *necessitarianism*? Which is to say, it seems one must accept that the way the universe is actually ordered is the only possible way it could have been ordered.

This view, however, just seems straightforwardly false. It is easy to conceive of possible worlds that contain physical entities that conform to different sets of ordering principles than those which are realised in the actual world. I can, for example, conceive of a possible world in which pigs possess wings and fly or in which the force of gravity is weaker than in the actual world, or in which clouds are composed of bubble-gum flavoured ice cream, etc.

Given, then, that necessitarianism is false, and it is a contingent fact that the universe conforms to the set of ordering principles I_1, the most reasonable conclusion to make is that a complete explanation for this fact will track with an entity that has the power of deliberation and the power to realise one set of ordering principles over others. Put succinctly, it is most reasonable to commit oneself to the thesis that the universe's order was (or is being) realised by something like an intelligent agency or mind.

5.1.3. Conceiving and Willing the Universe's Order

Both the argument developed in Section 5.1.1. and that developed in Section 5.1.2., provide good reasons for believing *logos* is analogous to an intelligence. To keep track of everything that was said, I will summarise the arguments proffered so far. In Section 5.1.1., I showed that the fact that physical entities conform to an ordering principle indicates they are in some sense the product of intelligence. Ergo, the universe—taken to be the total collection of all physical entities—can only be fully explained by the activity of a Mind. For only minds have the power to conceive of and, thus, ground ordering principles. In Section 5.1.2, I argued that only something analogous to an intelligent agency has the power to deliberate between different sets of ordering principles and to choose to realise one set of ordering principles, I_1, rather than some other set (e.g., I_2, or I_3). These arguments, constitute a cumulative case for the thesis that the universe's order either fully or partially depends for its existence upon the activities of something like an intelligence.

It would violate the principle of parsimony, however, to assert that there is some other intelligence (distinct from *logos*) that partially grounds the universe's order. Meaning, anyone who supposes that, in addition to *logos*, there is a mind (or minds) that, jointly, explain the universe's order, is unnecessarily proliferating entities. On the contrary, it is more reasonable to suppose that as the ground of the universe's order, *logos* is engaging in activities like that of a Mind. Which is to say, it is *logos* that conceives of and, thus, grounds the ordering principles that physical entities conform to; and it is logos that wills that the set of ordering principles I_1 is realised in the actual world, rather than other logically possible sets of ordering principles.

I anticipate that some readers will react to this line of argument by pointing out that it seems to entail *logos* is a person. If this is true, however, then it seems that apophatic theism is actually no different from theistic personalism. As Alvin Plantinga, perhaps, the foremost defender of theistic personalism explains:

> Classical Christian belief includes, in the first place, the belief that there is such a person as God. God is a *person*: that is, a being with intellect and will. A person has (or can have) knowledge and belief, but also affections, loves, and hates; a person, furthermore, also has or can have intentions, and can act so as to fulfill them. God has all of these qualities and has some (knowledge, power, and love, for example) to the maximal degree. God is thus all-knowing and all-powerful; he is also perfectly good and wholly loving (Plantinga, 2000 p.vii).

I do not, however, believe the arguments I have just defended, which entail *logos* is a Mind, truly undermine the distinction between apophatic theism and theistic personalism.

It is clear from the passage above, and elsewhere (Cf., Ibid., pp.4-5), that Plantinga is treating the term 'person' as a *univocal* term. According to Plantinga, when we say that God is a person, we use this term in exactly the same sense as we do when we say that a human being is a person. Like human beings, God has an intellect and a will, and emotions, possesses knowledge, has intentions, etc. The only difference between God, and a human person, thinks Plantinga, is a difference in degree. Human persons possess personal properties to a minimal degree; God, on the other hand, possesses personal properties to a maximal degree. Unlike human persons, who only possess a minimal amount of knowledge, God possesses *all* knowledge.

Apophatic theists, however, reject this way of thinking about divinity. They maintain that God is not a person, in the sense that Plantinga and other theistic personalists do. Note that as I developed the arguments that entail *logos* is intellect or Mind, I was careful to state that *logos* is only analogous to an intellect or Mind. As I will argue in Chapter 6, apophatic theists believe *logos* is not simply different from human persons in degree, but in *kind*. More specifically, *logos*, is ontologically distinct from the universe—it is not a physical-ordered entity. It does not possess a body. It is completely different in kind from any member of the total collection of all physical entities. So, when I say that *logos* engages in activities like conceiving of ordering principles or willing that one set of ordering principles be realised rather than some other set, I am using these terms analogously and not univocally. While there is a sense in which *logos* is engaging in similar activities as human persons, the way in which *logos* engages in its characteristic activities is qualitatively different from how a human person does, given that they do not share the same nature.

One may also find the arguments I have made problematic because many common examples of ground seem to involve static relationships, e.g., the relation that obtains between a concrete entity and a set, or between a proposition and a fact. One may, therefore, question whether it is coherent to talk of an activity grounding some object, property, or relation. This concern, however, is unwarranted. Grounding, as I argued in Chapter 4, is a broad term, a *genus* of relations, that encompasses a variety of different *relata*. There are numerous additional examples of ground one could cite in which an entity's existence is grounded in the *activity* of some numerically distinct entity. For example, when water molecules engage in the act of dissolving salt (and other substances) this grounds the dispositional property 'being a universal solvent' that water possesses. When Bruce Springsteen engages in the act of singing and song-writing, this grounds the property 'being a singer-song-writer' that he possesses.

When I engage in the act of thinking, this grounds the existence of my thoughts. A concrete instance of the Jazz Dance is grounded in a performance of the Jazz Dance. One could go on and on proliferating examples such as these.

Given that there are numerous coherent examples of grounding relations involving some activity, x, grounding the existence of some object, property, or relation y, it seems to me that the proposal above is on solid ground (pun intended). Let us, however, flesh out the claim above with a bit more detail. The claim amounts to two things. First, that the activities of *logos* ground the set of all logically possible ordering principles, I; second, that the activities of *logos* ground a concrete instance or token of a sub-set of these principles I_1. We can make this proposal even clearer using models L^1 and L^2 (where '$\rightarrow$' represents the grounding relation):

L^1: {*logos* $\rightarrow$ the *act* of conceiving all logically possible ordering principles $\rightarrow$ the set, I, of all logically possible ordering principles $\rightarrow$ sub-sets of I (i.e., I_1, I_2, … I_n)}

L^2: {*logos* $\rightarrow$ the *act* of willing that I_1 obtains $\rightarrow$ a concrete instance or token of I_1 (i.e., the order exemplified by the universe)}

Of the examples of grounding I proliferated above, the one most analogous to the type of grounding relation modelled in L^1 is that which obtains between a mind's act of thinking and its thoughts or that of a dreamer dreaming and her dreams. Similarly, *logos* engages in the act of conceiving all logically possible ordering principles, and this act grounds the set, I, of all logically possible ordering principles.[63] Conversely, the example of grounding that is most analogous to the type of grounding relation modelled in L^2 is the performative ground. Recall that a performative ground obtains when the *activity* of an agent (namely, the act of performing some dance or musical piece) grounds a particular concrete instance of a dance or musical composition. As when, for example, a dancer's performance of the Jazz Walk grounds a concrete instance or token of the Jazz Walk in the world. Or when a pianist performing Beethoven's piano concerto no 4 grounds a particular concrete instance or token of Beethoven's piano concerto no 4.

One can think of *logos's* relation to the universe's order as being analogous to a performative ground. Only instead of engaging in the act of performing a type of dance or

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[63] Bohn (2019) makes a similar proposal suggesting that one way to solve the alleged problem of God and abstract objects is to argue that God grounds the existence of abstract objects.

musical composition, *logos* engages in the act of *willing* that a set of ordering principles I_1 is realised in the world; and, instead of grounding a particular concrete instance or token of some dance or musical composition, *logos's* willing grounds a particular concrete instance of I_1 (namely, the order exemplified by the universe). Just as a concrete instance or token of Beethoven's piano concerto no 4 would cease to exist if the pianist stopped performing it, so would the concrete instance or token of the set of ordering principles I_1 (i.e., the order exemplified by the universe) cease to be realised in the world if *logos* stopped willing it to be realised.

In summary, given the nature of ordering principles—i.e., that they are the type of entities that depend for their existence on some intellect or mind—and given that only an intellect or mind could *will* that one set of ordering principles, I_1, is realised above another, and given the principle of parsimony, it follows that *logos* is analogous to intelligence or Mind. I must emphasise the "analogous" bit of the previous statement. *Logos* is not the same as the type of minds we are used to experiencing in nature. In Chapter 5 the radical uniqueness of *logos's* intelligence becomes more evident. I show that *logos* is not a physical-ordered entity, and does not have a brain or a body, and does not require such things. Yet somehow, *logos* engages in similar activities to the type of minds we are used to experiencing, i.e., conceiving of the set of all logically possible ordering principles and grounding the universe's order. I propose that the best way for us to conceive of this is through the models L^1 and L^2 above.

5.2. Order and Existence

In this section, I shift my attention to defending the notion that engaging in the act of grounding a physical entity, *x's*, order—i.e., of making it the case that a quantifiable relationship conforming to an ordering principle of a specific type obtains—simultaneously grounds the existence of *x*. To begin this discussion, recall that in my exposition of the *order-based* conception of the physical in Chapter 3, I argued that exemplifying order is both a necessary and sufficient condition for an entity to count as being a physical entity. Building on this, I will now further argue that the existence of any particular kind of physical entity depends upon at least some of its order obtaining. In other words, a concrete instance or token of an ordering principle (i.e., a physical entity), exists in so far as it exemplifies at least one or more quantifiable relations conform ordering principles. Let us call this the *Principle of Physical Existence*. We can define this principle more precisely as follows (where 'Δ' is a metalinguistic variable that represents a specific type of ordering principle):

> Principle of Physical Existence (PPE): Necessarily, for any given kind of physical entity, *x*, *x* exists *iff x* exemplifies at least some quantifiable relations conforming to specific types of ordering principles—e.g., Δ_1, Δ_2, … Δ_n.

It is, here, important to emphasise the point I expounded on in Chapter 3 and in Section 5.1.2. There is not one single ordering principle but numerous (perhaps an infinite set of) discrete logically possible ordering principles. When we say of a particular entity that it is physical— i.e., that it exemplifies the relation 'being ordered'—we are, thus, implying that it conforms to a specific type of ordering principle. Meaning, if we accept that to be physical an entity must exemplify a quantifiable relation conforming to an ordering principle, we are, implicitly accepting that any given kind of physical entity conforms to a specific set of ordering principles. PPE is, therefore, merely an explicit stating what is implicitly entailed by the

order-based conception of the physical. Consequentially, one is warranted a belief in PPE if she has good reason to adopt the *order-based* conception of the physical; and I argued in Chapter 3 that there are, indeed, many good reasons to embrace the *order-based* conception.

From PPE we can further infer that some of the order, o, exemplified by a physical entity, x, is essential—meaning o must obtain for x to persist in the world and, furthermore, o obtaining determines what kind of entity x is. We can formalise this with the following definition:

> Essential order: An entity, x's, order o is essential *iff*: (i) o obtaining is both a necessary and sufficient condition for the existence and persistence of x, i.e., should o fail to obtain, x would cease to exist, and (ii) o obtaining determines what type of entity x is.

One can use a thought experiment, like the following involving a water molecule and the fictional cosmic warlord Thanos, to show that some of a physical entity's order is essential.

We can set up this thought experiment by making the following observations. As has been stated numerous times already, a water molecule, w's, atoms exemplify the following order: they are arranged in a tetrahedral shape with a bond angle of 104.5 degrees. The ordering principle that w conforms to is, thus: 'being composed of two hydrogen atoms and one oxygen atom bonded in a tetrahedral shape with a bond angle of 104.5 degrees'. For simplicity sake, however, we can simply refer to w's ordering principle as 'water-type$_1$'. Importantly, the fact that all water molecules exemplify a quantifiable relation conforming to water-type$_1$ is the truth-maker for the proposition that expresses a water molecule's definition, i.e., the proposition <An entity, x, is a water molecule *iff* x is composed of two hydrogen atoms and one oxygen atom arranged in a tetrahedral shape with a bond angle of 104.5 degrees>. With that said, I can now explicate the thought experiment.

Suppose, hypothetically, that w remains conformed to the ordering principle water-type$_1$ from times t_1—t_{10}. Unexpectedly, however, at time t_{11} the cosmic warlord Thanos snaps his finger whilst wearing the Infinity Gauntlet. Let us stipulate that simultaneous to Thanos snapping his fingers at time t_{11}, w's molecules instantaneously re-arrange to conform to a different ordering principle; call it 'water-type$_2$'.[64] Water-type$_2$ specifies that the hydrogen and oxygen atoms remain in a tetrahedral shape with a bond angle of 104.6 degrees (which is one degree higher than what water-type$_1$ specifies). In this scenario, w ceases to exist the instant Thanos snaps his fingers. Meaning, the instant w's microstructure is modified to conform to the specifications of water-type$_2$, w is destroyed and replaced by a new entity we shall call w^*.

Suppose, however, the hydrogen and oxygen molecules that compose w ceased to conform to any ordering principle whatsoever? In other words, instead of snapping his fingers and instantly re-arranging the atoms, Thanos instantaneously makes it the case that w's parts no longer exemplify a quantifiable relation conforming to water-type$_1$ or any other logically possible ordering principle? In this scenario, w would instantaneously cease to exist. This thought experiment teaches us that some of the order exemplified by a water molecule is

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[64] I am not claiming it is nomologically possible to alter a water molecule's structure in this way; only logically possible.

essential order. In other words, some of *w's* order must obtain for *w* to persist in the world and this same order grounds the truth of propositions expressing what kind of entity *w* is.

Interestingly, the thought experiment above also demonstrates something else; namely, that whatever grounds a physical entity's essential order simultaneously grounds its existence. Let us call this principle the *Essential Grounding Principle* and define it as follows:

The Essential Grounding Principle (EGP): for any entity, *x*, if *x*, grounds the essential order exemplified by a physical entity, *y*, *x* simultaneously grounds the existence of *y*.

In the next section, I argue that, as the ground of the universe's order, logos is the ground of the universe's essential order; and, thus, simultaneously the ground of the universe's existence from nothing.

5.3. Logos and Creatio ex nihilo

In Section 5.1.3., I argued the following. In virtue of the fact that *logos* engages in the act of willing that I_1 (a sub-set of the set of all logically possible ordering principles) obtains, a concrete instance or token of I_1 obtains in the world. In other words, *logos's* act of willing that I_1 obtains is what grounds the order exemplified by the universe. I represented this with the model L^2 (where '$\rightarrow$' represents the grounding relation):

L^2: {*logos* $\rightarrow$ the *act* of willing that I_1 obtains $\rightarrow$ a concrete instance or token of I_1 in the world (i.e., the order exemplified by the universe) …}

I then suggested that the grounding relation modelled in L^2 is analogous to that of a performative ground. Recall that a performative ground obtains when the *activity* of an agent (namely, the act of performing some dance or musical piece) grounds a particular concrete instance of a dance or musical composition in the world. As when, for example, a dancer's performance of the Jazz Walk grounds a concrete instance or token of the Jazz Walk in the world. Or when a pianist, performing Beethoven's piano concerto no 4, grounds a particular concrete instance or token of Beethoven's piano concerto no 4.

I maintained one could think of *logos's* relation to the universe's order as being analogous to a performative ground. Only instead of engaging in the act of performing a type of dance or musical composition, *logos* engages in the act of *willing* that a set of ordering principles I_1 is realised in the world; and, instead of grounding a particular concrete instance or token of some dance or musical composition, *logos's* willing grounds a particular concrete instance of I_1 in the world (namely, the actual order exemplified by the universe's).

If we combine this reasoning with the arguments just developed in 5.2., we can infer that, by engaging in the act of willing that I_1 obtains, *logos* simultaneously engages in the act of grounding the universe's essential order. For, it almost goes without saying that the universe's essential order forms part of the order exemplified by the universe. Given EGP, it follows that if *logos* grounds the universe's essential order, *logos* simultaneously grounds the universe's existence.

