

PROBABILITY, SIMPLICITY, AND INFINITY: A CRITIQUE OF
RICHARD SWINBURNE'S ARGUMENT FOR THEISM

by

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Abstract

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Richard Swinburne has presented an extended argument, spanning many works, the conclusion of which is that God likely exists. His argument is a cumulative argument, which means that he considers many pieces of evidence in arguing that God likely exists. The evidence he considers is evidence that is traditionally considered separately (or not at all) in arguments to God's existence.

The purpose of this thesis is to analyze Swinburne's inductive, cumulative argument to the existence of God. In the course of analyzing Swinburne's work, I use his argument as a lens to focus on issues that arise in areas outside of philosophy of religion, such as philosophy of science and epistemology. Some main themes of Swinburne's argument for theism are that the infinite is simple, that God is infinite on several properties, and that simple entities are likely to exist. I closely analyze Swinburne's views on infinity and simplicity, and ultimately suggest that these concepts do not do the work that Swinburne claims they do. That is, by taking a careful look at infinity and simplicity, I suggest that Swinburne's argument fails to show that God most likely exists.

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Chapter 1: The Existence of God

1. Introduction

For thousands of years people have put forth arguments both for and against the existence of God. Forms of the cosmological, ontological, and teleological arguments are the most frequent arguments to the existence of God; the problem of evil is the most frequent argument against the existence of God. These arguments are most often presented as deductive arguments. That is, the conclusions of the arguments are meant to establish that God either certainly exists, or certainly does not exist. The arguments also generally have in common that they argue from *one* consideration, or one piece of evidence, to their conclusion. For example, the cosmological argument argues from the existence of a universe to the existence of God; the problem of evil argues from the presence of evil against the existence of God.

Whether any of these deductive arguments succeed or not is a matter of great contention and debate; however, many people, including the present author, believe that no argument successfully shows that God definitely exists or definitely does not exist. Deductive arguments, either for or against the existence of God, fail. To reiterate, this position is contentious and certainly there are those who disagree, but let me outline why I believe it is the correct position. Note that even if it were shown that all deductive arguments for the existence of God fail, it would still remain a possibility that some argument not previously considered might someday succeed. Thus refuting deductive

arguments considered to the present day would provide evidence that no such argument succeeds, but would leave open the possibility that some future argument might succeed.

Another strategy to argue that no deductive argument for the existence of God succeeds is to claim that it is conceivable that the universe could exist without God. And indeed, it seems coherent to suppose that this universe exist, but that God not exist. Similar considerations apply in attempting to argue that no deductive argument *against* the existence of God succeeds. It seems coherent to suppose that God and this universe might coexist.¹

Though many people find it doubtful that a deductive argument can settle the issue of God's existence, might an inductive argument succeed? Richard Swinburne is a contemporary philosopher of religion, considered by many to be one of the most important philosophers of religion working today. He has presented an extended argument, the conclusion of which is that God likely exists. Swinburne agrees that no deductive argument for God's existence succeeds, but he suggests that his inductive argument succeeds. His argument is a cumulative argument, which means that he considers many pieces of evidence in arguing that God likely exists. The evidence he considers is evidence that is traditionally considered separately (or not at all) in arguments to God's existence.

The purpose of this thesis is to analyze Swinburne's cumulative argument to the existence of God. The existence of God is one theory as to how the universe came about. Swinburne believes that a consideration of the cumulative evidence supports the theory that God exists, and that God created and sustains the universe. Thus a crucial question we will address is: How do theories and evidence fit together? That is, when does

evidence raise or lower the probability of some theory? A crucial piece of the answer involves the concept of *simplicity*; thus I analyze and explicate the concept of simplicity. In this thesis I will focus on a particular type of simplicity that is especially relevant to Swinburne's argument, namely numerical simplicity, and I will argue that all numbers are equally simple, including the infinite. I apply these considerations to Swinburne's argument. Ultimately I conclude that Swinburne's argument fails to show that God likely exists, in large measure because simplicity does not do the work that Swinburne claims it does.

Let us turn to Swinburne and an overview of his work. Swinburne has published over 100 articles and more than one dozen books, covering many areas of philosophy. He was the Nolloth Professor of the Philosophy of the Christian Religion at Oxford until 2002. Much of his work is dedicated to arguing for theism, that is, Swinburne argues that God exists (to explain exactly how Swinburne views God is a task of this thesis). Even those who argue against Swinburne tend to show great respect for his contribution to the philosophy of religion specifically, and philosophy generally.

Swinburne's argument for theism forces him to consider issues in many areas of philosophy. Metaphysical and epistemic questions naturally arise from Swinburne's focus on religion: Does God exist? If so, how do we know that God exists? What is God? What properties does God have? Logical questions arise: What form does the argument for God's existence take? For example, is the argument deductively valid or inductive? God is often assumed to be perfectly good. This leads to a consideration of ethics. What does it mean to say that God is perfectly good? What constraints, if any, does God's perfect goodness place upon His actions? Though Swinburne is primarily known as a

philosopher of religion, his work spans a great many areas of philosophy. As David McNaughton writes, “One of the great strengths of Swinburne’s work is its systematic structure; the metaphysics, epistemology, philosophy of mind, and ethics all mutually support each other.”² It is impossible to analyze and judge the merits of Swinburne’s argument for theism without considering Swinburne’s work in other areas of philosophy, as Swinburne’s argument for theism largely relies on his work in these other areas of philosophy. In those places where Swinburne is directly arguing for theism, he very often appeals to his work elsewhere. Swinburne cites himself a great deal, and refers the reader to his works.