It is crucial, at this point, to emphasise that I am not at all equating *logos* with an entity like the Demiurge in Plato's *Timeous*. One might conceive of a Demiurge as the *maximal* version of, say, the artist Michelangelo. Just as Michelangelo famously conformed a

lump of marble to the shape of King David, one might conceive of *logos* as having conformed the universe's primitive underlying matter to I_1. To conceive of *logos* in this way, however, would be a mistake. I am not arguing *logos* is imposing order onto some more fundamental eternally existing homogenous material substrata or some fundamental physical entities—e.g., quantum gravitational fields, or wavefunctions, or strings, or quantum foam, or whatever). On the contrary, I am arguing that *logos* is the ground of the universe's order and existence *from nothing*. I take it that this follows from the formal features of ground. Ontological prior to the universe's existence, there could not possibly have existed any physical entities like gravitational fields or stings or quantum foam; nor could there have existed any homogenous material substrata. Hence, the universe came into existence from nothing simultaneous to *logos* engaging in the act of willing that the universe's order be realised in the world.

Conclusion

In this chapter I argued that in addition to being the ground of the universe's order, *logos* exemplifies the property 'being analogous to an intelligent agency or Mind'. I supported this conclusion with two arguments. In Section 5.1.1., I utilised the concept of a type-B intelligence indicator to show that the fact that physical entities conform to ordering principles indicates an intelligence fully or partially explains their existence. One cannot find a mind-independent exemplar or plan "free-floating" in the world completely detached from a mind. On the contrary, our shared uniform experience of reality confirms that ordering principles are ontologically dependent upon the minds which conceive or produce them. Furthermore, experience teaches us that entities like stars, planets, clouds, oceans, mountains, rocks, and trees, do *not* produce ordering principles; but, rather, intelligent agencies with minds do.

In Section 5.1.2. I argued from the contingency of the universe's order to the fact that *logos* is analogous to a mind. Specifically, I argued that the best explanation for why the universe is ordered the way it is—i.e., for why the universe conforms to the sub-set of all logically possible ordering principles, I_1, rather than I_2, or I_3, or I_4—is the activity of an intelligent agency or mind. The reason being an unintelligent entity does not have the power to choose between one option or another; hence, an unintelligent entity could not have chosen to realise I_1 instead of some other set of ordering principles. Following this, in Section 5.1.3., I built on the two previous discussions to develop a more fine-grained account of the type of grounding relations that possibly obtains between *logos* and the set of all logically possible ordering principles; and *logos* and the universe's order. Specifically, I advocated the idea that we should think of the grounding relation that obtains between *logos* and the universe's order as analogous to a performative ground.

After developing this idea, the discussion in Section 5.2. shifted to explicating the relationship between a physical entity's order and its existence. It was here that I expounded on the concept of *essential order* and argued for what I called the *The Essential Grounding Principle* (EGP). The principle that for any entity, *x*, if *x*, grounds the essential order exemplified by a physical entity, *y*, *x* simultaneously grounds the existence of *y*. Building on all of these discussions, I concluded in Section 5.3. by arguing that *logos* also exemplifies the property 'being the fundamental ground of the universe's order-existence from nothing'.

      If the arguments developed in this chapter are sound, we have good reason to believe that *logos* is, at least, similar to the God of apophatic theism (as defined by ATS). For, I have now provided strong reasons for believing that *logos* is like a Mind. Additionally, I have argued that *logos* grounds the universe's order and existence from nothing. In the next chapter, I take another significant step towards identifying *logos* with ATS by arguing that *logos* is both ontologically distinct and fundamental.

Chapter 6: The Ontological Distinctness and Fundamentality of Logos

This chapter defends the thesis that *logos* is both ontologically distinct and fundamental. In saying that *logos* is 'ontologically distinct' I mean it is neither part of nor numerically identical to the universe and that the universe is not a part of *logos*. In saying that *logos* is 'fundamental', I mean that it does not depend on anything ontologically prior to or more fundamental than itself for its existence. My argument for the fundamentality of *logos* is unique. Unlike contemporary arguments for a fundamental level of physical existence, my argument for the fundamentality of *logos* is not based on the concept of well-foundedness. Surprisingly, my argument for fundamentality is compatible with there being no fundamental physical level.

This chapter has the following structure. In Section 6.1., I argue for the ontological distinctness of *logos*. My claim is that the ontological distinctness of *logos* follows given the formal features of ground. After establishing this is the case, I provide reasons for accepting the formal features of ground that the argument is built upon. In Section 6.2., I survey the contemporary debate over well-foundedness. Specifically, I consider the arguments made by priority monists and priority atomists. I also discuss a contemporary Thomisitc argument for well-foundedness. I conclude two things. First, that the argument for well-foundedness does not succeed; second, that whether you agree with me or not, the eutaxiological argument is compatible with both the possibility that the universe is well-founded and with the possibility that it is not. I conclude, in Section 6.3., by explaining why the ontological distinctness of logos entails that *logos* is fundamental.

6.1. The Ontological Distinctness of Logos

In this section, I argue that, given the formal features of ground, it follows that *logos* is ontologically distinct from the universe. In Chapter 4 I explained that grounding is concerned with *ontological priority* and *posteriority*. When one says that an entity, *x*, is ontologically prior to an entity, *y*, she is saying that *x* is more fundamental than *y*. Grounding is, thus, a relation that obtains between numerically distinct hierarchical levels of reality; some of which are more or less fundamental than others.

From this it follows that grounding relations possess the following formal features: they are *irreflexive*, *asymmetric*, and *transitive*. In Chapter 2 I defined these features as follows:

Irreflexive: For any (*x*), *x* is not grounded in *x*.

Asymmetric: For any (*x*,*y*) in a grounding relation R, if *y* is grounded in *x,* then *x* is not grounded in *y*.

Transitive: For any (*x*,*y*,*z*) in a grounding relation R, if *x* grounds *y*, and *y* grounds *z*, then *x* grounds *z*.

Let us briefly consider each of these in turn. We say that grounding is *irreflexive* because it is incoherent to say that an entity, *x*, is ontologically prior to or more fundamental than itself—which is what we would be saying if we claimed that an entity could ground itself. Ergo, grounding relationships are *irreflexive*. In affirming that grounding relations are *irreflexive* it

follows that they are necessarily *n-adic*. Meaning, grounding relations obtain between two or more numerically distinct entities.

For similar reasons, we also take it that grounding is *asymmetric*. For if the grounding entity, *x*, is ontologically prior to the entity being grounded, *y*, it would be incoherent to claim that this relation was *symmetrical*. Doing so would be equivalent to asserting the following contradiction:

P11: *x* is ontologically prior to and more fundamental than *y*, and *y* is ontologically prior to and more fundamental than *x*.

It follows, therefore, that if we understand grounding in terms of ontological priority, grounding relationships are *asymmetrical*. Likewise, it also follows that grounding relations are *transitive*. To see that this is so, consider a grounding relation that obtains between {*x*, *y*, *z*} such that *z* is grounded in *y*, and *y* is grounded in *x*. It would be problematic to say that *z* is ontologically prior to *x*, because *z* is ontologically posterior to *y*, which in turn is ontologically posterior to *x*. To assert, therefore, that *z* is prior to *x* would, ultimately, entail the same contradiction expressed in P11. Hence, it follows that grounding relationships are also *transitive*.

Taking all of this into consideration, we can conclude that—as the ground of the universe's order—*logos* is, necessarily, ontologically distinct from the universe. Here is why. If one were to claim that *logos* is numerically identical to the universe—i.e., to the total collection of all physical entities—she would be violating the *irreflexive* nature of ground. Essentially, she would be asserting that *logos* is ontologically prior to, and thus more fundamental than itself, which is an absurdity.

To see that this is the case, consider the following model. Before explicating the model, it is important to remember that in claiming that *logos* is numerically identical to the universe one is asserting that *logos* is numerically identical to the total collection of all physical entities. We can symbolize the total collection of all physical entities like so—where 'x' is an individual physical entity: $\{x_1, x_2, x_3, \ldots x_n\}$[65]. Given that *logos* = $\{x_1, x_2, x_3, \ldots x_n\}$ we can now build the following model L^3 (where '$\rightarrow$' represents the grounding relation):

$$L^3: \{x_1, x_2, x_3, \ldots x_n\} \rightarrow \{x_1, x_2, x_3, \ldots x_n\}$$

$$logos \qquad\qquad logos$$

In L^3 *logos*—i.e., $\{x_1, x_2, x_3, \ldots x_n\}$—is represented as being the ground of its own existence. Given the formal features of ground, however, this is metaphysically impossible because grounding relations are, necessarily, *irreflexive*. All of this is to say; it cannot be the case that *logos* is numerically identical to the universe.

Is it, however, possible for *logos* to be part of the universe? I think not, because this would also violate the *irreflective* nature of ground. In other words, claiming that *logos* is part of the universe is equivalent to asserting the same absurdity above, i.e., that *logos* is ontologically prior to and, thus, more fundamental than itself. To see that this is true, consider

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[65] Typically '{ }' indicate a set. However, in using '{ }' in the models throughout this section I am not indicating that the universe is a set. I am merely using the '{ }' for the sake of convenience. Having said that, even if one should take the universe in the models to be a set, this would not make any difference to what I am arguing.

the following model L^4. In L^4 '*logos*' = 'x₃' (where 'x₃' is an individual member of the total collection of all physical entities $\{x_1, x_2, x_3, \ldots x_n\}$:

$$L^4: \underbrace{x_3}_{logos} \rightarrow \{x_1, x_2, \underbrace{x_3,}_{logos} \ldots x_n\}$$

As in L^3, L^4 also represents *logos*—i.e., x₃—as being the ground of its own order and existence which is metaphysically impossible. Hence, it cannot be the case that L^4 obtains.

Things fare no better if one maintains the universe is part of *logos*. For, asserting that the universe is part of *logos* violates the *asymmetrical* nature of ground. In other words, it is equivalent to claiming that, simultaneously, *logos* grounds the universe and the universe grounds *logos*. To see that this is the case consider the following model L^5 (where both '$\rightarrow$' and '$\leftarrow$' represent grounding relations):

$$L^5: logos \rightarrow\leftarrow \{x_1, x_2, x_3, \ldots x_n\}$$

According to L^5, by definition, *logos* is the entity that grounds the order-existence of the total collection of all physical entities. Conversely, as proper parts of *logos*, the total collection of all physical entities simultaneously ground the existence of *logos*. This state-of-affairs is, however, metaphysically impossible because it entails the contradiction expressed in P2, i.e., < *x* is ontologically prior to and more fundamental than *y*, and *y* is ontologically prior to and more fundamental than *x*>.

One may push back, however, and argue that L^5 is only problematic because it assumes the grounding relation that obtains between *logos* and its proper parts (i.e., the universe) is a bottom-up relation, i.e., one in which *logos's* parts are more fundamental than *logos*. One may argue, however, that if we take the relationship between *logos* and its parts to be a top-down relation, it would no longer be a *symmetrical* relation. In other words, if one takes *logos* to be more fundamental than its parts, this seems to resolve the inconsistency in L^5. For, instead, we would have the following model L^6:

$$L^6: logos \rightarrow \{x_1, x_2, x_3, \ldots x_n\}$$

A closer look, however, reveals that this proposed solution ultimately fails. The devil, as they say, is in the details. Consider, first, that if the universe is a proper part of *logos*, then part of *logos* is ordered. Given the arguments developed in Part 1—i.e., the order-based conception of the physical and my defence of *Stage One* of the eutaxiological argument—this would entail *logos* is a physical entity. Herein, lies the problem. If *logos* is a physical entity, it is, necessarily, a member of the universe because the universe just is the total collection of all physical entities. If, however, *logos* is a member of the universe, we are once again faced with a contradiction. For, as a member of the universe, *logos* would be ontologically posterior to *logos*—remember, we now suppose that grounding is a top-down relation according to which the whole is more fundamental than the parts. Conflictingly, *logos* would simultaneously be ontologically prior to the universe (because it is supposed to be the ground of the universe's order-existence). We can represent this using L^7:

$$L^7: logos \rightarrow \{x_1, x_2, \underbrace{x_3,}_{logos} \ldots x_n\}$$

L^7 is metaphysically impossible because it violates the *irreflective* nature of ground.

In summary, claiming *logos* is either numerically identical to the universe, or part of the universe or that the universe is part of *logos*, entails many absurd contradictions if one accepts the formal features of ground. To avoid these contradictions one can either reject the formal features of ground—i.e., deny that grounding is an *irreflective*, *asymmetrical*, and *transitive*, relation—or accept that *logos* is ontologically distinct from the universe. I have shown, however, that if grounding constitutes a relation between two or more numerically distinct entities, some of which are more or less fundamental than each other, we must accept the formal features of ground. Ergo, outside of rejecting grounding relations altogether, it is far more reasonable to accept that *logos* is ontologically distinct from the universe.

I will close this section by reflecting a bit more on the notion that *logos* is ontologically distinct from the universe. If *logos* is ontologically distinct from the universe this entails, it is a *non-physical* entity. In classical terminology one would express this by saying that *logos* is *incorporeal*, *immaterial*, or *uncircumscribable*. Utilising the metaphysical terminology and principles defended in this thesis, one can say that, as a non-physical entity, *logos* does not exemplify quantifiable relations conforming to ordering principles. Consequentially, it follows that *logos* does not exemplify any essential order. In Chapter 7, I argue that when we ordinarily talk about an entity's essence (i.e., what kind of entity it is) we are referring to its essential order. Since, *logos* is not physical and, thus, does not exemplify any essential order, it is epistemically impossible for human beings to know what *logos* is. In other words, *logos* is ineffable. I will say much more about this in due course.

For now, I will conclude with one final observation. In the previous chapter, I argued that *logos* is the intellect or mind that grounds the set of all logically possible ordering principles and that wills that a particular sub-set of these is realised in the world. In arguing for this, I made it clear that when referring to *logos* as an intelligence, I meant this in an *analogous* sense. Now that I have established that *logos* is ontologically distinct from the universe and, thus, a non-physical entity, this point should be even more evident. For as a non-physical entity, *logos* simply cannot be an intelligent agency in the same sense that human beings and other animals (and some machines) are said to be intelligences.

Now that I have shown *logos* is ontologically distinct from the universe, I will turn my attention to showing that *logos* is the *fundamental* ground of the universe's order and existence from nothing. I will begin by discussing contemporary conceptions of fundamentality.

6.2. Contemporary Conceptions of Fundamentality

One can divide contemporary conceptions of fundamentality into two primary camps: *priority monists* and *priority atomists*. Advocates on both sides believe there is a *fundamental* ground of the universe's existence. Generally speaking, an entity, *x*, is taken to be a fundamental ground just in case *x* is not grounded in anything numerically distinct from and ontologically prior to itself. However, priority monists and priority atomists are not concerned with a general conception of fundamentality. Rather, they are interested in the possibility that there is a fundamental physical or concrete entity or entities. More precisely, they are interested in the notion that the universe is well-founded. They maintain that, indeed,

there is an ungrounded fundamental level of physical existence. They disagree, however, on the details.

Priority monists believe there is a single concrete composite entity, a unique mereological fusion of all concrete entities (i.e., a *cosmos*), that is most fundamental. It is here that I must pause to clarify a critical terminological point. In Chapter 2 I explained that, according to STU 2.0., there are three different fine-grained conceptions of the physicalist universe which I labelled: 'The Physicalist Universe$_\alpha$', 'The Physicalist Universe$_\beta$', and 'The Physicalist Universe$_\gamma$'. In my explication of the eutaxiological argument, I have used the term 'the universe' per 'The Physicalist Universe$_\alpha$'. In other words, I have taken 'the universe' to refer to the total collection of all physical entities.

In contrast, contemporary debates over fundamentality, tend to use the term 'the universe' or 'the *cosmos'* as it is defined by 'The Physicalist Universe$_\beta$'. In other words, they take 'the universe' or 'the *cosmos'* to refer to the mereological *fusion* of all physical or concrete entities. For the sake of simplicity and clarity, I have decided to simply stipulate that the term 'the *cosmos'* (commonly used in discussions about well-foundedness) is equivalent to the term 'the universe' as it is defined by 'The Physicalist Universe$_\beta$'.[66] Admittedly, this is not very elegant but is unavoidable given the range of different terms used in the literature.

Let us, now, proceed with the discussion at hand. According to priority monism, every concrete entity that is numerically distinct from the universe depends upon the universe for its existence; yet the universe does not depend upon any concrete entity more fundamental than itself for its existence. Following Trogdon (2017), we can express this more concisely as follows:

> Priority Monism: there exists a *cosmos*—i.e., the unique fusion of all concreta—that is fundamental, and any concrete entity numerically distinct from the *cosmos* is grounded by it.

Priority monists take mereological grounding relations to run from the "top-down" which we can represent with model L^8 (where '$\rightarrow$' is the grounding relation):

L^8: {*Cosmos* $\rightarrow$ Super-galaxies $\rightarrow$ Galaxies $\rightarrow$ Solar systems $\rightarrow$ Planets & Stars $\rightarrow$ Chemicals $\rightarrow$ Molecules …}

According to L^8, the *cosmos* (i.e., the universe) is the "top-level"—meaning, there is nothing ontologically prior to it. Note, however, that L^8 does not have a "bottom-level". This suggests that the pattern of higher-level entities grounding lower-level entities may descend indefinitely. It also indicates that the universe, according to L^8, is *gunky*, i.e., that every entity at every level of reality has proper parts.

Conversely, priority atomists believe are a plurality of uncomplex, mereological atoms (i.e., m-atoms) that are the fundamental proper parts of all complex concreta.

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[66] A fusion of all 'concreta' is not necessarily identical to a fusion of all 'physical entities'. While all physically entities are typically taken to be concrete objects, it is not necessarily the case that all concrete objects are physical. For example, many theists contend that, if God exists, he is a non-physical concrete object. Likewise, substance dualists take the mind to be a non-physical concrete object. For the purposes of this chapter, however, we can safely set aside these debates and take 'the cosmos' to be equivalent to 'the universe' as defined by 'The Physicalist Universe$_\beta$'. The reason we can set these discussions aside is because our primary concern in this section is to understand the contemporary debate about fundamentality.

According to priority atomism, all complex concrete entities ultimately depend for their existence on m-atoms; yet, the m-atoms do not depend on anything more fundamental for their existence—in virtue of the fact that they are uncomplex. We can express this thesis more concisely as follows:

> Priority Atomism: there exist multiple m-atoms (i.e., uncomplex conreta), each of which is fundamental, and any complex concrete entity decomposes into m-atoms such that the latter ground the former.[67]

It is important to note that when I use the term 'm-atoms' I am not referring to the same thing that physicists and chemists do when they use the term 'atoms'. This should be obvious because, in physics and chemistry, atoms are not uncomplex entities. On the contrary, atoms are composed of protons, neutrons, and electrons. When I use the term 'm-atom', I take it to denote a simple or uncomplex concrete entity that is not grounded in anything more fundamental.

Priority atomists, unlike priority monists, take mereological grounding relations to run from the "bottom-up" which we can crudely represent with model L^9 (where '←' is the grounding relation and 'elementary particles' are the 'm-atoms'):

$$L^9: \{\dots \text{Super-galaxies} \leftarrow \text{Galaxies} \leftarrow \text{Solar Systems} \leftarrow \text{Planets \& Stars} \leftarrow \text{Chemicals} \leftarrow \text{Molecules} \leftarrow \text{Atoms} \leftarrow \text{Elementary Particles}\}$$

According to L^9, the m-atoms (in this case, we suppose that elementary particles are fundamental) represent the "bottom-level" of reality. As such, there is nothing more fundamental or ontologically prior to the elementary particles. Conversely, there is no "top-level" meaning the pattern of lower-level entities grounding higher-level entities may ascend indefinitely. A also entails that the universe is *junky*, i.e., that every entity at every level of reality is a proper part of some numerically distinct plurality at a higher level.

In summary, priority monism is the notion that there exists a single fundamental composite entity, a *cosmos*, that sits at the top level of the chain of existence and, in which, everything else depends for its existence. In contrast, priority atomism is the notion that there exists a plurality of fundamental, uncomplex, proper parts—i.e., m-atoms—that sit at the bottom level of the hierarchal chain of existence and upon which every complex concrete entity ultimately depends for its existence. Both views, thus, believe that the universe is well-founded, i.e., that there is a fundamental level of physical existence.

6.2.1. The Contemporary Argument for Well-Foundedness

Now that I have outlined the two predominate contemporary conceptions of fundamentality, we must consider why one might adopt either view. According to Bohn (2018), there are not any well-defined arguments for well-foundedness in the contemporary literature. As he explains, well-foundedness "seems to be more of an assumed *metaphysical axiom* (or *metaphysical law*) supported by *intuition*" (Ibid., p.169). He goes on to state:

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[67] I have also adapted this definition from Trogdon (2017).

The intuition thus seems to be something like this: reality, or being is *transferred* from the ground to the grounded, so all facts *gain* their being from their ground, so if there is no bottom ground, there is nowhere from which the transfer of being initially comes, nowhere from which to gain being to begin with (Ibid.).

We can, however, formulate this intuition held by contemporary proponents of well-foundedness into an argument as follows:

Contemporary Argument for Well-Foundedness (CAWF)

(1) A physical level is fundamental *iff* it is not grounded by any physical entity or entities ontologically prior to it.

(2) If there is no fundamental physical level, all physical levels have ground.

(3) If all physical levels have ground, there are no physical levels.

(4) But, there are physical levels.

(5) Therefore, there is a fundamental physical level.[68]

The key premise of CAWF is premise (3). Schaeffer has proffered the following argument in support of this premise:

Grounding must be well-founded because a grounded entity inherits its reality from its grounds, and where there is inheritance there must be a source. One cannot be rich merely by having a limitless sequence of debtors, each borrowing from the one before. There must actually be a source of money somewhere. Likewise something cannot be real merely by having a limitless sequence of ancestors, each claiming reality from its parents. There must actually be a source of reality somewhere. Just as wealth endlessly borrowed is never achieved, so reality endlessly dependent is never realized (Schaeffer, 2016 p.95).

This argument is problematic for several reasons. For starters, it relies on a faulty analogy. A *diachronic* chain of debtors standing in a chain of causal relations is relevantly dis-analogous from a *synchronic* chain of ontological levels standing in a chain of essentially dependent grounding relations. The members of a diachronic chain of causes are not essentially dependent upon each other; whereas, the members of a synchronic chain of grounds are. Roughly, an entity, x, is essentially dependent upon another entity, y, just in case if x does not exist, then y does not exist. To better understand why this is important, consider the following example involving a chain of mobsters lending money to one another.

Suppose Frank borrows £20,000 from Mac at time t_3. Suppose, further, that the £20,000 Mac gave to Frank was borrowed from Lou at time t_2, who, in turn, borrowed the money from Vinnie at time t_1. Here we have a diachronic chain involving one agent (i.e., Vennie) transferring some money—£20,000 to be exact—to another agent (i.e., Lou), who

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[68] This is an adaptation of Bohn's formulation of the argument which, originally, reads as follows: "by definition, something is a fundamental fact if and only if it has no ground; hence, if there are no fundamental facts, all facts have ground; and if all facts have ground, there are no facts; but obviously there are some facts; hence there are some fundamental facts." (Ibid., p). While I have rephrased his argument to fit more seamlessly into my narrative, I believe I have retained the essence of Bohn's original formulation.

then transfers the money to another agent (i.e., Mac), who then transfers the money to another agent (i.e., Frank) at discrete times.

In this chain there is a 2-place or dyadic causal relation obtaining between Vinnie and Lou, Lou and Mac, and Mac and Frank. The event involving Frank receiving money from Mac at t_3 is not essentially dependent upon the event involving Vinnie lending money to Lou at t_1. The reason being, an entirely different series of events could have occurred prior to Frank receiving money at t_3. Suppose that, in true mobster fashion, rather than borrow money from Vinne, Lou triggered a car bomb, killing Vinnie, and then proceeded to steal £20,000 from underneath Vinnie's mattress at t_1. The untimely death of Vinnie at t_1 does not entail Frank no longer receives £20,000 from Mac at t_3. On the contrary, the events prior to t_3 could have transpired differently than described, and Frank still would have gotten his money. This reveals that the event involving Frank receiving money from Mac at t_3, does not essentially depend for its existence on the event involving Lou borrowing money from Vinnie at t_1 (because things might have gone differently in the past and the event involving Frank receiving money might still have occurred).

Intuitively, because the members of the chain of causes above do not essentially depend upon each other, it seems both logically and metaphysically possible that such a series could go backwards in time indefinitely.[69] So, for example, we can conceive of a possible world, W_1, in which Vinnie received the £20,000 from Tony, who received it from Joe, and so on and so forth *ad infinitum*. In W_1 it is true that Frank has £20,000 and is, thus, rich. It is, also, true that Frank received his wealth from an infinite chain of mobsters transferring money from one to the next. Hence, there is no ultimate source of the £20,000. *Contra* Schaeffer, therefore, there is a possible world in which one can be rich merely by having a limitless sequence of debtors, each borrowing from the one before.

In principle, then, it seems that it is possible for a *diachronic* chain of causes to extend indefinitely. It can be argued, however, that the same cannot be said regarding a *synchronic* chain of essentially dependent levels of reality standing in grounding relations. Before explaining how one might argue for this, let us first try to understand the nature of a synchronic chain of essentially dependent entities better. To do that, consider the following chain of entities standing in grounding relations (where '←' represents the grounding relation):

L^{10}:{… Fido ← organs ← tissues ← cells ← organelles ← molecules ← atoms}

In L^{10} the existence of a dog, Fido, at a time, t_1, is partially grounded in the existence of Fido's organs at t_1, and the existence of Fido's organs at t_1, is partially grounded in the existence of Fido's tissues at t_1, and the existence of Fido's tissues at t_1 is partially grounded in the existence of Fido's cells at t_1, and so forth. If any of the links in this chain of grounding relations failed to obtain at t_1, then Fido would instantaneously cease to exist at t_1. Unlike the

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[69] William Lane Craig famously disagrees, arguing that it is metaphysically impossible for a diachronic causal dependence chain such as this one to go backward in time indefinitely. Morriston (2018) and McAllister (2011) note that Craig's arguments largely depend upon one finding the paradoxes generated by actual infinities intuitively absurd. As is well known, Craig famously appeals to paradoxes like *Hilbert's Hotel* and an *Infinite Library* to demonstrate the sheer absurdity of the proposition that an actual infinite number of temporal events is metaphysically possible. A great many philosophers, however, do not share Craig's intuition—believing, in contrast, that an actual infinite series of temporal events is metaphysically possible (Cf., Oppy, 2009 Ch4; Philipse, 2012 pp.225-26; Morriston, 2018 pp.79-86).

diachronic chain of causes, therefore, the upper-level or posterior entities of a synchronic chain of grounds are essentially dependent upon the existence of those on the lower level.

For this reason, some philosophers have argued that, in principle, a *synchronic* chain of essentially dependent levels standing in a series of grounding relations, could not descend indefinitely. Most notably, the contemporary Thomistic philosopher Gaven Kerr makes this argument (Kerr uses medieval terminology in his argument; notbly he uses the term 'cause' in a sense that is roughly equivalent to what contemporary philosophers refer to as a 'ground'):

> So considering a supposed infinite one-many series [i.e., a synchronic chain of essentially dependent levels of reality], there will be no primary cause in such a series. But if this is so, then the causes in the series will have no causal efficacy, because … causal efficacy in the one-many series is originated and preserved therein by a primary cause. Therefore, to deny a primary cause of the one-many series (i.e., to affirm the possibility of an infinite such series), is precisely to remove the causal efficacy of the causes within the series, which is in effect to deny the causal series itself. So the believer in an infinite one-many series has to face the following contradiction: (i) in a one-many series the causes are causally inefficacious without some primary cause on which the causal efficacy of the series depends and which naturally terminates the series, and (ii) in an infinite series there is no primary, naturally terminating cause, in which case there is no cause for the causal efficacy of the series. Thus, a believer in an infinite one-many series denies any causal efficacy to that series, in which case he or she denies the possibility of that series precisely as a causal series. The one-many series is thus finite, otherwise it is not a one-many series. *per se* causal series then are necessarily finite series (Kerr, 2015 pp.141-2).

Setting aside the differences in terminology, to my mind, Kerr's argument here seems much closer to what Schaffer has in mind in his defence of well-foundedness. It is curious, therefore, that Schaffer ends up using an example involving a diachronic chain of non-essentially dependent entities to make his case.

In any event, Graham Priest (2014) claims the Thomistic argument expounded by Kerr is fallacious because it begs the question. Indeed, a *prima facia* reading of Kerr's argument may lead one to agree with Priest. For it seems like Kerr is first assuming the conclusion that a synchronic chain of essentially dependent levels of reality must be well-founded and then using that as evidence for well-foundedness. A closer look at Kerr's argument, however, reveals that he does not commit this fallacy. The question Kerr is trying to answer is: 'Is it possible for a synchronic essentially dependent chain of grounds to descend indefinitely?'. Kerr's response to this question is to, first, argue that the following proposition is true:

> P13: Necessarily, all synchronic essentially dependent chains of grounds (i.e., what Kerr terms a *per se* causal series) have a primary or fundamental member.

Kerr's argument seems to be based on the intuition that, if such a chain was not well-founded, then it would, simply, not exist; or, as he states it, "Therefore, to deny a primary cause [i.e., a fundamental ground] of the one-many series (i.e., to affirm the possibility of an infinite such series), is precisely to remove the causal efficacy of the causes within the series, which is in effect to deny the causal series itself."

After making this argument for P13, he then argues that if P13 is true, synchronically dependent chains are, necessarily, finite. His answer to the above question is, thus: "No, it is impossible for a synchronic essentially dependent chain of grounds to descend indefinitely. This move is no more question-begging than arguing that a bachelor can't be single on the basis that, necessarily, all bachelors are unmarried men. I believe, therefore, that Kerr proffers a valid argument. The critical question at hand is whether it is sound.

There are, unfortunately, several problems facing Kerr's argument. To begin with, even if we grant that P13 is true, it does not follow that all synchronic essentially dependent chains of grounds are, necessarily, finite. As we have already seen in this chapter, advocates of priority monism believe the universe, taken as a mereological fusion, is fundamental. Yet, they also believe the universe is *gunky*, i.e., it infinitely descends into numerically distinct levels composed of smaller and smaller parts. Likewise, proponents of priority atomism believe that there is a fundamental level composed of m-atoms, yet they simultaneously believe the universe is *junky*. Meaning, it infinitely ascends into larger and larger structures. So, even if we grant that P13 is true, it does not follow that all synchronic essentially dependent grounding chains are necessarily finite. P13 simply entails they are finite in at least one direction.

There is, however, a bigger problem concerning Kerr's defence of P13. Namely, his argument seems to be based on an intuition that if a synchronic essentially dependent chain of grounds was not well-founded then it would not exist. Unfortunately, this is an intuition that many philosophers (including myself) do not share. I can conceive of a possible world in which an infinite synchronic chain of essentially dependent grounds obtains and is not well-founded. For example, consider a possible world, W_2, in which the universe is *hunky*, i.e., in which every entity in the universe both has proper parts and is a proper part. In a *hunky* universe, the chain of grounds both ascends and descends indefinitely. Importantly, in W_2, we can stipulate that the existence of the entities at each level of the hierarchy essentially depends on the existence of the entities ontologically prior to them in the chain.