Swinburne makes this point regarding the integrated character of his work very well in the introduction to *The Coherence of Theism*:

Although the over-all topic of this book lies squarely within the field of the philosophy of religion, I have found it necessary, in order to answer the questions with which I am concerned, to write lengthy sections on many general philosophical topics and then apply the results to the claims of theism. There are detailed discussions of such topics as meaningfulness, personal identity, free will, and the objectivity of morality—topics generally considered to lie within areas of philosophy other than the philosophy of religion. This is an inevitable and to my mind welcome consequence of the integrated character of philosophy. What is unfortunate, however, is that since so many central

philosophical issues comes into the discussion, they are dealt with too briefly. I have tried to remedy this defect to some extent by referring to books and articles where the issues may be followed up more fully.³

While in the quote above Swinburne is referring to his argument in *The Coherence of Theism*, his remarks apply equally well to his other work. Thus judging whether or not Swinburne's argument for theism succeeds is no small task. His argument is spread out over many articles and books spanning many years. For example, an argument in *The Existence of God* will refer the reader to *The Coherence of Theism*, which then refers to reader to other articles. In such a case, judging the argument in *The Existence of God* requires the reader to follow Swinburne's argument through all of the referred to sources. The purpose of this thesis is to consider Swinburne's argument for theism, with the goal of judging whether or not Swinburne's argument ultimately succeeds. This task requires a careful study of much of Swinburne's work, with a focus on Swinburne's view of simplicity.

Swinburne's argument for theism finds its central expression in *The Existence of God*. In the preface to the second edition of *The Existence of God* Swinburne writes, "*The Existence of God* is the central book of all that I've written on the philosophy of religion."⁴ Accordingly, my thesis will centrally focus on *The Existence of God*, bringing in other sources as they relate to Swinburne's argument in *The Existence of God*. *The Existence of God* is the second book in Swinburne's trilogy on theism. The first book is

The Coherence of Theism. We can see how the two books relate by considering Swinburne:

The Coherence of Theism was concerned with what it means to say that there is a God and whether the claim that there is a God is internally coherent. *The Existence of God* is concerned with whether the claim is true; it is concerned to assess the weight of arguments from experience for and against this claim, and to reach a conclusion about whether on balance the arguments indicate that there is a God or that there is not.⁵

The final book in the trilogy is *Faith and Reason*. Swinburne writes:

I shall, however, argue that, although reason can reach a fairly well justified conclusion about the existence of God, it can reach only a probable conclusion, not an indubitable one. For this reason, there is abundant room for faith in the practice of religion, and my trilogy on the philosophy of theism ends with a volume on Faith and Reason.⁶

I discuss Swinburne's arguments in *The Coherence of Theism* and *Faith and Reason* mainly as they relate to *The Existence of God*. My thesis may be thought of as a series of expanding concentric circles. In the innermost circle, and the focus of my thesis,

lies *The Existence of God*. Here Swinburne argues directly for theism, relying heavily on simplicity. Swinburne's argument in *The Existence of God* can be neither judged nor fully comprehended without considering the other two books of the trilogy. Thus the trilogy forms a wider circle on which I focus. Finally, throughout the trilogy Swinburne refers to and relies on arguments he has presented in his other work. And so an even wider circle includes all of Swinburne's work which is required to understand Swinburne's thought in the trilogy.⁷ The widest circle brings in secondary literature, considering the arguments of those who have responded to Swinburne.

1.1 The Plan of the Thesis

Let me now outline the overall plan of this thesis. As the primary focus of my thesis is *The Existence of God*, we begin by considering the argument presented there in this chapter. I am concerned with presenting the overall framework within which Swinburne's argument takes place. For example, Swinburne employs Bayes's Theorem to argue that God likely exists.⁸ This theorem is a theorem of the probability calculus. Thus in this chapter I discuss both Bayes's Theorem and the nature of the probabilities with which Swinburne works. Not only is Bayes's Theorem crucial to Swinburne's argument, but we shall see that an understanding of Bayes's Theorem relates directly to simplicity, in that two of the terms of Bayes's Theorem are determined mainly by simplicity.⁹

Recall that Swinburne's argument is a cumulative argument, meaning that he considers a good deal of evidence. In chapter 2, I briefly outline this evidence and discuss

how Swinburne argues that the evidence raises the probability of God's existence. In particular, one question that arises is: Why does the universe need any explanation at all? That is, couldn't we simply take the universe as a brute fact? The answer to these questions is settled by an appeal to simplicity. In general, complex entities or states of affairs are explained by simple ones. Thus one of the themes of chapter two is that the evidence considered by Swinburne is complex. Swinburne claims that his proposed ultimate explanation, God, is simple; this claim will be subject to a great deal of scrutiny in this thesis. After presenting a brief overview of the evidence, I consider one piece of evidence in more detail, namely the existence of the universe. The goal is to get a sense of how Swinburne argues to God from a consideration of the complexity of the evidence, and this piece of evidence provides a good example.

Chapter 3 begins with a consideration of the question of how evidence and theories relate. That is, why should Swinburne's evidence support the theory that God exists more than, for example, the theory of the Big Bang, or the Theory that many finitely powerful gods created the universe?¹⁰ Swinburne's evidence is meant to raise the probability that the theory "God exists" is true. But how does evidence confirm or disconfirm a theory? The simplicity of the theory itself plays a crucial role in raising the probability of that theories being true. Thus in chapter 3 simplicity is first considered in some detail. Specifically I will argue that all numbers are equally simple, in a sense to be discussed. If true, then Swinburne's claim that 1 being is simpler than, e.g., 2, is false, and thus the theory that God exists is not simpler than polytheism.

Chapter 4 remains on the theme of simplicity and turns to a consideration of the infinite. Swinburne argues not only that round and small numbers are simple (which is

the topic of chapter 3 and the main route by which Swinburne argues for monotheism), but also that the infinite is simple. In chapter 4 I indicate how this alleged simplicity of the infinite fits into Swinburne's argument, and I suggest that Swinburne has not successfully argued that the infinite is simple. The end of chapter 4 contains a brief discussion of Hume's *Dialogues*, where a main worry is how one can know, even if there is a personal creator of the universe, that the creator is one person of infinite power, knowledge, and goodness. Swinburne's arguments that 1 and the infinite are simple play a crucial role in his attempted response to Hume. By the conclusion of chapter 4 I hope to have successfully argued that all numbers, including the infinite, are equally simple.

Chapter 5 remains on the themes of simplicity and the infinite, but the focus shifts from numerical simplicity to a tension that exists between *The Existence of God* and another of Swinburne's book, *The Coherence of Theism*. I show that even if the infinite is simple (though I hope to have shown by the conclusion of chapter 4 that the infinite is not simple), God is not infinite in the relevant respect on several of God's properties. Thus chapters 4 and 5 together show that Swinburne's argument to the simplicity of God via the infinite fails doubly. Chapter 4 shows that the infinite is not simple. Then even if the infinite were simple, chapter 5 demonstrates that God is not infinite on two of three crucial properties.

Chapter 6 turns to several numerical considerations regarding Swinburne's argument. Recall that Swinburne's argument is a probabilistic one, where the conclusion is that God exists with a probability of over 50%. In chapter 6, we consider exactly how Swinburne attempts to arrive at this conclusion mathematically. The first 5 chapters have paved the way for these considerations. In particular, one of the key terms in Bayes's

Theorem is $P(h|k)$, which is determined by the simplicity of h , or God's existence.

Chapter 6 focuses on $P(h|k)$, and therefore, on simplicity. I suggest that there are several problems with the way that Swinburne intends for his argument to proceed mathematically. Chapter 6 also summarizes and concludes the thesis. Let us now continue with chapter 1, wherein I discuss the general framework of Swinburne's inductive argument to the existence of God.

2. P and C- Inductive arguments

In *The Existence of God* Swinburne presents an inductive argument for theism, that is, Swinburne argues that God likely exists. In the next several sections let us review the overall structure of Swinburne's argument. Swinburne begins *The Existence of God* with a chapter on inductive arguments. A correct inductive argument is one in which the truth of the premises renders the truth of the conclusion more probable. Swinburne distinguishes two types of inductive arguments:

Let us call an argument in which the premises make the conclusion probable a correct P-inductive argument. Let us call an argument in which the premises add to the probability of the conclusion (that is, make the conclusion more likely or more probable than it would otherwise be) a correct C-inductive argument. In this latter case we say that the premises "confirm" the conclusion.¹¹

The area of study that considers how evidence and theories relate is known as “confirmation theory.” Thus it is of particular interest when some evidence raises, or confirms, some theory. Two other notes: First, C-inductive arguments can be profoundly weak in the sense that, e.g., the probability of God’s existence might be raised from 1×10^{-7} to 1.01×10^{-7} by some argument.¹² Such an argument is very weak, having only slightly raised the probability of God’s existence, and yet such an argument is a correct C-inductive argument. Second, though it may at first seem that P-inductive arguments are stronger than C-inductive arguments, in fact based on Swinburne’s wording above, a correct P-inductive argument need not even be a correct C-inductive argument. For example, imagine that an argument based on the existence of evil takes the probability of God’s existence from 0.8 to 0.6. This argument is technically a correct P-inductive argument according to Swinburne’s definition given above (as the conclusion is probable), but the argument is not a correct C-inductive argument as the probability of God’s existence has decreased.

Swinburne’s argument for theism is an inductive argument. He claims that the whole argument is a correct P-inductive argument, that is, the premises render the existence of God probable (greater than 50%). What I have called Swinburne’s “whole argument” is mainly comprised of a series of (what Swinburne claims are) correct C-inductive arguments. Swinburne considers a series of evidence, where many of the pieces of evidence increase the probability that God exists. Specifically, Swinburne considers various evidence and feeds it into Bayes’s Theorem (I discuss this theorem in greater detail below in this chapter; the evidence is considered in greater detail in chapter 2). According to Swinburne, most of the evidence increases the probability that God exists

(the existence of evil in the world decreases the probability, and two arguments have no force).

3. Bayes's Theorem

To argue that God's existence is likely, Swinburne employs Bayes's Theorem. Let us first review Bayes's Theorem in a general setting and work through an example, before turning to the specific use to which Swinburne employs it. $P(h)$ is read "the probability of h ." Then for example, if h is "a 6-sided die roll is even," then $P(h) = 1/2$. That is, the probability that a 6-sided die roll is even is $1/2$, or 50%. $P(h|k)$ is read "the probability of h given k ." That is, we assume k , and then consider the probability of h . So if h is as above and k is "the die roll is 4 or greater," then $P(h|k) = 2/3$, that is, the probability of rolling an even number *assuming that the roll is 4 or greater* is $2/3$, as 4 and 6 are even, 5 is odd.

Bayes's Theorem is a theorem from probability theory that relates probabilities. The specific form in which Swinburne employs Bayes's Theorem is as follows:

$$P(h|e\&k) = P(e|h\&k) P(h|k) / P(e|k)$$

In Swinburne's argument, h is always the hypothesis "God exists," e is evidence for or against the existence of God, and k begins as "mere tautological evidence." k and e will change as Swinburne feeds evidence into Bayes's Theorem. $P(h|k)$ is called "the prior probability of God's existence" (as h is the hypothesis "God exists"), and also

called “intrinsic probability” when k is mere tautological evidence. Bayes’s Theorem indicates that the probability that God exists given the evidence ($P(h|e\&k)$, also called “posterior probability”) is equal to the probability of the evidence given that God exists [$P(e|h\&k)$] multiplied times the prior probability that God exists [$P(h|k)$] divided by the prior probability of the evidence [$P(e|k)$]. We will consider each of these terms in detail throughout this thesis. Swinburne argues that $P(h|e\&k)$ is greater than 50%, that is, that the existence of God is probable, given the evidence he considers.

What evidence does Swinburne consider?

In the course of this book I shall discuss various of the reasons that people have had for believing in the existence of God, or in the non-existence of God.... I shall discuss only arguments in which the premises report what are (in some general sense) features of human experience—for example, evident general truths about the world or features of private human experience. Such arguments I shall term *a posteriori* arguments.¹³

So for example, Swinburne will consider various forms of the cosmological and teleological arguments. But he will not consider the ontological argument. He considers (presents) no deductive arguments, nor any *a priori* arguments. (Sometimes the evidence he considers is taken to be premises of deductive arguments in other settings by other authors, but Swinburne is considering the evidence to support an inductive argument.) To reiterate, we will take a closer look at the evidence in chapter 2, and then throughout the

thesis. In the context of Bayes's Theorem, what does it mean to say that k is "mere tautological evidence"?¹⁴ h represents a hypothesis under consideration. Then the notation $P(h|e \& k)$ stands for the probability of the hypothesis h given the evidence e and k . This division of the evidence often represents new evidence, e , and old evidence, k . For example, if some new planet position came in, this could be represented by e . But the division of evidence can be made wherever one likes. When all evidence from experience is e and everything else is k , then k is known as mere "tautological evidence."