Beyond the mere logical and metaphysical possibility of W_2, however, Bohn believes there are strong empirical reasons for believing the universe is *hunky*. As he explains:

In fact, there are even some (highly defeasible!) reasons to believe that the concrete world is actually hunky. We are faced with a general cosmic pattern that so far has no clear end points in sight. Starting high up, the universe is partly composed of clusters of galaxies; the clusters of galaxies are partly composed of galaxies; the galaxies are partly composed of solar systems; the solar systems are partly composed of planets and stars; the planets and stars are partly composed of various chemicals; the various chemicals are partly composed of molecules; the various molecules are partly composed of atoms; the atoms are partly composed of electrons, protons, and neutrons; the protons and neutrons are partly composed of various quarks; the various quarks are partly composed of…to be continued? Starting low down, the various quarks partly compose the protons and neutrons; the electrons, protons, and neutrons partly compose atoms; the atoms partly compose molecules; the molecules partly compose chemicals; the chemicals partly compose planets and stars; the planets and stars partly compose solar systems; the solar systems partly compose galaxies; the galaxies partly compose clusters of galaxies; the clusters of galaxies partly compose super-clusters of galaxies; the super-clusters of galaxies partly compose…to be continued? Or perhaps they partly compose the universe, which in turn partly composes a multiverse; which in turn partly composes…to be continued? … As science has progressed, we have again and again

discovered that … [the universe] … is both bigger (cf. the development of cosmology) and smaller (cf. the development of particle physics) than we thought before. Considering that overall cosmic pattern, we are faced with some inductive/abductive reasons to think there is no end in either direction; dismissing these reasons out of hand, and especially on a priori grounds, seems scientifically and theoretically irresponsible (Bohn, 2018 pp.176-177).

While I find Bohn's argument for *hunkiness* compelling, my goal in this section was not to make any definitive pronouncements on this debate. In other words, my goal was not to show that CAWF is unsound. On the contrary, I simply wanted to introduce the contemporary dialectic surrounding fundamentality.

The key point I wish to highlight from this discussion is that the contemporary debate is concerned with whether there is a fundamental *physical* level. Whether one believes there is a fundamental physical level or not, however, has no bearing on the eutaxiological argument. As I have argued repeatedly throughout this thesis, the eutaxiological argument is compatible with numerous discrete metaphysical theses and scienetific theories. If it turns out that the universe is *hunky*, *gunky*, or *junky*, this makes no difference to the eutaxiological argument. The conclusion of the eutaxiological argument that the universe has a ground of its order and existence from nothing is logically compatible with any of these mereological conceptions of the universe obtaining.

6.3. The Fundamentality of Logos

Now that I have clarified that my contention that *logos* is the fundamental ground of the universe's order and existence from nothing is not based on an argument for well-foundedness I can explicate my argument. My reasoning for this conclusion relies on everything I have established in the previous chapters. In Chapter 5, I argued that *logos* is analogous to an intelligence and that we can conceive of *logos* as grounding the set of all logically possible ordering principles. In Section 6.1., I further established that *logos* is ontologically distinct from the universe and, thus, a non-physical and non-ordered entity. From this, it follows that *logos* does not exemplify any quantifiable relations conforming to ordering principles. Indeed, it would be incoherent to say that *logos* conforms to any ordering principle given that it is the ground of all ordering principles.

Given all of this, it follows that *logos* is an uncomplex or simple entity. If *logos* did have proper parts, these parts would stand in a specific type of quantifable relation to each other; and this relation would conform to an ordering principle which specified how the parts are to relate to each other. In short, the supposition that *logos* has proper parts unavoidably leads to the conclusion that *logos* is a physical-ordered entity (which, I have already established is metaphysically impossible). Once one grants that *logos* is uncomplex, and does not conform to any ordering principles, it immediately follows that *logos* is fundamental, i.e., that *logos* is not grounded in anything ontologically prior or more fundamental.

Indeed, it is difficult to understand what someone might mean if they asked the question 'What grounds the existence of *logos*?'. Do they mean, 'What ordering principle does *logos* depend on for its existence?' If so, the answer is none; for all ordering principles depend on *logos* for their existence. Or do they mean 'What parts does *logos* depend on for its existence?'. If so, the answer is none; *logos* is mereological simple. Or do they 'What fact makes *logos* true?''. If so, this does not make sense because only propositions can be true, and logos is not a proposition. In summary, given that *logos* is the intelligence that grounds all

logically possible ordering principles, and grounds the universe's order and existence from nothing, and given that *logos* is ontologically distinct and mereologically simple, it follows that *logos* is a fundamental ground.

Conclusion

In this chapter I argued that *logos* is both ontologically distinct and fundamental. I showed that, given the formal features of ground, *logos* is neither part of nor numerically identical to the universe and that the universe is not a part of *logos*. In so arguing, I eliminated the possibility that *logos* could be identified with pantheistic or panentheistic conceptions of God. After establishing this, I went on to survey the contemporary debate over fundamentality. I explained that the eutaxiological argument is logically compatible with the possibility that there is a fundamental physical level. Likewise, it is equally compatible with their not being a fundamenetal physical level. I then explaind that one can argue for the fundamentality of logos without reference to an argument for well-foundedness. I concluded by expounding on why *logos* is a fundamental entity. My argument rested on the notions that *logos* is the ground of all ordering principes, the ground of the universe's order and existence from nothing, ontologically distinct and, thus, non-physical and uncomplex.

If my arguments, thus far, have been successful, then I have established that *logos* corresponds with nearly all of the features listed in ATS. One important feature, however, remains to be discussed; namely, the notion that logos is ineffable. The next two chapters discuss this challenging topic.

Chapter 7: The Ineffability of Logos

In this chapter I develop arguments that show *logos* is ineffable. As we shall see, the claim that *logos*—or, indeed, that any supposed divine reality (e.g., *Allah*, or *Brahman*, or *Dao*, etc.)—is ineffable is controversial. It is likely that the reader will immediately wonder how it is that I can claim *logos* is ineffable after having spent multiple chapters predicating things of *logos*? Among other things, I have argued *logos* is unique, simple, fundamental, ontologically distinct, the ground of the universe's order-existence from nothing, and that *logos* is analogous to an intelligent agent or mind. In short, thus far, the entire dissertation seems to contradict the thesis that *logos* is ineffable. Indeed, even the claim that *logos* is ineffable seems to be self-refuting because in claiming that *logos* is ineffable, I appear to be predicating something of *logos*; namely, that it is ineffable. One can sympathise, therefore, with the critic for being highly sceptical regarding the merits and coherence of the central claim of this chapter.

Nevertheless, I seek to meet these challenges and develop a coherent definition of ineffability as well as proffer an original argument that, if sound, entails *logos* is ineffable. In Section 7.1, I begin by considering the contemporary conception of ineffability. I refer to this conception as *metaphysical ineffability*. I outline several of the strongest objections to metaphysical ineffability as well as several recent attempts to meet these challenges. I conclude that metaphysical ineffability is, indeed, incoherent. In Section 7.2., I outline the conception of ineffability traditionally espoused by *apophatic theism*. I refer to this view as *epistemological ineffability*. I then respond to some problems facing this view. Finally, in Section 7.3, I conclude by proffering arguments that demonstrate *logos* is epistemologically ineffable.

7.1. Contemporary Conceptions of Ineffability

Among analytic philosophers of religion, the contemporary debate over ineffability is centred around a concept I refer to as *metaphysical ineffability* (MI).[70] What is MI? In William Alston's seminal paper on ineffability, he cites the theologian W. T. Stace as a representative of this view:

> To say that God is ineffable is to say that no concepts apply to Him, and that He is without qualities . . . And this implies that any statement of the form "God is x" is false … Thus to the intellect He is blank, void, nothing. You cannot attach any predicate to Him ... because every predicate stands for a concept, so that to affirm a predicate of Him is to pretend that He is apprehensible by the conceptual intellect (Quoted from Alston, 1956 p.5).

As this passage makes clear, MI is a substantial metaphysical thesis. Meaning, an ineffable entity—according to Stace—is one that does not possess any properties and, therefore, it is impossible to predicate anything of it. We can more explicitly define MI as follows:

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[70] In case there is any confusion, I must note that the term 'metaphysical ineffability' is one of my own creation and is not actually used by any of the thinkers I attribute it to. Nevertheless, the term refers to the type of ineffability these thinkers adhere to.

> Metaphysical Ineffability (MI): For any entity *x*, *x* is ineffable *iff x* does not instantiate any properties.

According to MI, one cannot apply any predicates or concepts to an ineffable entity, *x*, in virtue of the fact that *x* does not instantiate any properties. Likewise, one cannot hold any true beliefs about *x* in virtue of the fact that she cannot apply any concepts to *x*. Plantinga traces the origins of MI back to Immanuel Kant (Plantinga, 2000 pp.10-11) but it is unclear whether Kant adopted this conception from some other source. I am inclined to think that Kant derived his conception of ineffability from Descartes but do not have space to establish this claim here.

In any event, as far as I can tell, the contemporary dialectic exclusively revolves around MI which is usually the subject of sever criticism. For example, MI is the conception of ineffability that Alvin Plantinga famously critiques in his important work *Warranted Christian Belief*:

> It seems many theologians and others believe that there is real difficulty with the idea that our concepts could apply to God—that is, could apply to a being with the properties of being infinite, transcendent, and ultimate. The idea is that if there is such a being, we couldn't speak about it, couldn't think and talk about it, *couldn't ascribe properties to it*. If that is true, however, then, strictly speaking, Christian belief, at least as the Christian understands it, is impossible. For Christians believe that there is an infinite, transcendent, ultimate being about whom they hold beliefs; but *if our concepts cannot apply to a being of that sort, then there cannot be beliefs about a being of that sort* (Emphasis mine Ibid., 2000 p.4).

Like Alston, Plantinga conceives of ineffability as the metaphysical thesis that God has no properties and, thus, that there are no concepts that apply to God. According to Plantinga, if God is metaphysically ineffable, one cannot hold beliefs about him. This notion is deeply problematic for Judeo-Christian theists because Christianity explicitly affirms one can hold true beliefs about God. More recently, MI has been vigorously criticised by R. T. Mullins who writes:

> Ineffability is an ill-judged *metaphysical* compliment given to God. It is a misplaced piety that attempts to express the transcendence of God by noting the limits of human language and reason, but ultimately lands in nonsense because it teaches that "God is unknown and knowable" (Emphasis mine Mullins, 2016 p.6).

He goes on to argue that,

> In my opinion no Christian theologian actually believes in the doctrine of ineffability. It is something that Christian theologians may pay lip service to, but it is not something one can actually believe. There are two reasons for thinking this to be true. The first is due in part to the fact that the doctrine is self-referentially incoherent. It cannot even be stated in a meaningful way. To say that God is unknowable is to know something about God … The second reason to think that no Christian theologian actually believes in the doctrine of ineffability is derived from the simple fact that every major Christian theologian has completely ignored it in practice. Augustine, Gregory of Nyssa, John of Damascus, and Pseudo-Dionysius are great examples of people who pay lip service to ineffability, and then go on to write large treatises on the divine nature. If they really thought that God is ineffable they would not continue to speak about what God is like at such great lengths (Ibid., p.7).

Like Alston and Plantinga, the concept of ineffability Mullins clearly finds objectionable is MI. Note that he alludes to MI by explicitly referring to ineffability as a "metaphysical compliment" given to God. His criticisms, implicitly, reveal that the target of his protestations is MI as well. He argues, first, that ineffability is self-referentially incoherent because when one makes the assertion that God is unknowable, she is claiming to know something about God; namely, that God is unknowable. This is only a problem for ineffability if we take ineffability to be equivalent to MI. For in asserting that 'God is unknowable' we are, in fact, predicating something of God; namely, that he bears the property 'being unknowable'. In which case, we have just refuted the very thesis we were trying to establish; namely, that God does not have any properties to be known.

Mullins further argues that, despite their supposed belief in ineffability, Eastern Christian figures like St Gregory of Nyssa, St John of Damascus, and Pseudo-Dionysius predicate many things of God. According to Mullins this makes them hypocrites who do not actually believe their own claims regarding ineffability. Again, this objection only makes sense if Mullins takes ineffability to be equivalent to MI. Indeed, it would be radically inconsistent for one to simultaneously claim that God has no properties whilst writing extensively about God's properties.

As the passages above, from Plantinga and Mullins, make clear, MI faces significant problems. While I have summarised some of these problems already, it is important to present the arguments against MI more formally. For that one can do no better than Alston's canonical treatment of ineffability that I opened this section with. As will become clear, the criticisms of ineffability I just canvassed seem to be restatements of the arguments that Alston meticulously proffered in his original article. With that being said, let us consider Alston's first argument against MI. It can be formulated as follows:

Alston's First Argument Against MI

(1) If an entity x is metaphysically ineffable, then no predicate F can be applied to x.

(2) In the statement 'x is metaphysically ineffable' a predicate is applied to x.

(3) Therefore, x is not metaphysically ineffable.[71]

Mullins's argument that ineffability is self-referentially incoherent is, essentially, a re-statement of Alston's first argument against MI. The problem it presents for the proponent of MI is formidable. To see this, let us consider each premise in turn. Premise (1) of Alston's first argument is true by definition. Meaning, if ineffability is defined in accordance with MI, it follows, necessarily, that one cannot, in principle, predicate any F's of an ineffable entity x. Premise (2) brings out the problem. It shows that in asserting that x does not possess any properties (which is what MI interprets the statement 'x is ineffable' to mean) we are, indeed, asserting that x has, at least, one property; namely, the property 'being an entity that does not instantiate any properties'. Hence, we cannot coherently assert that x is ineffable; in which case, premise (3) is true.

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[71] The original presentation of this argument can be found in (Alston, 1956 pp.507-510). My formulation of the argument is adapted from Sebastian Gäb's reconstruction of Alston's argument in (Gäb, 2017 p.290). Neither Alston nor Gäb use the term 'metaphysical ineffability'; however, this is clearly the notion of ineffability they are concerned with.

As if this was not damning enough, Alston presents a second argument against MI:

Alston's Second Argument Against MI

(1) A speaker *s* uses a proper name *n* for an entity *x* correctly *iff s* is able to name at least one property F of *x*, which identifies *x* as reference *x* of *n*.

(2) If *s* can name F, *s* can predicate F of *x*.

(3) Therefore: *s* is using *n* correctly, *iff s* can predicate F of *x*.

(4) Therefore: If *s* is using *n* correctly, *x* cannot be metaphysically ineffable.[72]

Alston's second argument is explicitly aimed at the religious believer who takes the term 'God' to be a proper name yet also believes that God is metaphysically ineffable.[73] One can discern a similar pattern of reasoning in Plantinga's criticisms of ineffability.

Premise (1) of Alston's second argument is relatively uncontroversial—which is to say, it seems more reasonable to believe it is true than false. For, suppose we are having dinner at the Cheesecake Factory and I mention I have a friend named Sheldon, whom you have never met. Out of politeness, you ask who Sheldon is? It would be natural for me to respond by listing some of Sheldon's properties. So, for example, I might respond as follows: "Sheldon is a condescending theoretical physicist who works at Caltech". Suppose, however, that I was unable to list any of Sheldon's properties—including, even, the fact that Sheldon bears the property 'being my friend'. How might I correctly use the proper name 'Sheldon' if I do not know any of Sheldon's properties? Indeed, it is hard to see how I might have even initiated a conversation using the name 'Sheldon' in the first place if I have no knowledge of any of the properties that the person, Sheldon, possesses!

Premise (2) is also relatively uncontroversial. In keeping with the example above, it merely states that if I know at least one of Sheldon's properties, then I can attribute this property to Sheldon. So, for example, if I can identify that Sheldon is my friend, then I can make the following predication: Sheldon bears the property 'being my friend'. Premise (3) follows from (1) and (2). I am using the name 'Sheldon' properly if and only if I can predicate at least one property of the person Sheldon; namely, that the person Sheldon bears the property 'being my friend'. The assumption being, I could not recognise there is a distinct person—i.e., Sheldon—who is the referent of the name 'Sheldon' if I do not know at least one of Sheldon's properties. From this, premise (4), follows. The fact that I am using the name 'Sheldon' correctly entails that I can predicate at least one property of the person Sheldon—namely, that he is my friend. Ergo, it cannot be the case that any person who is the referent of a proper name, like Sheldon, is metaphysically ineffable (because in using a name correctly I am implicitly affirming that the referent of the name has at least one property).

Alston's argument is intended to show that if we treat the term 'God' as a proper name (as theistic personalists do), the only way we can use it correctly is if we can apply at

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[72] As with the first argument against MI, the original formulation of the second can be found in (Alston, 1956 p.11-20). My formulation of the second argument is also adapted from Gäb's reconstruction in (Gäb, 2017 p.290). Neither Alston or Gäb use the term 'metaphysical ineffability'; however, this is clearly the notion of ineffability they are wrestling with.

[73] It is important to highlight the fact that Alston, Plantinga, Mullins, and, indeed, most critics of ineffability are theistic personalists.

least one predicate to the person God. So, for example, to correctly use the name 'God' we must at least be able to say that the name 'God' refers to the person who, for example, created the universe or who grounds objective moral facts, or whatever. In which case, we are affirming that the person, God, bears the properties 'being the creator of the universe' or 'being the ground of objective moral facts', etc. In so doing, however, we are asserting, *contra* MI, that God instantiates properties. However, if we deny that we can predicate any properties of God, then we can no longer correctly (according to Alston) use the term 'God' to refer to the entity that instantiates the maximal-person properties.

Alston's arguments are formidable and, as far as I can tell, seem to be the original source of contemporary contempt for ineffability. For, as we have seen, contemporary critics of ineffability like Plantinga and Mullins seem to be restating Alston's arguments above or, at least, engaging in a remarkably similar pattern of reasoning as Alston did. In virtue of this fact, I will henceforth refer to contemporary challenges to ineffability as Alstonian objections. While Alstonian objections to ineffability are formidable, some philosophers have attempted to construct versions of ineffability that are not vulnerable to them. In the next section I consider two of the most significant contemporary formulations of ineffability in the face of Alstonian criticisms: namely, those proffered by John Hick and Jonathan Jacobs. I conclude that, in spite of initial appearances, their versions of ineffability ultimately succumb to Alstonian objections.

7.1.2. Contemporary Responses to Alstonian Objections to Ineffability

One significant contemporary response to Alstonian objections to ineffability is proffered by John Hick. Hick's first move is to deny that we should interpret ineffability in accordance with MI. Instead, he argues that an ineffable entity is one that possesses what he terms transcategorical intrinsic properties—i.e., properties that transcend human thought and categories (Hick, 2000 p.35). As Hick explains:

> We are concerned with transcategoriality as applied to God – using 'God' as our customary Western term for the ultimate reality to which the religions point. Each of the great traditions says, in its own way, that God in God's ultimate nature is beyond characterization by the range of concepts available to human thought and embodied in our languages. But they balance this by also speaking of God in relation to ourselves as having, in the case of the monotheisms, humanly describable attributes such as personality, goodness, love, compassion, justice, and so on, in virtue of which prayer, worship, and personal devotion are possible (Ibid., p.35).

So, according to Hick, God has a nature—he has intrinsic properties. The problem is these properties are of a sort that we cannot adequately express them or define them using human concepts and categories. In fact, these properties transcend the type of properties that we are accustomed to or in principle capable of understanding or coming to know. I think Hick was right to reject MI and interpret ineffability as an epistemological thesis. Unfortunately, I do not believe Hick successfully articulated his view in the end. Before I explain why, let us consider a key distinction that Hick makes to overcome Alstonian objections to ineffability.

Hick contends that, while we cannot predicate anything regarding God's nature (because it is composed of transcategorial properties that cannot be known), we can, nevertheless, apply some predicates to God. To justify this claim, he makes a distinction

between what he calls *substantial properties* and *formal properties* (Ibid., p.41). As Hick explains it:

> There are what we can call substantial attributes, which would tell us something about what the Godhead in itself is like – for example, that it is personal or that it is impersonal. And there are what I have called formal attributes, which do not tell us anything about what the Godhead in itself is like. Thus for example, that it can be referred to does not give us any information about its nature. Formal attributes are thus trivial or inconsequential in that nothing significant follows from them concerning the intrinsic nature of the Godhead (Ibid. p.41).

A *prima facia* reading suggests Hick's distinction successfully rebuts Alstonian objections. For, given Hick's account, we can indeed positively predicate an F of an ineffable entity *x*. One must remember, however, that on Hick's view any F that we positively predicate of an ineffable entity *x* is a formal property that does not tell us anything substantial about the nature of *x*. The upshot of this is the property 'being ineffable' is a formal property according to Hick's schema. As such, *contra* Alston et al., it is not incoherent to assert that God is ineffable.

In contending that we can refer to God's formal properties, Hick also appears to have adequately responded to Alston's second argument against ineffability. For, *contra* Alston, we can use the term 'God' correctly to refer to the ineffable divinity because, according to Hick, ineffability does not entail God lacks properties. Rather, it entails God has intrinsic transcategorial properties (which cannot be known or stated) *and* formal properties. Alston is, thus, right in saying that to correctly use the term 'God' one would, at least, need to know one of God's properties. It's just that, on Hick's schema, whatever property one knows, that allows the speaker to correctly use the term 'God', is a formal property. As such, it does not tell us anything substantial about the intrinsic nature of God.

Unfortunately, Hick's response to Alstonian objections suffers from ambiguity. Specifically, his distinction between substantial and formal properties is unclear. Hick simply does not outline any clear criteria for distinguishing between substantial and formal properties—aside from noting that any positive predicates being applied to God refer to his formal properties and, hence, do not tell us anything about God's intrinsic nature. Indeed, the process of distinguishing between substantial and formal properties appears to be completely arbitrary or ad hoc.[74] Meaning, there does not appear to be any objective reason for claiming that any given property associated with God, like 'being ineffable', is a formal property and not a substantial property. Rather, it seems as if Hick is merely stipulating that any positive predicate applied to God is a non-substantial or formal property in an effort to rescue the doctrine of ineffability.

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[74] The apparent arbitrariness of Hick's distinction is the primary focus of Plantinga's criticisms of Hick as well. As Lebens explains: "Hick's idea isn't that we can't refer to God, or even that we can't say things about him; his idea is only that we can't attribute non-formal positive properties to him; so Hick has to smuggle in these semantic and epistemic properties under the category of the formal; otherwise he won't be allowed, by his own lights, to refer to, or think about God. One question that Plantinga seems to push is this: is Hick's category of 'the formal' non-arbitrary, or is it ad hoc? We've already seen him sneak semantic and epistemic properties into this category; he also includes the property of *being the cause of religious experience*. What makes that a *formal* property other than the fact that Hick wants God to have it and doesn't want to violate his apophaticism?" (Lebens, 2014 pp.260-1).

Herein lies the problem, once Hick's distinction between substantial and formal properties breaks down his account of ineffability becomes vulnerable to Alstonian objections. Without the substantial-formal distinction, Hick's thesis implies that we cannot predicate anything of God because God is composed of transcategorical properties that, in principle, cannot be known. In this respect, Hick's thesis does not fare any better against Alstonian objections than MI. For if we cannot know any of God's intrinsic properties because they are transcategorial, and if we cannot predicate formal properties of God, then one can successfully run Alston's arguments against Hick. In short, once the substantial-formal distinction breaks down Hick's version of ineffability succumbs to the devastating criticisms of Alstonian objections.

A second significant attempt at designing an Alstonian proof conception of ineffability comes by Jonathan Jacobs. Unlike Hick, Jacobs does not take ineffability to be an epistemological thesis. As he explains,

> The first constraint on my defense [of ineffability] is that it must result in a substantive conception of ineffability, rather than a deflationary one. Apophatic theology is not merely in the business of claiming that God is difficult to describe, that we can conceive of God only with great effort, or that there are some truths about God we cannot comprehend. It is not mere "rhetorical flourish," … The claims are substantive (Jacobs, 2015 p.159).

As this passage indicates, Jacobs takes ineffability to be a substantial metaphysical thesis and not merely a cognitive or linguistic limitation. Unlike Hick, however, Jacobs does not utilise the concept of transcategorial properties. Rather, Jacobs expounds on ineffability with reference to a distinction between fundamental propositions versus non-fundamental propositions. He borrows this distinction from recent work in metametaphysics by Ted Sider (2011) and Kit Fine (2009). To explain the difference between fundamental and non-fundamental propositions, Jacobs—adapting an example originally proffered by Sider—uses an image similar to the following multi-coloured rectangle:
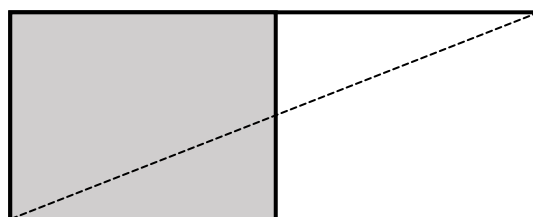
According to Jacobs, we can assert many true propositions about the rectangle, e.g., <The rectangle is half grey and half white>, or <The area of the rectangle that is grey is equal to the area of the rectangle that is white>. These propositions are true in virtue of the fact that they correspond to the objective way the rectangle is actually structured; they, as Plato once stated, "carve nature at its joints". Propositions that are true in virtue of the fact that they correspond to the objective way the world is actually structured are referred to by Jacobs as 'fundamental propositions'.

There is, according to Jacobs, another set of true propositions about the rectangle that do not correspond to the objective way the rectangle is actually structured. To see that this is true, Jacobs asks us to imagine a community that lacks colour concepts such as grey and white and which conceptualises the rectangle as being divided in half from the lower-left corner of the rectangle to the upper right corner (as represented by the dotted line) instead of

being divided down the middle. Moreover, he asks us to imagine this community has a concept for the colour of the upper left half of the rectangle which they denote with the term 'whack' and, likewise, a concept for the lower right half of the rectangle which they refer to with the term 'blite'.

Jacobs maintains that propositions such as <The area of whack is equal to the area of blite> are true in virtue of the fact that they correspond to arbitrarily selected objective areas of the rectangle. Yet, they are not fundamentally true because they do not ultimately correspond to the objective way the rectangle is actually structured, i.e., the actual colours instantiated by the triangle and the way the rectangle is divided into two equal squares. Propositions like, <The area of whack is equal to the area of blite>, that are true yet do not correspond to the objective way the world is structured, Jacbos refers to as non-fundamental propositions.

Jacobs utilises this distinction in an attempt to build a coherent model of ineffability. On Jacobs' account, ineffability amounts to the claim that "every true proposition about how God is intrinsically is non-fundamental," in other words, "there are no true, fundamental propositions about how God is intrinsically" (Ibid., p.165). He proceeds to explicate this account of ineffability the following way (and it is worth quoting him at length here):

> It will be helpful … to introduce the idea of the metaphysics room from Sider. We enter the metaphysics room by stipulating that we intend the things we say to express only fundamental propositions. If there is a fundamental truth near enough to what we mean, then we intend to express that proposition. If there is a fundamental proposition near enough, but its negation is fundamentally true, then we asserted something, but what we asserted is false. If, on the other hand, no fundamental proposition, no perfectly joint-carving proposition, is near enough to what we mean, then we have not asserted anything. By entering the metaphysics room, we agree to limit ourselves in what we can say. We shall assert fundamental propositions, and nothing else.

> If the Ineffability Thesis is true, and we enter the theology room, we can do nothing but remain silent. We could say nothing whatsoever. If we wished to describe God in any way, as loving, merciful, long-suffering, we would have to leave the theology room. We would have to give up on our goal of expressing only fundamental truths. We could not even assert the central doctrines of the Christian faith. God is one in *ousia*, three in *hypostasis*. If the Ineffability Thesis were true, even these would fail to be fundamental truths about God.

> Let the book of the world be the story of the metaphysical structure of reality. It includes all and only the true, fundamental propositions. If we were to write the book of the world, no propositions about how God is intrinsically would appear in it. There is a genuine sense in which the book of the world would be incomplete, were the Ineffability Thesis true (p.166).

A crucial point that Jacobs does not explicitly address is the fact that, if his ineffability thesis is correct, it entails God completely lacks intrinsic properties. Why? Because if God had intrinsic properties, they would be the truth-makers for true fundamental propositions about God. Since, however, there are, according to Jacobs, no true fundamental propositions about God, it follows that God lacks any intrinsic properties. Nevertheless, one can it seems, on Jacobs account, still positively predicate things of God—e.g., that God has the property 'being love' or 'being one *ousia* and three *hypostasis'* or 'being the creator of the universe'. However, as the passage quoted above indicates, these properties are *not* intrinsic to God and, hence, do not ground fundamental truths about God.

It is unclear, however, how one should interpret positive properties predicated of God if she adopts Jacobs' account? To be sure, he explicitly agrees that one can assert true non-fundamental propositions like <God is the creator of the universe>. Furthermore, he believes the truth of such propositions is ultimately grounded in God himself. Does this mean that Jacobs believes God possesses extrinsic relational properties? While he never directly answers this question, it seems to me that for his account to remain coherent he must accept that God exemplifies some non-intrinsic properties (e.g., 'being the creator of the universe') that function as truth-makers for non-fundamental propositions (e.g.,<God is the creator of the universe>). For if Jacobs is not committed to the notion that God possesses non-intrinsic properties (of some kind), his ineffability thesis would amount to being an unnecessarily sophisticated way of restating MI, i.e., the thesis that God does not possess any properties. In which case, his account would ultimately succumb to the dreaded Alstonian objections.

We must, therefore, assume that Jacobs' account can accommodate the notion that God exemplifies some non-intrinsic properties. In other words, Jacobs seems to be committed to a weaker form of metaphysical ineffability. We can define this version as follows:

Weak Metaphysical Ineffability (WMI): For any entity *x*, *x* is ineffable *iff x* does not possess any intrinsic properties.

Given that Jacobs is committed to WMI (or something near enough), and that God exemplifies some non-intrinsic properties, his distinction successfully rebuts Alstonian objections. For, *contra* Alston et al., one can, on Jacob's view, predicate an F of an ineffable entity *x*. It is just that the F we predicate of *x* is not an intrinsic property (because God lacks intrinsic properties and, hence, there are no true fundamental propositions about God's nature). Importantly, the property 'being ineffable' is not an intrinsic property on Jacobs' account. Hence, Jacobs' ineffability is immune to the charge of being self-referentially incoherent. Likewise, because we presumably can, on his account, know some of God's properties—his non-intrinsic non-fundamental properties—we can, *contra* Alston, correctly use the term 'God'. For example, on Jacobs' account, I can correctly use the term 'God' in the sentence "God is the creator of the universe" while consistently remaining committed to the thesis that there are no true fundamental propositions about God's nature.

Unfortunately, Jacobs' account is problematic because it entails atheism. To be fair, Jacobs anticipates this kind of objection and denies that his account entails atheism. He maintains that his account remains neutral regarding whether God exists because it does not entail that it is fundamental that God does not exist. Rather, his account merely entails that the proposition <God exists> is a non-fundamental truth (p.169). I do not, however, find his response very satisfying.

In the example of the rectangle above, the reason one can come to know and assert non-fundamental truths that correspond to arbitrary objective portions of the rectangle is precisely because there exists a rectangle with a certain objective intrinsic nature that people can, in principle, come to have knowledge of. In other words, it is because there exists an object with determinable intrinsic properties—e.g., 'being a rectangle' and 'being divided equally', etc.—that it is possible for a different linguistic community to come to know true non-fundamental propositions about the rectangle. Indeed, while they are not intrinsic properties, properties like 'being blite', etc. are grounded in the intrinsic nature of the rectangle. Yet, if we take Jacob's account of God's ineffability literally (which he

undoubtedly wants us to), then the fact that God is ineffable entails that God lacks any objective intrinsic nature (to say otherwise would mean that, *contra* Jacob's ineffability thesis, there are fundamental truths about God's nature). The problem with this is that this seems to be equivalent to saying God does not exist.

To see why, consider the following scenario. Suppose I asserted proposition P14 is true:

P14: There exists an ineffable rectangle.