That is, often times Bayes's Theorem is used to update probabilities (often these probabilities are taken to be degrees of belief, though Swinburne takes probabilities to be objective, discussed below) in light of new evidence. In such a case we think of updating probabilities through time. Imagine that some new experiment is done. The results of the new experiment would be evidence e , and all old evidence (from previous experiments) as well as other background knowledge would be k . e might be a new observation of Mars, whereas k would be all previous observations as well as the current state of knowledge in physics. In such a case h may be the theory that Mars moves in an elliptical orbit. Bayes's Theorem could then be used to tell us how to update our belief that Mars moves in an elliptical orbit based on the new evidence, e . What Swinburne is suggesting in his quote above with regards to the division of knowledge is that he is going to take e to be all evidence, and k to be "all our other irrelevant knowledge."¹⁵ This remark is subject to the qualification that as Swinburne feeds evidence into Bayes's Theorem, e and k will vary. When Swinburne finally considers the probabilities at the end of *The Existence of God*, then e and k will be as stated in his quote. Let us now consider what is meant by feeding evidence into Bayes's Theorem.

3.1 Feeding Evidence into Bayes's Theorem

Swinburne discusses $P(h|k)$ and $P(e|h \& k)$ directly, but ultimately he is going to “feed evidence in Bayes's Theorem.” Let us investigate the meaning of this strategy.

Recall that Bayes's Theorem is:

$$P(h|e \& k) = P(e|h \& k) P(h|k) / P(e|k)$$

Prior to considering any evidence, Swinburne argues that $P(h|k)$ is relatively high. Swinburne also argues that $P(e|h \& k) = 1/2$. It then seems that all that remains is to consider $P(e|k)$ in order to calculate $P(h|e \& k)$; however, this is not how Swinburne's argument proceeds. Instead Swinburne is going to feed evidence into Bayes's Theorem. Swinburne outlines his strategy of feeding evidence into Bayes's Theorem in detail in the following paragraph (as it outlines Swinburne's overarching plan, I quote Swinburne at some length):

My strategy will be as follows. Let h be our hypothesis—“God exists.” Let e_1 , e_2 , e_3 , and so on be the various propositions that people bring forth as evidence for or against his existence, the conjunction of which form e . Let e_1 be “there is a physical universe.” Then we have the argument from e_1 to h —a cosmological argument. In considering this argument I shall

assume that we have no other relevant evidence. Then $P(h|e_1 \& k)$ represents the probability that God exists given that there is a physical universe—and also given mere tautological evidence, which latter can be ignored. If $P(h|e_1 \& k) > P(h|k)$, then the argument is a good C-inductive argument. But, when considering the second argument, from e_2 (which will be the conformity of the universe to temporal order), I shall use k to represent the premise of the first argument e_1 ; and so $P(h|e_2 \& k)$ will represent the probability that God exists, given that there is a physical universe and that it is subject to temporal order. And, when considering the third argument, from e_3 , k will represent the premises of the second argument ($e_1 \& e_2$). And so on. In this way all relevant evidence will eventually be fed into our assessment. I shall consider some eleven arguments. I shall claim that for most of these e_n , where $n = 1, \dots, 11$, $P(h|e_n \& k) > P(h|k)$ —that is the argument is a good C-inductive argument for the existence of God, that two of the arguments (one for and one against) have no force ($P(h|e_n \& k) = P(h|k)$ in these cases) and that one argument against has force ($P(h|e_n \& k) < P(h|k)$) where e_n is the occurrence of evil. The crucial issue to which we will eventually come is whether $P(h|e_{11} \& k) > 1/2$.¹⁶

Let us investigate Swinburne's strategy in greater detail. First recall that $P(h|k)$ is read as "the probability of h given k " or sometimes "the probability of h on k ." As Swinburne writes, h is the hypothesis "God exists." k initially is mere tautological evidence when Swinburne considers the first piece of evidence, e_1 , which is "there is a universe," that is, Swinburne first considers a form of the cosmological argument. How do we know whether or not the evidence provides an argument to the existence of God? As Swinburne writes above, the crucial question is whether $P(h|e_1 \& k) > P(h|k)$, that is, the crucial question is whether the probability of God's existence given both k *and the existence of the universe (e_1)* is greater than the probability of God's existence given only k . If so, it means that the existence of the universe makes God's existence more likely, or "confirms" God's existence. In Swinburne's terminology, when $P(h|e_1 \& k) > P(h|k)$, we have a good C-inductive argument to God's existence, as e_1 has made h more probable; if $P(h|e_1 \& k) > 1/2$, then we have a good P-inductive argument to God's existence, as e_1 makes the probability of h greater than $1/2$. So for example, it might be the case that $P(h|k) = 0.1$, whereas $P(h|e_1 \& k) = 0.2$. Then e_1 would provide a good C-inductive argument to the existence of God, but not a good P-inductive argument.

It might be helpful to recall the example above from statistical probability. Let h be "the 6-sided die lands on an even number," let k be mere tautological evidence, and let e_1 be "the die landed on a number 4 or greater." Then $P(h|k) = 1/2$, whereas $P(h|e_1 \& k) = 2/3$. That is, e_1 makes h more likely, or confirms h . The fact that a die roll was 4 or greater increases the probability that the die roll was even, and increases it to over 50%. In this example, e_1 provides both a correct C-inductive argument to h and a good P-inductive argument to h . Similarly, Swinburne will argue that most of the evidence he

considers makes the existence of God more likely, or confirms God's existence.¹⁷ Again the crucial point is that for e to confirm h means that $P(h|e \& k) > P(h|k)$. Before moving on, let us consider one more example, to which we will return. Let h be "Henry committed the murder." Let k be all evidence up until yesterday. Then let e be evidence, attained today, that Henry's fingerprints were found at the crime scene. Most likely it is the case that $P(h|e \& k) > P(h|k)$, that is, that the probability (P) that Henry committed the murder (h) given the evidence through yesterday (k) together with his fingerprints (e) is greater than ($>$) the probability (P) that Henry committed the murder (h) given the evidence through yesterday (k). Again the crucial point is that e confirms h , that is, the fingerprints make it more likely that Henry committed the murder. A key question to which we will soon turn is how evidence may support other evidence, or, in some cases, how pieces of evidence may be in tension. That is, Swinburne's argument is a cumulative argument to God's existence, and so it is crucial, if his argument is to have hope of success, that the evidence accumulate properly.