Given Jacobs' ineffability thesis, this entails that there exists a rectangle of which there are no true fundamental propositions and, consequentially, that the rectangle does not exemplify *any* intrinsic properties, e.g., it neither possesses the property 'being a plane figure' nor, 'being composed of four straight lines', nor 'being configured with unequal adjacent sides'. If it did possess intrinsic properties these would serve as truth-makers for fundamental propositions about the rectangle; and, hence, it would not be ineffable. Taking all this into consideration, it just seems like P14 is equivalent to the proposition <There exists nothing>. I wish to be charitable, however. So, let us assume, for the sake of argument, P14 is not equivalent to <There exists nothing>.

We are still left with an important question: *What is the truth-maker for P14?* Jacobs may retort that the ineffable rectangle exemplifies non-intrinsic properties that function as truth-makers for the proposition that it exists. Perhaps, for example, the ineffable rectangle bears non-intrinsic properties like 'being whack', and 'being blite', and 'being configured such that the area of whack is equal to the area of blite'. We could then say P14 is non-fundamentally true because it corresponds to non-intrinsic properties of the ineffable rectangle. Herein lies the problem. What grounds these non-intrinsic properties? If we respond by saying "they are grounded in the ineffable rectangle", what exactly does this mean? For an ineffable rectangle is not any kind of thing with a determinable intrinsic nature. It sounds like, therefore, we are saying "the properties 'being whack', and 'being blite', and 'being configured such that the area of whack is equal to the area of blite' are grounded in nothing".

Perhaps, Jacobs could respond by maintaining that these non-intrinsic properties are fundamental in the sense that they are well-founded, i.e., they are not grounded in anything numerically distinct from themselves. Aside from this view being wildly implausible, it does nothing to solve the problem at hand. For if these non-intrinsic properties are ungrounded, then there is no entity, no ineffable rectangle, ontologically supporting them. If, however, this is the case (and it is difficult to see any other option), then we clearly cannot consistently sustain the claim that these properties act as truth-makers for P14.

Likewise, in claiming that God is ineffable and, thus, does not possess an intrinsic nature, Jacobs is ultimately making the equivalent claim that there are no truth-makers for the proposition <God exists>. It is no good to argue, as Jacobs does, that the ineffable God exemplifies non-intrinsic properties such as 'being the creator of the universe' and 'being one *ousia* and three *hypostasis*' and that these make the proposition <God exists> non-fundamentally true. For, just as above, one can ask: *What grounds God's non-intrinsic properties?* Jacobs could respond by saying "non-intrinsic properties like 'being the creator of the universe' are grounded in God". Responding in this way, however, is no good because

it is equivalent to saying, "God's non-intrinsic properties are grounded in nothing". I do not see how Jacobs can get around this. For if he claims that God is something—i.e., that God has an intrinsic nature that grounds his non-intrinsic properties—this will undermine his ineffability thesis (because God's intrinsic nature would act as a truth-maker for fundamental propositions about God). Accordingly, it seems that on Jacobs schema there ultimately is no truth-maker for the proposition <God exists>; ergo, it is a false proposition and atheism is true. It almost goes without saying that if Jacobs ineffability thesis unavoidably entails atheism, then it hardly matters if one thinks it successfully rebuts Alstonian objections. Presumably, the theist looking for a coherent account of divine ineffability would prefer one compatible with the existence of God!

In summary, MI and weaker forms of MI (like WMI) are extremely difficult theses to defend. Indeed, if my analysis is correct, contemporary attempts at maintaining some version of metaphysical ineffability, in the face of Alstonian objections, have not been successful. Fortunately, MI is not the version of ineffability traditionally espoused by apophatic theists; and it is not the version of ineffability I defend in this dissertation. While Hick's account of ineffability ultimate succumbed to the devastating Alstonian objections, I believe he was on the right track trying to articulate ineffability as an epistemological thesis rather than a metaphysical one. Indeed, a brief look at Eastern Christian proponents of ineffability reveal that, historically, apophatic theists have advocated *epistemic ineffability*.

7.2. Epistemic Ineffability

Mullins is correct when he points out that the most prominent Christian proponents of ineffability, apophatic theists such as St John of Damascus and Pseudo-Dionysius, spilt a lot of ink writing about God's various properties. However, he is wrong to think these great theologians are hypocrites. The reason Mullins is wrong on this point is that none of these thinkers are proponents of MI or some weaker version of MI like WMI. On the contrary, they are proponents of what I refer to as *epistemic ineffability* (EI). As Henny Fiskå Hägg confirms:

> In the theology of the Greek Fathers and of Eastern Orthodoxy generally the question whether, or in what sense, man can know God is of primary importance. Christian apophaticism, or Christian apophatic theology, may be seen as a response to this question. In the Greek Orthodox tradition the primary way of approaching the divine is through negation (Gr. *apophasis*), not affirmation (Gr. *kataphasis*). What is denied or negated, then, is the possibility both to know and to express the divine nature: God is both greater than, and different from, human knowledge and thought. It also follows that human language is incapable of expressing him (Hägg, 2006 p.1).

What Hägg is contending is that the Eastern Christian tradition does not take ineffability, and apophatic theology, to be a substantial metaphysical thesis. Rather, it takes it to be an epistemological thesis according to which it is impossible to come to know God's essence or nature. Even just a cursory look at some of the foremost Eastern Christian proponents of apophatic theism support Hägg's comments. Consider, first, this fantastic quote from the prolific third century genius Origen of Alexandria:

> … God is incomprehensible and immeasurable. For whatever it is that we are able to sense or know of God, it is necessarily to be believed that he is by many degrees far better than what we perceive him to be. Just as, if we were to see someone scarcely able to bear a spark of

light, or the light of a very small lamp, and if we wish to acquaint such a one, whose eyesight is not strong enough to bear more light than what we have said, with the brightness and splendour of the sun, would it not be necessary for us to tell him that the splendour of the sun is unspeakably and immeasurably better and more glorious than all this light which he saw? So also our mind, when shut in by the fetters of flesh and blood … when it strives after bodiless things and searches for a glimpse of them, it scarcely has room for some spark or small lamp. For what, among all intellectual, that is, bodiless beings, is so superior to all others, so unspeakably and immeasurably superior, as God, whose nature assuredly the vision of the human intellect is not able to grasp or see … (Origen of Alexandria 2019, originally 229, p.16).

It is manifestly evident that Origen is not claiming God lacks properties. Origen is, rather, arguing that human beings simply lack the cognitive capacity to know God's nature. He is, therefore, arguing that human beings have an epistemological limitation when it comes to God's essence. To be sure, Origen believes it is due to the fact that God is incorporeal and radically transcendent that human beings cannot come to know the divine essence. Yet, this is not the same as saying that God lacks properties or that God instantiates some mysterious property 'being ineffable' or 'being composed of transcategorial properties'.

Examples like that of Origen abound in the writings of the Greek Father's. Consider this passage from St Athanasius:

God, who has dominion over all, when he made the race of men through his own Word [*logos*] saw that the weakness of their nature was not capable by itself of knowing the Creator or of taking any thought of God, in that he was uncreated, whereas they had been made from nothing, and he was incorporeal, but men had been fashioned here below with a body, and he saw the creatures' complete lack of understanding and knowledge of him who made them (Athanasius 2004, originally 335, p.161).

As with Origen, Athanasius predicates many things of God, e.g., God is said to possess the properties 'having dominion over all', and 'being the maker of the race of men', and 'being uncreated', and 'being incorporeal'. So, it is evident that he does not believe God lacks any properties. Rather, ineffability, for Athanasius, has to do with a weakness in humanities nature. Echoing Origen, St Athanasius believes humanity is incapable of coming to know what God is because human beings were made from nothing and have a body, i.e., are material or physical entities. The assumption here seems to be that human beings are in principle capable of grasping the essences of created physical entities—like trees, fish, and planets—but, in principle incapable of grasping the nature of the uncreated divinity.

We see this same pattern of thinking in the highly influential writings of Pseudo-Dionysus as well. For example, he maintains that:

… the inscrutable One is out of the reach of every rational process. Nor can any words come up to the inexpressible Good, this One, this Source of all unity, this supra-existent Being. Mind beyond mind, word beyond speech, it is gathered up by no discourse, by no intuition, by no name. It is and it is as no other being is. Cause [i.e., ground] of all existence, and therefore itself transcending existence, it alone could give an authoritative account of what it really is (Pseudo-Dionysus, 1987 originally 5th-6th century, p.50)

In this passage, Dionysus maintains God is out of reach of every rational process. Thus, for him, the ability to come to know what God is—i.e., God's essence—is beyond even *a priori* reasoning. In other words, for Dionysus ineffability is not merely concerned with the fact that

human beings cannot directly observe God and, thus, have *a posteriori* knowledge of his essence. Rather, for him, ineffability is the much stronger thesis that it is epistemically impossible for humanity to know what kind of entity God is. Indeed, for him, only God is in principle capable of knowing his own essence. In spite of arguing for this cognitive limitation in humanity, Dionysus still lists a number of God's properties, e.g., he claims that God has properties such as 'Being Good', 'Being the source of all unity', 'Being Mind', 'Being the ground of all existence', etc. It is, thus, clear that he is thinking of ineffability as an epistemological doctrine and not as a metaphysical doctrine (because he believes God has properties that can, in principle, be known).

Virtually all the Greek Father's make statements like these, regarding humanities inability to come to know God's nature. For the sake of brevity, however, I will close this section with a passage from St John of Damascus's influential work *The Fount of Knowledge*. St John is a significant figure because he is responsible for compiling and summarising the first 700 years of Greek Patristic thought. Accordingly, his thinking on ineffability is truly representative of the apophatic tradition that Eastern Christians are beholden to:

> Now, one who would speak or hear about God should know beyond any doubt that in what concerns theology and the Dispensation not all things are inexpressible and not all are capable of expression, and neither are all things unknowable nor are they all knowable. That which can be known is one thing, whereas that which can be said is another, just as it is one thing to speak and another to know. Furthermore, many of those things about God which are not clearly perceived cannot be fittingly described, so that we are obliged to express in human terms things which transcend the human order … (John of Damascus 1958, originally 743, pp.166- 67)

Later in his discourse, he asserts the following:

> Thus, it is clear that God exists, but what He is in essence and nature is unknown and beyond all understanding. That He is without a body is obvious, for how could a body contain that which is limitless, boundless, formless, impalpable, invisible, simple, and uncompounded? … All this, however, is by no means indicative of His essence—no more than is the fact of His being unbegotten, without beginning, immutable, and incorruptible, or any of those other things which are affirmed of God or about Him. These do not show what He is, but, rather, what He is not. One who would declare the essence of something must explain what it is, but not what it is not. However, as regards what God is, it is impossible to say what He is in His essence, so it is better to discuss Hum by abstraction from all things whatsoever. For He does not belong to the number of beings, not because He does not exist, but because He transcends all beings and being itself." (Ibid., pp.170-72)

To be sure, much more needs to be said to unpack the traditional apophatic theist's conception of ineffability fully. It is clear apophatic theists believe it is impossible to come to know God's essence, yet possible to know many of God's properties. However, it is unclear how one should interpret these assertions. A lot more must be said, especially regarding what conception of properties is at play here. I will, however, withhold this discussion for the moment and pick it back up in Chapter 8.

At present, it is important to explicitly define the conception of epistemological ineffability being advocated by the ancient thinkers above. I propose the following definition:

Epistemic Ineffability (EI): For any entity *x*, *x* is ineffable *iff* it is epistemically impossible to know *x's* essence (i.e., to know what kind of entity *x* is or to define *x*).

Fortunately, EI is not vulnerable to Alstonian objections because it is not making the substantial metaphysical claim that an ineffable entity lacks any properties or lacks any intrinsic properties; neither is it claiming that an ineffable entity instantiates some mysterious property of 'being ineffable'. Furthermore, it is clear from the passages above that apophatic thesists do believe they can know many of God's properties. Ergo, Alstonian objections simply do not apply to EI as long as I can provide a successful account of these properties. Recall that once Hick's distinction between subnational and formal properties broke down, his epistemic ineffability succumbed to the Alstonian objections. In Chapter 8, I developed an account of God's properties inspired by the apophatic thinkers quoted above.

Presently, however, I will turn my attention to defending the proposition that *logos* is epistemically ineffable.

7.3. The Ineffability of Logos

In this section, I argue that the ineffability of *logos* follows logically from the ontological distinctness of *logos*.[75] Recall that, in Chapter 6, I established that *logos* is the fundamental ground of the universe's order and, as such, is (among other things) an ontologically distinct entity. It is crucial to understand that apophatic theists take properties like 'being ontologically distinct' to be negative properties. Negative properties do not positively state what kind of thing an entity is; rather, they merely tell us what kind of thing it is not. They are not qualities that an entity possesses but, rather, qualities that an entity does not instantiate. If one comes to know that an entity does not instantiate a property, she is, indeed, coming to know something about that entity (namely, what kind of thing it is *not*). To come to know its essence, however, she must come to know something regarding what kind of thing it is. As St John of Damascus affirmed in the quote above, "one who would declare the essence of something must explain what it is, but not what it is not" (Ibid., p.172).

Suppose you asked me the following question, 'What is a triangle?' and I responded by stating, "A triangle is not a square; it does not have four sides'. I suspect you would not be impressed with my answer. The reason you would not be impressed is because, while it is true that triangles are not squares and do not have four sides, this statement does not tell you what kind of entity a triangle is—which is, precisely, the information you were seeking when you asked the question.

For apophatic theists, the property 'being ontologically distinct' is a negative property. Saying that *logos* is ontologically distinct is equivalent to saying it neither exemplifies the property 'being part of the universe' *nor* 'being numerically identical to the universe', and the universe does not instantiate the property 'being a part of *logos*'. What follows from this (as I argued in Chapter 6) is that *logos* is *not* a physical-ordered entity. I argued for this on the basis that *logos* is the ground of the universe's order and, thus, could not be part of or identical to the universe without violating the formal features of ground.

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[75] Unless I explicitly say otherwise I use the term ineffability as it is defined by EI through the remainder of this thesis.

Given, therefore, that *logos* is ontologically distinct one can develop the following argument for its ineffability.

7.3.1. The Argument for Ineffability from Ontological Distinctness

The Argument for Ineffability from Ontological Distinctness (AIOD) can be formulated as follows:

> *Argument for Ineffability from Ontological Distinctness (AIOD)*
>
> (1) It is epistemically impossible to know the essence of an ontologically distinct entity (i.e., to know what kind of thing an ontologically distinct entity is).
>
> (2) *Logos* is an ontologically distinct entity.
>
> (3) Therefore, it is epistemically impossible to know *logos's* essence (i.e., to know what kind of thing *logos* is).

In Chapter 6, I provided reasons for believing premise (2) of AIOD is true; so, I will not re-present these arguments here. I will, instead, focus my attention on proffering support for premise (1).

One, less controversial, way to support the truth of premise (1) is simply to make the intuitive claim that our cognitive faculties are only aimed at coming to know the essences of physical-ordered entities—e.g., entities like solar systems, stars, planets, ecosystems, rocks, trees, cells, etc—and not aimed at coming to know the essence of an ontologically distinct entity. To be clear, I am not claiming it is easy to come to know a physical entity's essence; nor that we have come to know the essences of very many physical entities. Rather, I am simply saying that we are embedded in the universe—we are, ourselves, physical entities—and millions of years of biological evolution has tailored our cognitive faculties to come to know and understand the physical universe that we are a part of. Our cognitive faculties are simply not equipped for coming to know what an entity that is not part of or numerically identical to the physical universe is.

There is, however, another way to support premise (1) of AIOD that relies on the substantial metaphysical claims I have defended throughout this thesis. Specifically, I have in mind the *order-based* conception of the physical I outlined in Chapter 3 and the notion of essential order that I developed in Chapter 5.

Recall that essential order is defined as follows:

> Essential order: An entity, *x's*, order *o* is essential *iff* : (i) *o* obtaining is both a necessary and sufficient condition for the existence and persistence of *x*, i.e., should *o* fail to obtain, *x* would cease to exist, and (ii) *o* obtaining determines what type of entity *x* is.