Before moving on to this consideration, it is important to discuss two methods of ascertaining whether or not $P(h|e \& k) > P(h|k)$ holds. Recall that if this inequality holds, then e confirms h , that is, e provides evidence in support of h (Swinburne will argue that most of the evidence he considers provides evidence in support of the conclusion that God exists). Let us begin by discussing the more important of the methods. First, note that by dividing both sides of Bayes's Theorem by $P(h|k)$, it can be rewritten:

$$(1) P(h|e \& k) / P(h|k) = P(e|h \& k) / P(e|k)$$

Then note that if $P(e|h \& k) > P(e|k)$, it follows that the right-hand side of (1) is greater than 1. Then too, the left-hand side of (1) must be greater than 1, as the two sides are equal. As probabilities must be greater than 0, the only way that this can occur is if $P(h|e \& k)$ is greater than $P(h|k)$. That is to say that if the evidence is more likely given God, then God is more likely given the evidence. We will see the importance of this method of ascertaining whether or not $P(h|e \& k) > P(h|k)$ holds in chapter 2 of this thesis. Also: “ $P(h|e \& k) > P(h|k)$ if and only if $P(e|h \& k) > P(e|\sim h \& k)$. This says that a hypothesis is confirmed by evidence if and only if that evidence is more likely to occur if the hypothesis is true than if it is false.”¹⁸

Thus there are three ways to show that $P(h|e \& k) > P(h|k)$. First, it can be shown directly. That is, it can be shown that the evidence increases the likelihood that God exists. For example, imagine that God appears in the clouds and delivers a moving sermon. Such evidence, e , may very well increase the likelihood of God’s existence, h . (Note that this is not one of Swinburne’s pieces of evidence). The key point is that God is more likely to exist given this evidence. *The sermon supports theism*. Second, it can be shown that $P(e|h \& k) > P(e|k)$, which is to say that the evidence, e , is more likely given God’s existence, h , than in the absence of this assumption. To stay with the above example, this method indicates that the evidence is more likely to come about given God’s existence as compared with making no assumptions regarding God’s existence. God’s existence increases the likelihood of the sermon in the sky. *Theism makes the sermon more likely than does agnosticism*. Third, it can be shown that $P(e|h \& k) > P(e|\sim h \& k)$. This method indicates that the evidence is more likely given God’s existence

as compared with assuming that God does not exist. *Theism makes the sermon more likely than does atheism.*

The key point is that showing any one of these three inequalities implies that $P(h|e \& k) > P(h|k)$, that is, that the evidence confirms God's existence.¹⁹ When we turn to chapter 2 of this thesis, we will take a closer look at how Swinburne argues for these inequalities. Often Swinburne will argue that $P(e|h \& k) > P(e|k)$, where the simplicity (or lack thereof, that is, the complexity) of e plays a crucial role.

3.2 Potential Objections to Swinburne's Method

Swinburne's argument is a cumulative argument, which means that he will consider many pieces of evidence and attempt to combine them into a successful argument for the likelihood of God's existence. The evidence that Swinburne considers is traditionally considered separately. A worry that arises is that perhaps the evidence is not cumulative, that is, it might be the case that each piece of evidence renders God probable to a certain extent, but that the evidence does not accumulate in the proper manner to yield the conclusion that God likely exists. This objection takes on two main forms; it is worth considering each in turn.

First, recall that Swinburne wishes to argue to the conclusion "God exists." There is the concern that different evidence may support different conclusions, in particular some evidence may support a conclusion other than "God exists." As Swinburne writes, "[n]ow it is sometimes said that the different arguments for the existence of God show different things. The cosmological argument shows at most the existence of some sort of

necessary being; the argument from design shows at most some sort of architect; the argument from miracles shows at most some sort of poltergeist...”²⁰ This concern is particularly acute for deductive arguments. For example, taken deductively the cosmological argument arguably arrives at some necessary first cause, but what, if anything, follows regarding the properties of this first cause? Many have suggested that from the claim that there is a first cause nothing follows regarding the properties of this first cause, other than that the first cause must have been able to cause the universe. If so, then deductive cosmological arguments do not argue to the existence of God.

Inductive arguments, however, differ in that we may ask whether e is a good C- (or P-)inductive argument to h *for any e and any h* . If the cosmological argument succeeded deductively to show that there was a first cause, then $P(h|e \& k) = 100\%$ *with h as “there was a first cause”* and e as the evidence presented in the argument. We still may ask, however, for the value of $P(h|e \& k)$ *with h as “God exists.”* Perhaps e has no effect on this value at all, that is $P(h|e \& k) = P(h|k)$. If this is the case then e does not provide evidence for God’s existence, that is, e is not a good C-inductive argument to God’s existence. (In fact, Swinburne will argue that this is precisely the case for two pieces of evidence that he considers, that is, that $P(h|e \& k) = P(h|k)$.) But the crucial point is that we may consider how much the evidence, any evidence, supports the specific conclusion “God exists.” As Swinburne writes, “in inductive arguments the premises support different conclusions with different degrees of force.” And Swinburne is concerned with how much, or to what degree, the evidence supports *the existence of God*; whether this support is strong or weak, it is nevertheless assessable.²¹ (Note too that the evidence may even hurt the likelihood of God’s existence, as Swinburne claims is the

case when the evidence is the existence of evil. In symbols we then have that $P(h|e \& k) < P(h|k)$ when e is the existence of evil.) To summarize, evidence may support God's existence, be irrelevant to God's existence, or disconfirm God's existence; but in each case we may assess the evidence as it affects God's existence. And this is precisely the task that Swinburne sets for himself.

A second form that the objection against cumulative arguments can take is that though it may be that each piece of evidence supports the existence of God to some degree, taken together the support may not increase; the evidence may not accumulate properly. This concern regarding cumulative arguments is more worrisome than the first, and has been a topic that Swinburne has been attacked on in the literature. In order to get a handle on the issue and to assess Swinburne's cumulative argument, it will prove helpful to consider four cases of cumulative arguments and discuss Swinburne's argument in light of the cases.