I contend that when one ordinarily talks of an entity, *x*, having an essence, she is referring to *x's* essential order; and, *x's* essential order acts as its definitional content or as a truth-maker for propositions that express what kind of entity *x* is. To return to the example I explicated in Chapter 5, it is commonly believed that the essence of a water molecule can be expressed with the following definition: <an entity, *x*, is a water molecule *iff x* is composed of two hydrogen atoms and one oxygen atom arranged in a tetrahedral shape with a bond angle of

104.5 degrees>. What I am arguing is this: if this definition is true, it is made true by the fact that certain physical entities—which we refer to as 'water molecules'—exemplify a specific type of essential order; namely, they exemplify the relation 'being composed of two hydrogen atoms and one oxygen atom arranged in a teterahedral shape with a bond angle of 104.5 degrees'.

If I am correct, this has important implications for the topic at hand. It means that typically when one claims to know an entity, *x's*, essence this is equivalent to saying that she has come to know *x's* essential order. Or, slightly more formally: when a knowledge seeker, *S*, comes to know some physical entity, *x's*, essence (i.e., what kind of entity *x* is), *S* has come to know how *x* is essentially ordered. To see this, return to the example of the water molecule *w*. To say that *S* has come to know *w's* essence is equivalent to saying that *S* has come to know how *w* is essentially ordered, i.e., it is equivalent to saying *S* has come to know that *w* is composed of two hydrogen atoms and one oxygen atom arranged in a tetrahedral shape with a bond angle of 104.5 degrees. My contention, therefore, is that for human beings, the process of coming to know an entity's essence involves coming to know how it is essentially ordered.

If I am correct this lends even more credence to the intuition that our cognitive faculties are not designed to grasp the nature of an ontologically distinct entity. The reason being an ontologically distinct entity does not exemplify any quantifiable relations conforming to ordering principles that our minds can grasp and understand and define. For this reason, its essence is inscrutable, incomprehensible, undefinable, and beyond all understanding, i.e., it is epistemically impossible to come to know its essence.

7.3.2. Negative properties and the concept of ineffability

It is prudent to close this chapter with a few final words regarding how apophatic theists interpret negative properties. As I explained at the beginning of this section, the term 'negative property' is somewhat of a misnomer because it does not refer to properties, *per se*, but rather refers to properties that a given entity does not instantiate. To get your head around this consider the following example. When I assert the proposition <My daughter is *not* dyslexic>, I am not predicating of my daughter the attribute 'being not-dyslexic'. Rather, I am simply saying that my daughter does *not* exemplify the property 'being dyslexic'. Likewise, when the apophatic theist asserts that *logos* is ineffable, she is not predicating something of *logos*. On the contrary, she is merely saying that *logos* does not exemplify the property 'being such that it is epistemically possible to come to know its essence'. This reveals that apophatic theists interpret ineffability to be a negative property.

One worry about negative properties is that it seems as if apophatic theists are arbitrarily stipulating that certain of *logos's* properties are negative. Fortunately, this is not the case. Apophatic theists adhere to the following basic rule: *any property predicated of the universe can be negated of logos*. So, for example, if the universe exemplifies the property 'being subject to change', then one can say that *logos* does not exemplify the property being subject to change (i.e., one can say that *logos* is unchanging). If the universe instantiates the property 'being temporal' then one can say of *logos* that it does not instantiate the property 'being temporal' (i.e., one can say that *logos* is atemporal), and so forth. They follow this rule because of arguments—like the ones I proffered in Chapter 6—which show that *logos* is ontologically distinct.

Importantly, this process—in which one systematically denies that *logos* instantiates any property predicated of the universe—only applies to *univocal* properties. For example, when one says that the universe exemplifies the property 'being subject to change' and an apophatic theologian says "*logos* does not exemplify the property 'being subject to change'", she means that *logos* is not subject to change *in the same sense that the universe is subject to change*. Clearly if *logos* is ontologically distinct, and thus a non-physical, non-ordered, uncomplex entity, it cannot be the case that *logos* is subject to change in the same sense that a physical entity is subject to change.

I will close this section with a controversial assertion: apophatic theists do believe that *logos* exemplifies essential properties that can, indeed, be known. In my development of *Stage Two* of the eutaxiological argument, I have argued that *logos* exemplifies properties like 'being the fundamental ground of the set of all logically possible ordering principles', and 'being the fundamental ground of the order and existence of the universe from nothing'. I take these to be essential properties. The notion that an ineffable entity, however, exemplifies essential properties that can be known seems to be logically incoherent. So, I need to do some work to explain how an apophatic theist can coherently maintain this view. I address this apparent contradiction in Chapter 8.

Conclusion

The aim of this chapter was threefold. First, I expounded on the contemporary conception of ineffability and showed why it is such a controversial thesis. In Section 7.1., I showed that the contemporary dialect almost exclusively surrounds the concept of *metaphysical ineffability* (MI). According to MI, God lacks any properties and, hence, we cannot predicate anything of God. I explained that MI is widely rejected by contemporary philosophers of religion due to Alston's formidable arguments against this view, which I referred to as Alstonian objections. I closed this section by considering two of the most significant contemporary attempts at defending ineffability; namely, the accounts of ineffability proffered by Hick and Jacobs. I concluded that, unfortunately, their accounts of ineffability ultimately do not succeed.

The second aim of this chapter was to outline the conception of ineffability classically held by Eastern Christian proponents of apophatic theism. In Section 7.2, I argued that the Eastern Christian tradition did not conceive of ineffability as a substantial metaphysical thesis, according to which God lacks properties or instantiates some mysterious property of ineffability. Instead, they conceived of ineffability as an epistemological thesis according to which it is epistemically impossible to come to know *logos's* essence. I referred to this conception as epistemological ineffability (EI). I noted that unlike MI, EI is not vulnerable to Alstonian objections so long as I can provide a coherent account of *logos's* essential properties.

The third and final aim of this chapter was to develop an argument for the conclusion that *logos* is ineffable. To that end, in Section 7.3. I defended the Argument for Ineffability from Ontological Distinctness (AIOD). In my defence of AIOD, I showed that our cognitive faculties are incapable of coming to know the essence of an entity that does not exemplify quantifiable relations conforming to ordering principles. In Chapter 8 I round out this discussion by developing a model of apophatic theism that explains what *logos's* essential properties are, that is consistent with Christian dogmatic teaching about the nature of God.

Chapter 8: Apophatic Theism and Christian Theology

In Chapter 7 I showed that *logos* is epistemically ineffable. Importantly, I also demonstrated that epistemic ineffability is not vulnerable to Alstonian objections as long as I can provide a coherent apophatic account of *logos's* properties. While I did some work explaining the concept of negative properties, it is still unclear how an apophatic theist interprets properties like 'being analogous to a mind' or 'being the fundamental ground of the universe's order-existence from nothing' which I have predicated of *logos* during the course of explicating *Stage Two* of the eutaxiological argument.

Additionally, I made the rather audacious claim, in the introduction to this thesis, that apophatic theism is logically compatible with Christianity. Yet, this seems demonstrably false. For Christian dogmatic theology appears to affirm that we can know many of God's essential properties. If this is true, how can a Christian theologian consistently hold that God is ineffable in the sense that apophatic theists do? For it seems like the Christian apophatic theist is asserting the following contradiction is true:

P12: It is both possible and impossible to know *logos's* essence.

In this chapter I address these problems. More specifically, I explain how apophatic theists ought to conceive of positive predicates of *logos* and show that apophatic theism is logically compatible with Christian theology. I do this by building a model inspired by the Greek Patristic tradition and, especially, the work of St Gregory Palamas.[76] The model I explicate is based on two key metaphysical distinctions derived from real essentialism. Real essentialism is merely the contemporary name for classical thinking about essences. The first key distinction, which I discuss in Section 8.1., is between an entity's *essence* (i.e., what kind of thing it is) and its properties. This distinction may strike the contemporary reader as very odd but is, I maintain, a coherent view. The second key distinction, which I expound on in Section 8.2., is a distinction between an entity's *essence* and its *energies* (i.e., its activities). Utilising these metaphysical distinctions, I construct a coherent model, in Section 8.3., that both explains what kind of properties we can predicate of *logos* and that reconciles the supposed inconsistency of ineffability with Christian theology.

8.1. Real Essentialism and the Essence-Properties Distinction

Real essentialism is merely the traditional or classical approach to essentialism. As Oderberg explains:

> By 'traditional' I mean, somewhat tendentiously, to qualify that method of thinking and those doctrines which, despite occasional interludes and conflicting interpretations, embodied the prevalent school of philosophy for nearly two thousand years. That is the school of Aristotelianism and its followers … (Oderberg, 2008 p.x).[77]

While Oderberg does not explicitly mention this in his work, the two thousand years of history he refers to in this passage encompasses Eastern Christian thinkers as well as Western. To be sure, Greek Patristic proponents of apophatic theism—e.g., figures such as St Maximus the Confessor, St John of Damascus, and St Gregory Palamas—were all students

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[76] A lot of material from this chapter is adapted from Brown (2017).
[77] For other contemporary exponents of what I have labelled real essentialism see Clarke (2001) and Groarke (2009).

of Middle-Platonic and Neoplatonist philosophy (which, despite their namesake, were heavily influenced by Aristotelianism). Consequentially, their apophatic theology was formed and articulated utilising the real essentialist conception of properties and, therefore, can only be understood in this context.

Before, however, I outline the distinction that real essentialists make between the essence of an entity and its properties (or *propria*), it is helpful to briefly outline the predominate form of essentialism espoused by theistic personalists. Doing so will help me to clarify further why apophatic theism—and its commitment to ineffability—is so heavily resisted by many contemporary philosophers. It will also help me to explain better how real essentialism differs from the form of essentialism commonly espoused by contemporary philosophers of religion.

Recall that theistic personalism, at a bare minimum, requires a commitment to the following thesis:

> Theistic personalism *simpliciter* (TPS): there exists a person, P, such that necessarily, P possesses the maximal-person properties (i.e., omnipotence, omniscience, and omnibenevolence) simultaneously.

Proponents of theistic personalism include the likes of Richard Swinburne, who in his influential book *The Existence of God,* defines God as follows:

> I take the proposition 'God exists' (and the equivalent proposition 'There is a God') to be logically equivalent to 'there exists necessarily a person[1] without a body (i.e. a spirit) who necessarily is eternal, perfectly free, omnipotent, omniscient, perfectly good, and the creator of all things'. I use 'God' as the name of the person picked out by this description (Swinburne, 2004 p.7).

Swinburne includes some additional attributes in this description (e.g., God 'being eternal', 'being incorporeal', etc.) but TPS lies at the heart of his conception of God. For Swinburne, 'God' is a proper name that denotes a person necessarily composed of the maximal-person properties. Alvin Plantinga, another towering figure in contemporary analytic philosophy of religion, also espouses this conception of God:

> Now central to the great monotheistic religions—Christianity, Judaism, Islam—is the thought that there is such a person as God: a personal agent who has created the world and is all-powerful, all-knowing, and perfectly good. I take naturalism to be the thought that there is no such person as God, or anything like God. Naturalism is stronger than atheism: you can be an atheist without rising to the full heights (sinking to the lowest depths?) of naturalism; but you can't be a naturalist without being an atheist (Plantinga, 2011 p.ix).[78]

Again, setting aside the additional property 'being the creator of the world' included here, it is evident that theistic personalism is the conception of God that Plantinga takes to be central to all three of the great Abrahamic religious traditions.

The reason I have taken time to mention Swinburne and Plantinga is that they have both been heavily influenced by the revival of essentialist thinking ushered in by Saul Kripke and Hilary Putnam in the 1970s. I refer to this conception of essentialism as *modal essentialism*: the idea that an essence is a bundle of properties or qualities exemplified by an

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[78] Plantinga also famously defends theistic personalism in his seminal work *Warranted Christian Belief* (2000).

entity in all possible worlds. It is modal essentialist thinking that informs Swinburne and Plantinga's explication of theistic personalism. Indeed, it seems that virtually all proponents of theistic personalism conceive of God in modal essentialist terms.[79] Which is to say, they take God to be a complex bundle of properties (i.e., maximal-person properties) exemplified in all possible worlds. On this understanding, coming to know God's essential properties is synonymous with coming to know God's essence.

Given this metaphysical framework, apophatic theism's assertion that we can know *logos's* essential properties, but we cannot know his essence is straightforwardly incoherent. For, on a modal essentialist reading, this is equivalent to saying:

P12: It is both possible and impossible to know *logos's* essence.

Aside from the factors I discussed in Chapter 7—namely, the contemporary focus on metaphysical ineffability and the formidable Alstonian objections facing this view—it is theistic personalism's commitment to modal essentialism that makes its proponents averse to the prospect that God is ineffable for the simple reason that it entails a contradiction (as evidenced by P12). Modal essentialism, however, is a relatively recent philosophical innovation and, as I have already pointed out, it is not the version of essentialism historically held by apophatic theists.

If, however, one wants to understand the apophatic theist's claim that one can know God's essential properties, without knowing his essence, she must first understand how a real essentialist conceives of 'properties'. From a real essentialist perspective, the essence of an entity—i.e., what kind of thing an entity is—is distinct from its properties. As Oderberg states, "No property of a thing is part of a thing's essence, though properties flow from the essence." W. Norris Clarke, another proponent of real essentialism, explains that a property is, "An attribute or characteristic of something that does not signify the essence itself of the thing but something that follows immediately from the essence and is necessarily connected with it" (Clarke, 2001 p.319). Unlike modal essentialism, therefore—which views properties as *part* of the essence itself—real essentialism does not consider a property to be part of the essence of a thing. As should be evident, then, on real essentialism, one can coherently claim that she knows God's properties but does not know God's essence.

There are, however, a lot of details about this conception of essences and properties that need to be filled out. In the following section, I proffer my own, more detailed, version of the essence-properties distinction that is heavily inspired by the real essentialist thinking one finds in the writings of the Greek Fathers but which utilises the *order-based* account of the physical outlined and defended in this dissertation.

8.1.1. A closer consideration of the essence-properties distinction

I take it that when one typically talks about an entity's essence, she is referring to its *essential order*. We can define essential order as follows:

Essential order: An entity, *x's*, order *o* is essential *iff* : (i) *o* obtaining is both a necessary and sufficient condition for the existence and persistence of *x*, i.e., should *o*

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[79] For a brief history of this development in contemporary philosophy of religion see Richards (2003).

fail to obtain, x would cease to exist, and (ii) o obtaining determines what type of entity x is.

To better grasp this definition, consider once again the water molecule. For any given water molecule, w, its parts stand in a quantifiable relation conforming to the following ordering principle: 'two hydrogen atoms and one oxygen atom bonded in a tetrahedral shape with a bond angle of 104.5 degrees'. We can simply refer to this ordering principle as 'water-type$_1$'. The instant w's parts fail to stand in a quantifiable relation conforming to water-type$_1$, w ceases to exist. I showed this to be true in Chapter 6 using the thought experiment in which Thanos snaps his finger and, instantaneously, re-configures w's parts to conform to a different ordering principle, e.g., 'water-type$_2$'. This experiment showed that some of the order that obtains in a water molecule is essential for its existence and for its continued persistence as a specific type of entity. I take it that the term 'essence' is equivalent to the term 'essential order'. Importantly, w's essential order is its definitional content. Which is to say, its essential order is the truth-maker for propositions defining what kind of entity w is.

According to this schema, therefore, the term 'essence' refers to those quantifiable relations conforming to ordering principles that must obtain for a physical entity, x, to exist and which determine what kind of entity x is. Properties, on the other hand, are attributes or qualities that flow forth from or are grounded in the activities of a particular entity. Consequentially, properties cannot exist apart from the particular entities that ground them; and there being instantiated is neither a necessary nor sufficient condition for the existence and persistence of the entity that grounds them. According to this view, therefore, whether an entity, x, exemplifies properties a, b, or c, has no bearing on whether x exists.

Broadly speaking, properties can be divided into two main categories: *essential properties* and *accidental properties*. We can define an essential property as follows:

Essential Property: An attribute or quality, p, is an essential property *iff*: (i) p can only be instantiated by a particular kind of entity (i.e., by entities in which a particular essence obtains), and (ii) p being instantiated is neither a necessary nor sufficient condition for the persistence of the entity.