Case 1: Let us first consider a case in which the evidence clearly accumulates properly. That is, the evidence supports the same conclusion, and when it is considered together the conclusion becomes ever more likely. Imagine that a murder has been committed. Consider Henry. Given background evidence at the time of the murder, there is no great likelihood that Henry committed the murder. Thus, letting h be "Henry committed the murder" and k be mere background evidence, $P(h|k)$ is low. We might imagine that the murder occurred on an island with 1,000 people. Given no specific evidence, each person is equally likely to have done the crime,²² and thus $P(h|k) = 0.001$. But now imagine that a first piece of evidence, e_1 , is found: Henry's footprints are found at the scene of the crime. No other shoes on the island are a match. This evidence makes

it more likely that Henry committed the crime, that is $P(h|e1 \& k) > P(h|k)$. Perhaps $P(h|e1 \& k) = 0.05$. Next Henry's fingerprints are found on the murder weapon, a knife. Let this evidence be $e2$. Now note that this evidence, on its own, confirms the fact that Henry committed the murder. That is, $P(h|e2 \& k) > P(h|k)$. But what the police will do is combine this evidence with previous evidence, and ask if this evidence further increases the probability of Henry having committed the crime, that is: is Henry more likely to be guilty of murder given the fingerprints, $e2$, than simply given the footprints, $e1$, and background knowledge? One way to account for this question algebraically (and this is the method that Swinburne employs) is to let k be all of the old evidence when new evidence is found. Thus the question becomes: Is $P(h|e2 \& k) > P(h|k)$ when k = both $e1$ and background evidence? This amounts to asking whether or not the fingerprints further implicate Henry. The answer is clearly yes. Then imagine that a third piece of evidence is found, $e3$: Henry has pictures of the murder being committed. This further implicates Henry, that is $P(h|e3 \& k) > P(h|k)$, when k is $e2$ and $e1$ and background evidence. In this murder example, the evidence backs up the other evidence. That is, each piece of evidence not only raises the likelihood that Henry is guilty taken in isolation, but each successive piece of evidence further supports the probability of Henry's guilt assuming previous evidence. Case 1 is an example of a strong cumulative argument. However, not even Swinburne claims that his argument is as strong as case 1. To see why not, let us move to case 2.

Case 2: Imagine that a fourth piece of evidence is found, $e4$, which is that Henry has an almost airtight alibi; he was not on the island at the time of the murder. Note that if we consider this piece of evidence alone, the evidence disconfirms Henry's guilt. That is,

with e_4 as the alibi, h as Henry's guilt, and k as mere background knowledge: $P(h|e_4 \& k) < P(h|k)$. Above I assumed that $P(h|k)$ was 0.001. The alibi may taken the probability of Henry's guilt much lower, perhaps $P(h|e_4 \& k) = 0.00001$. Of course, the police already have three pieces of evidence implicating Henry, so they are interested in how the alibi, e_4 , affects the probability of Henry's guilt in light of that evidence. Thus the police would let $k = e_3$ and e_2 and e_1 and background evidence; that is, they would factor in all they knew and ask how e_4 affects the situation. Again $P(h|e_4 \& k) < P(h|k)$; the alibi makes it less likely that Henry did the crime taking all previous evidence into consideration. (Note that the exact value of $P(h|e_4 \& k)$ may be difficult to assess. In general it is difficult to arrive at precise values for these probabilities. Swinburne realizes that this difficulty also holds for the probabilities involved in his argument. In a later chapter I indicate why this lack of precision is a cause for concern, specifically the concern is that Swinburne's argument may be so imprecise as to fail.) Case 2 thus presents a straightforward example where a piece of evidence (e_4) disconfirms a hypothesis (h) alone, and also disconfirms a hypothesis in light of previous evidence (e_1 , e_2 , and e_3) that confirmed the hypothesis. One concern Swinburne faces is that the problem of evil may function much like the alibi. That is, the problem of evil may greatly lower the probability of God's existence, despite other evidence that confirms God's existence. In this thesis I do not focus on the problem of evil; however, in chapter 2 I show how Swinburne attempts to deflect the concern that the problem of evil functions like the alibi.

Case 3: Another example of how evidence may not accumulate properly is best presented with an example of tossing a die. The probability of tossing a 6, given only

background knowledge k , is $1/6$. Thus letting h be “a six was tossed,” and k be background knowledge, $P(h|k) = 1/6$. Let e_3 be “the roll was 3 or higher,” let e_4 be “the roll was 4 or higher,” and let e_5 be “the roll was 5 or higher.” Then note that in isolation each of e_3 , e_4 , and e_5 provide a good C-inductive argument to h . In particular, $P(h|e_3 \& k) = 1/4$, and thus $P(h|e_3 \& k) > P(h|k)$, as $1/4 > 1/6$. In words, the evidence of rolling a 3 or higher confirms, or supports, the likelihood of rolling a 6. The same holds true for e_4 and e_5 . Rolling a 4 or higher makes the likelihood of rolling a 6 equal $1/3$, that is $P(h|e_4 \& k) = 1/3$. Rolling a 5 or higher makes the likelihood of rolling a 6 equal $1/2$, that is, $P(h|e_5 \& k) = 1/2$. Each of e_3 , e_4 , and e_5 raises the probability of h , which is the probability of rolling a 6. *But the evidence does not accumulate.* If we assume e_3 and e_4 and e_5 , this is equivalent to assuming e_5 , that is, the probability of rolling a 6 given all of this evidence is the same as the probability of rolling a 6 given e_5 alone. Namely the probability is $1/2$. In symbols, $P(h|e_3 \& e_4 \& e_5 \& k) = P(h|e_5 \& k) = 1/2$. One piece of evidence raises the conclusion to $1/4$, one piece raises that conclusion to $1/3$, and one piece to $1/2$. We might then hope that all together the evidence would raise the probability of the conclusion well above $1/2$; the crucial point is that this accumulation of evidence does not occur. In essence one piece of evidence (e_5) is strongest (and in fact logically implies the other two pieces of evidence), and in light of this strength of e_5 , the other two pieces of evidence are irrelevant. Might this example of evidence not properly backing up other evidence undermine Swinburne’s argument?

The reply to this concern is twofold. First we must to note the distinction between serial and parallel; Swinburne considers the evidence in serial, that is, one piece of evidence after another, and in each case he explicitly argues that the new piece of

evidence increases the probability of God's existence, *assuming the old evidence*.

Whether his arguments to this effect succeed or not we must investigate. But it is not the case that he considers the evidence in parallel, that is, in isolation, and then somehow hopes that the evidence magically combines. So for example, Swinburne first considers a form of the cosmological argument, the evidence is the existence of the universe.

Swinburne argues that this evidence increases the probability that God exists. He then considers forms of teleological arguments, now assuming the existence of the universe as background evidence, *k*. He argues that the teleological arguments further increase the probability that God exists, assuming the cosmological arguments previously considered.

The evidence continues to be fed in to Bayes's Theorem in this serial manner. The serial and cumulative nature of Swinburne's argument has been missed by several authors, who mistakenly criticize Swinburne on this point. Grunbaum brings forth the following criticism of Swinburne's argument, "Two separate items of evidence e_1 and e_2 can each separately provide positive incremental confirmation for a given h , while their conjunction $e_1 \& e_2$ incrementally disconfirms h !"²³ But Grunbaum seems to be missing the serial nature of Swinburne's strategy, that is, Swinburne never separately considers e_1 and e_2 . He considers e_1 , and then considers e_2 while taking into account e_1 as well in the form of background evidence, which really amounts to considering $e_1 \& e_2$. Thus Grunbaum's criticism has no force. Jordan Sobel makes a similar attack on Swinburne, to which Swinburne replies:

Sobel's first main criticism is that I argue illegitimately from each datum [piece of evidence] raising the probability of theism ... to the conjunction

of all the data raising the probability of theism. But I stated at the beginning of the book (p.14) that my strategy was going to be to ‘ask how much the premises of each argument ... add or subtract from the force of the previous arguments....’ That is, I was not going to consider each argument in isolation from what had been established previously.²⁴

One concern with this reply that the evidence is being considered serially is that even if the evidence from the die tossing example were considered serially (e3 then e4 then e5) then e3 and e4 would still have no force. I believe that the reply here must be that there is a crucial distinction between statistical probabilities and logical probabilities. I will discuss probabilities at the end of this chapter, but the crucial point at this juncture is that the evidence that Swinburne considers is not at all like the die tossing example’s evidence, rather it is like the murderer’s example. Specifically, each new piece of evidence does add information over and above previous evidence, which was not the case with the die example. Thus I find it unlikely that some piece of evidence for God’s existence would carry all the weight and force of some other piece of evidence; of course, Swinburne will argue that most pieces of evidence increase the probability of God’s existence; we turn to his argument in chapter 2 of this thesis.

Case 4: Finally, there is a complex manner in which evidence can not accumulate properly which was discussed by Grunbaum above. Let us turn to this case. Grunbaum wrote, “Two separate items of evidence e1 and e2 can each separately provide positive incremental confirmation for a given h, while their conjunction e1&e2 incrementally disconfirms h!”²⁵ Above, I noted that Swinburne never considers the evidence separately;

rather, he considers evidence in the manner of the police in cases 1 and 2, that is, he considers new evidence while at the same time factoring all of the “old” evidence.²⁶ However, it will still prove useful to present an example which illustrates what Grunbaum is discussing, so that we may further dispel the worry that Swinburne is falling into this error.

Let us now turn to an example where two pieces of evidence, taken in isolation, confirm a hypothesis, but where those two pieces of evidence, taken together, disconfirm that same hypothesis. For my example to work several details are needed. Imagine that a complex robbery was committed in Ohio. The crime required at least three people to perform successfully. The crime was of such difficulty that only two crews of thieves could be responsible. Crew 1 is comprised of four people who love to play bridge. When all four are in Ohio, as is usual, all that they generally do is play bridge; they almost never commit crime. Let h be the hypothesis “Crew 1 committed the crime.” Then solely on this background evidence, k (which includes Crew 1’s penchant for bridge playing), $P(h|k)$ is very low, that is, the probability that Crew 1 committed the crime is low since they most likely were in Ohio and playing bridge. Now let e_1 be “Timmy, a Crew 1 member, was in Alabama on the night of the crime.” Then $P(h|e_1 \& k) > P(h|k)$, that is, it becomes more likely that Crew 1 did the crime with Timmy in Alabama, as the crew could not play bridge; they were free to commit crime. Let e_2 be “Jimmy, a Crew 1 member, was in Alabama the night of the crime.” Again $P(h|e_2 \& k) > P(h|k)$ for the same reason as with e_1 . Each of e_1 and e_2 , *considered separately*, raises the probability of h . However, note what happens when we combine e_1 and e_2 , which notationally is $e_1 \& e_2$, and in words is that Timmy and Jimmy were both in Alabama on the night of the crime.

$P(h|e_2 \& e_1 \& k) < P(h|k)$, and in particular $P(h|e_2 \& e_1 \& k)$ may very well be close to 0 since the crime took at least 3 people to commit, and Crew 1 has only 2 members in Ohio when Timmy and Jimmy are in Alabama. The key point is that e_1 and e_2 *separately confirm* h , but *taken together disconfirm* h . When considering the evidence in chapter 2 we will remain alert to this possibility. However, two features of Swinburne's argument make it unlikely that he will fall into this trap. First, as mentioned above, he considers the evidence serially, never separately. Thus this example of case 4 is largely disanalogous to Swinburne's argument. Simply put, except in the case of the first piece of evidence, e_1 , Swinburne never considers one piece of evidence in isolation. New evidence is considered in light of, or in addition to, old evidence. Second, the example above had a number of complex and somewhat contrived features which allowed the evidence to be in tension and disconfirming of h when taken together, though supportive of h when taken separately. I do not believe that Swinburne's argument contains such features. Thus, though it is good to be aware of the possibility of evidence not accumulating properly in the complex manner discussed above in case 4, it is unlikely that case 4 will prove relevant to Swinburne's argument.

Having considered these four cases, let me state that to my knowledge the argumentative strategy of considering many traditionally separate arguments together is novel in the philosophy of religion. As Swinburne writes:

One unfortunate feature of recent philosophy of religion has been a tendency to treat arguments for the existence of God in isolation from each other. There can, of course, be no objection to

considering each argument initially, for the sake of simplicity of exposition, in isolation from others. But clearly the arguments may back each other up or alternately weaken each other, and we need to consider whether or not they do.²⁷

Here I believe that Swinburne is correct, and that his approach in attempting to prove God's existence is novel, exciting, and potentially successful.