This may strike many readers as being an idiosyncratic view of essential properties, because given modal essentialism an essential property is part of an entity's essence. As I explained in Section 8.1., however, real essentialists make a distinction between an 'essence' (what I am calling an entity's 'essential order') and a property.

To understand this better, let us consider the singer-songwriter Jon Foreman as an example. Following the traditional terminology, the essence (or essential order) that obtains in Jon Foreman is that of a rational animal. In addition, however, to possessing the essence of a rational animal, Jon Foreman instantiates many essential properties which are grounded in his activities. For example, Jon Foreman exemplifies the properties 'being a musician' and 'being a songwriter'. On the real essentialist view, 'being a musician' is *not* Jon Foreman's essence. For there is a possible world, W_1, in which Jon Foreman is not a musician, but rather a scientist. In W_1 Jon Foreman possesses the same essential order—i.e., he is still a 'rational animal'—but does not exemplify the property 'being a songwriter'. Properties like 'being a musician' and 'being a songwriter' are, nevertheless, essential properties. Indeed, it is only entities in which the essential order of a rational animal obtains who bear properties like 'being a musician'. As far as I am aware, other animals like dolphins, orangutans, and cows, do not play guitars and compose songs. It is in virtue of the fact that these properties are strictly characteristic of rational animals that we call them essential properties.

Jon Foreman, however, exemplifies other properties that are not strictly characteristic of rational animals. For example, he exemplifies properties like 'being a mammal', 'being blond', and 'being from San Diego California'. There are, of course, many different non-rational animals that bear the property 'being a mammal' and that bear the property 'being blond'—e.g., golden retrievers and blonde zebras—and numerous discrete entities—e.g., surfboards and fish tacos—that come from San Diego California. Likewise, if Jon Foreman failed to instantiate these properties, he would still exist and still be a rational animal. In virtue of the fact that these properties are *not* strictly characteristic of rational animals, and do not contribute to the existence of the entities that exemplify them, we refer to them as accidental properties. We can, thus, define accidental properties as follows:

> Accidental Property: An attribute or quality, *p*, is an accidental property *iff*: (i) *p* can be instantiated in entities of different types (by entities with different essences), and (ii) *p* being instantiated is neither a necessary nor sufficient condition for the persistence of the entity.

A lot more can be said about the real essentialist account of properties I just canvassed. However, it is beyond the scope of this chapter to proffer a complete exposition and defence of this form of essentialism. I have, however, provided enough details to show that it is both a coherent and intuitive theory of essences and properties. Importantly, on this theory, it is possible for one to come to know an entity's essential properties without having come to know its essence. For example, it is possible for one to know that one of Jon Foreman's essential properties is 'being a singer-songwriter' without knowing that Jon Foreman is a rational animal.

Before, however, I utilise the essence-properties distinction to respond to the allegation that apophatic theism is incompatible with Christian dogma, we must first turn our attention to another key metaphysical distinction: the essence-energies distinction.

8.2. The essence-energies distinction

The Greek word, *energeia* (activity or operation), was coined by Aristotle and further developed by his commentators and Christian theologians. Throughout its history it has taken on a diverse, but close knit, range of meanings. Its most important usage, for our purposes, came when St Gregory Palamas appropriated the term to synthesize several seemingly disparate elements of Patristic theological reflection.[80] Some of these elements we have already discussed: e.g., apophaticism regarding God's essence and the insistence that we can come to know God and make cataphatic statements about his essential properties. Unmentioned thus far, however, is the Patristic belief in God's real presence pervading all of creation, and the notion that human beings can participate in God. It is all these elements that St Gregory seeks to draw together and explain through the use of the term *energeia.*

Primarily, St Gregory uses the term in the same way as Aristotle and his predecessors; namely, to signify the characteristic activities, powers, or operations of an essence. To get your head around this, let us return once again to the example of Jon Foreman. There is a difference between what kind of entity Jon Foreman is (i.e., his essence) and the range of activities he engages in (i.e., his energies). Having the essence of a 'rational animal' is not the same thing as, the act of 'playing the guitar' or the act of 'composing a song' or the act of

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[80] For a historical overview of the term 'energeia' see Bradshaw (2004).

'performing a song' (which are the kind of acts Jon Foreman regularly engages in). According to real essentialism, an entity's essence determines the range of possible activities it can engage in. For example, you will never experience Jon Foreman engaging in the act of 'spewing venom out of his mouth' or 'biting prey with his fangs' because human beings (unlike Spitting Cobras) do not have the natural power to engage in such activities due to the way they are essentially ordered.

An entity's energies, thus, ground many of its properties. As I write these words, I am engaging in the act of philosophizing. Engaging in this act grounds the essential property 'being a philosopher' I exemplify. Likewise, when Jon Foreman engages in the act of composing and performing songs, this grounds the essential property 'being a singer-songwriter' that he exemplifies. According to St Gregory, all actually existing entity's, engage in activities and, in so engaging in these activities, reveal their existence and properties to knowledge seekers. I know water molecules exist and know many of their essential properties because they engage in regular characteristic activities like dissolving substances and evaporating when heated. I know Jon Foreman exists and many of his essential properties because he engages in numerous activities like composing and performing songs, writing blogs, and giving interviews on the radio and television.

The last point highlights the fact that when one participates in an entity, *x's*, energies she directly participates with *x*. Imagine I am playing football with my son and, in an unusual moment of skill, kick the ball into the goal and score a point. Clearly, in this scenario, *I* am the one kicking the football; and, therefore, the football is directly participating in my *energeia*. Yet, the act of kicking a football is distinct from me (the subject engaging in the act). Accordingly, the football having participated in my energies does not break down the distinction between the act of kicking the ball and my essence or essential order.

St Gregory's ingenious move was to utilise both the essence-properties and essence-energies distinctions to logically reconcile his apophaticism with his commitment to dogmatic statements regarding God's essential properties or attributes. As he explains:

> Neither the uncreated goodness, nor the eternal glory, nor the divine life nor things akin to these [i.e., the other divine attributes] are simply the superessential essence of God, for God transcends them all as Cause [i.e., ground]. But we say He is life, goodness and so forth, and give Him these names, because of the revelatory energies and powers of the Superessential . . . But since God is entirely present in each of the divine energies, we name Him from each of them, although it is clear that He transcends all of them. For given the multitude of divine energies, how could God subsist entirely in each without any division at all; and how could each provide Him with a name nd manifest Him entirely, thanks to indivisible and supernatural simplicity, if He did not transcend all these energies? (Gregory Palamas, 1983 originally 1338-1341 pp.95-6).

To grasp what St Gregory is saying here consider, once again, the example of me playing football with my son. St Gregory's ideas can be explained like this: the relation between me and a football is analogous to that which exists between God and the universe. The crucial difference being, God's essence (unlike mine) is not identical to his *essential order* because, God is not a physical-ordered being. Rather, God is ontologically distinct and uncomplex. Thus, while my various energies (e.g., kicking a football or making a cup of tea or writing a philosophy article) are mediated through my various physical parts (e.g., my legs, feet, hands,

etc.), God's various energies flow forth from his simple 'supraessence'.[81] Hence, God (unlike me) is *fully* present in his various energies. For, given God's simplicity, it could not be the case that only part of God is present in any given *energeia*.

Furthermore, just like my energies are revelatory of my properties (e.g., 'being a philosopher', and 'being an extremely inadequate football player'), the various divine energies (e.g., creating and sustaining the world, appearing to Moses on Mt. Sinai, becoming flesh and dwelling among us, etc.) are revelatory of his divine properties. It is, for example, in virtue of the fact that God created and sustains the world that St Gregory refers to him as 'being the creator' or as 'being life', etc. Hence, God's energies ground the various cataphatic names St Gregory applies to God. Just as the property 'being a football player' is not part of my essence, so the divine property 'being the creator' is not part of God's essence. Nevertheless, God is fully present in his various energies. When we participate in them, we are directly participating in him (not, merely some created sign of his presence).

Now that I have outlined St Gregory's essence-energies distinction, it is time to tie these two discussions together—i.e., the discussion regarding the essence-property distinction and the essence-energies distinction—to resolve the apparent tension existing between the version of apophatic theism I have promoted and defended in this dissertation and Christian dogma.

8.3. Tying it all together

In Chapter 7 I discussed the concept of a negative property. I explained that a negative property is not a property, *per se*, but merely the negation of either an essential or accidental property. When I assert, for example, the proposition <My daughter is *not* dyslexic>, I am not predicating of my daughter the attribute 'being not-dyslexic'. Rather, I am simply saying that my daughter does *not* exemplify the property 'being dyslexic'. I then argued that in stating that *logos* is ineffable one is not, according to this theory, predicating something of *logos*. On the contrary, one is merely saying that *logos's* essence does not bear the property 'being effable' as many (perhaps all) the physical entity's that comprise the universe do.

Importantly, I argued that apophatic theists do not arbitrarily generate negative properties but, rather, adhere to the following basic rule: *any property predicated of the universe can be negated of logos*. So, for example, if the universe exemplifies the property 'being subject to change', then one can say that *logos* does not exemplify the property being subject to change (i.e., *logos* is unchanging). If the universe bears the property 'being temporal' then one can say of *logos* that it does not exemplify the property 'being temporal' (i.e., *logos* is atemporal), and so forth.

I also clarified that this process—in which one systematically denies that *logos* instantiates any properties predicated of the universe—only applies to *univocal* properties. For example, when one says that the universe bears the property 'being subject to change' and an apophatic theologian says "*logos* does not exemplify the property 'being subject to change'" she means that *logos* is not subject to change *in the same sense that the universe is*

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[81] He uses the term 'supraessence' to indicate that when we speak of God's essence we are not using the term 'essence' in a univocal sense; that is, in the same way that we apply the term to physical entities.

subject to change. Clearly if *logos* is ontologically distinct, and thus a non-physical, non-ordered, entity, it cannot be the case that *logos* is subject to change in the same sense that a physical entity is subject to change. I then argued that simply proliferating *logos's* negative properties will never help a knowledge seeker, *S*, come to know what kind of thing *logos* is. Rather, it only helps *S* come to know what *logos* is not.

 Despite all this, I argue that it is possible to predicate properties of *logos* in virtue of the fact that *logos* engages in unique activities that no other entity is capable of engaging in. For example, throughout the course of Part 2 I have argued that *logos* engages in the act of 'conceiving of the set of all logically possible ordering principles', and in the act of 'willing that a particular set of ordering principles, I_1, is realised in the world', and in the act of 'fundamentally grounding the universe's order and existence from nothing'.

 I maintain that these activities that *logos* engages in ground the properties I predicated of *logos* throughout this dissertation; namely, properties such as 'being the fundamental ground of the universe's order-existence from nothing', and 'being analogous to an intelligent agency or mind', etc. Furthermore, given that, in principle, there is no other entity in existence that could engage in these activities, it follows that these activities are strictly characteristic of *logos*. Meaning, it is metaphysically impossible for any other entity (of any kind) to engage in such activities. Accordingly, the properties I have predicated of *logos*, which are grounded in its energies, should be taken to be essential properties and, not, accidents.

 From this we can extrapolate a theory regarding how a Christian apophatic theist should interpret the traditional divine attributes upheld by Christian dogma. According to this theory, any property that traditional Christian dogmatic theology predicates of *logos* (i.e., God) should be taken to be an essential property (as defined in Section 8.1.1.). For example, all traditional positive predications of the divinity such as 'being the creator and sustainer of the universe', 'being Love', 'being the Good', 'being the Beautiful', 'being Truth itself', 'being omniscient', 'being omnipotent', and whatever else has been traditionally predicated of God by orthodox Christian theologians, should be taken to be essential properties that are grounded in *logos's* energies. We can represent the schema I have just outlined with the following table:

(1) Negative (apophatic) properties: negations of properties that the universe instantiates.	*(2) Positive (cataphatic) properties: essential properties grounded in logos's characteristic energies.*
1. Atemporal 2. Simple (i.e., incomposite) 3. Unchanging 4. Incorporeal 5. Immortal 6. Ineffable 7. Unoriginate 8. Unlimited 9. Uncircumscribed 10. Infinite (i.e., *not* finite)	1. Being the Good 2. Being the Beautiful 3. Being Love 4. Being Truth 5. Being omniscient 6. Being omnipotent 7. Being the creator of the universe 8. Being the sustainer of the universe 9. Being analogous to a mind 10. Being merciful

Figure 8.1 Negative and positive properties.

Utilizing this model which is built on everything I discussed in 8.1 and 8.2—i.e., the essence-properties distinction and the essence-energies distinction—we are now able to respond to the charge that apophatic theism and Christian theology are logically inconsistent. More specifically, we are now in a position to respond to the allegation that Christian apophatic theists are asserting that the following contradiction is true:

P12: It is both possible and impossible to know *logos's* essence.

Given the model I have just explicated, it is clear that Christian apophatic theism is not committed to the truth of P12. On the contrary, given my model, apophatic theism is asserting that the following proposition is true:

P15: It is both impossible to know *logos's* essence and possible to know *logos's* essential properties.

If we interpret P15 through the lens of real essentialism—which takes there to be a distinction between an entity's essence and its essential properties and a distinction between an entity's essence and its energies or activities—then it is most certainly not asserting a contradiction.

Conclusion

In this chapter, I sought to explain how apophatic theists interpret positive predications of *logos* considering the arguments for the ineffability I proffered in Chapter 7. Furthermore, I endeavoured to show that apophatic theism is logically compatible with Christian dogmatic theology. I accomplished this by building a coherent model inspired by the Greek Patristic tradition and, especially, the work of St Gregory Palamas.

The model I explicated was based on two key metaphysical distinctions maintained by real essentialism. The first distinction I explicated was between the essence of an entity and its properties. The second distinction I made was between an essence and its energies or activities. Utilising these key metaphysical distinctions, I argued that the various positive predications of *logos* made throughout developing *Stage Two* of the eutaxiological argument—e.g., 'being the fundamental ground of the universe's order'—are essential properties. In other words, they are not part of *logos's* essence (which is unknowable) but, rather, grounded in *logos's* characteristic activities.

From this I extrapolated a theory that detailed how an apophatic theist can consistently maintain Christian dogmatic teaching that we can know God's essential properties. According to my theory, any positive attribute we predicate of God is an 'essential property' in the sense that real essentialists define the term. Furthermore, God's essential properties are grounded in his energies or characteristic activities. I then showed how this account adequately responds to the charge that Christian apophatic theism is logically incoherent.

Conclusion

In this thesis, I proffered a novel argument from order for the existence of God called the eutaxiological argument. According to this argument, the universe's order and existence is fundamentally grounded in *logos* (λογος) or Mind. Unlike teleological design arguments, the eutaxiological argument is not concerned with the alleged end or purpose of some physical entity—e.g., the human eye, the *bacteria flagellum,* or the universe taken as a whole. It is, instead, concerned with the fact that the universe is ordered. In explicating this argument, I carefully analysed concepts such as 'the universe', 'physical', and 'order' that are often quickly and unsatisfactorily glossed over by philosophers of religion. In so doing, I was able to develop a physicalist conception of the universe according to which an entity is physical just in case it exemplifies a quantifiable relation conforming to an ordering principle. Building on this, I was able to proffer supporting arguments for the eutaxiological argument.

Unlike most contemporary arguments for God's existence, I showed that the eutaxiological argument argues for the existence of God as conceived of by apophatic theism. According to apophatic theism, the term 'God' denotes a unique, ontologically distinct, ineffable, *logos* that fundamentally grounds the universe's order and existence from nothing. Historically, one can find proponents of apophatic theism in numerous philosophical and religious traditions—including some strands of Hinduism, Judaism, Neoplatonism, Christianity, and Islam. As I showed, its most ardent Christian exponents come from the Eastern Christian tradition. The second part of this thesis offered a fresh defence of apophatic theism inspired by the Eastern Christian tradition. It responded to significant objections regarding the coherence of divine ineffability and the supposed logical incompatibility of apophatic theism with Christianity

Given the arguments developed in this thesis, there is good reason to believe the universe's order and existence have an explanation and that this explanation corresponds with the God of apophatic theism.

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