4. Probability

Before turning to the specific evidence that Swinburne considers, there is one further major structural feature of Swinburne's argument which needs to be discussed, namely the nature of the probabilities which Swinburne is discussing. Above I discussed evidence and theories. The evidence and theories are propositions. Probabilities are then assigned to propositions and relations between propositions. One proposition might be "God exists," whereas another might be "there is a physical universe." Then we are interested in the probability that God exists given that there is a physical universe. As Strevens writes, "In probability mathematics, probabilities may be attached either to events ... or to propositions, such as the proposition 'It will rain tomorrow'."²⁸ Applying probabilities to propositions and relations between propositions is called inductive probability, and it is the probability Swinburne works with in *The Existence of God*. Inductive probability is neither statistical probability nor physical probability:

Inductive probability is thus to be distinguished from statistical probability, which is a property of classes of things (for example, inhabitants of a certain town, say Tunbridge Wells) and is a measure of the proportion of things in the class that have some other property (for example, voting Conservative in the 2001 Election). The probability of an inhabitant of Tunbridge Wells voting Conservative in 2001 is just the proportion of inhabitants of Tunbridge Wells who voted conservative in 2001.... Inductive probability is also to be distinguished from physical probability. The physical (or natural) probability of an event (and so of the proposition that records it) is a matter of the extent to which at some earlier time the event is predetermined by its causes.²⁹

The most common probability is statistical probability. When a high school student considers the probability of selecting a red ball from a hat given that there are 10 red balls and 13 black balls in the hat, this is statistical probability. A different type of probability, physical probability, arises in several settings. A physicist who considers whether the path taken by an electron is truly random is concerned with physical probability. Inductive probability³⁰ is used by Swinburne to assess how probable evidence renders hypotheses, where both the evidence and hypotheses are taken to be propositions. Swinburne makes this point and stresses the objective and a priori nature of such probabilities as follows:

My concern with inductive probability is a concern with how probable q makes p , quite apart from who is doing the calculation, how clever he is, and his degree of confidence in the evidential force of q . Clearly in science and history and all other empirical inquiries we think that there are correct ways to assess whether and (within rough limits) how much some evidence supports some hypothesis.... In order to emphasize the objective character of the value $P(p|q)$ with which I am concerned and to distinguish it from measures of evidential support that measure subjects' degree of confidence ...I shall in future call $P(p|q)$ the logical probability of p on q . This is clearly an a priori matter.³¹

That is, there are various forms inductive probabilities can take. A main question is whether the inductive probabilities are taken to be subjective or objective. If taken subjectively, then the probabilities vary subject to subject. Swinburne is taking the probabilities objectively, and thus they do not depend on any subject. Swinburne calls these inductive probabilities logical probabilities to stress the objective nature of the probabilities. I note, but do not consider in depth, that such objective inductive probabilities have fallen out of favor in recent years; most philosophers of science prefer a subjective account of inductive probabilities. I will grant Swinburne the use of his logical probabilities, and in later chapters critique him on other grounds. In particular and as noted, I critique Swinburne's use of simplicity. Swinburne gives an example of how these probabilities may be employed:

p may be some scientific hypothesis—say, Einstein’s General Theory of Relativity—and q may be the conjunction of all reports of the evidence of observation and experiment that scientists have collected relevant to the theory. Then $P(p|q)$ represents the inductive probability of Einstein’s General Theory given all the reports of relevant experiments and observations.³²

Note that in the example above, $P(p|q) > P(p)$, that is, q confirms p. Swinburne gives another example of the relationship between evidence and a hypothesis, namely, just as evidence can support the hypotheses of astronomers or Darwin, so too can evidence support (or count against) the hypothesis that God exists:

The various astronomical observations made by Tycho Brahe, Kepler, Galileo, and other men of the 17th century were observations that favored Newton’s theory of motion, in the sense that they made it more likely to be true, more probable, than it would have been otherwise. The various botanical, geological, and breeding data described by Charles Darwin in the origin of species added to the probability of his theory of the evolution of animal species by natural selection of variations.³³

Swinburne is going to claim that, in a similar manner, most of the evidence he considers makes it more likely that God exists (as compared with the probability of God existing without considering the evidence), and ultimately, Swinburne claims that the existence of God is probable.

5. Conclusion to Chapter 1

Many people, including Richard Swinburne, believe that no deductive argument succeeds in proving God's existence. In *The Existence of God* Swinburne puts forth a cumulative, inductive argument designed to show that God likely exists. He considers eleven pieces of evidence and feeds each piece of evidence into Bayes's Theorem. For most of the evidence, he claims that that piece of evidence provides a good C-inductive argument to God's existence, which is to say that the evidence increases the probability that God exists. All of the evidence taken together, Swinburne claims, provides a good P-inductive argument to God's existence, which is to say that, once all the evidence is considered, God exists with a probability over 50%. Swinburne claims that this probability is objective, meaning that it does not depend on a subject in any way.

In this chapter I outlined Swinburne's argument to God's existence, discussed several key structural features of his argument, and considered various ways in which evidence might not accumulate properly in cumulative arguments. In the next chapter we take a closer look at the evidence. Two crucial questions are: (1) Does Swinburne's evidence accumulate properly, thereby justifying his conclusion that God most likely

exists? (2) What role does simplicity play in Swinburne's argument that the evidence makes God's existence probable?

Notes

¹ See Cahn (2006, chs 1 and 2) for a discussion of the three most common deductive arguments for the existence of God as well as a discussion of the problem of evil, the most common deductive argument against the existence of God. Cahn concludes that none of these four arguments succeeds, though for different reasons than the one presented above.

² McNaughton, "Is God (almost) a consequentialist? Swinburne's moral theory," 266.

³ Swinburne, *The Coherence of Theism*, 5.

⁴ Swinburne *The Existence of God*, v.

⁵ Swinburne *The Existence of God*, 1.

⁶ Swinburne *The Existence of God*, 2.

⁷ Schellenberg (2002) focuses on Swinburne's tetralogy, and has some very interesting comments on those four works of Swinburne. I focus on Swinburne's trilogy, but I reference Schellenberg where relevant.

⁸ Plantinga (2001) gives an interesting argument that downplays the importance of the (public) evidence for God's existence (though he might deny this characterization). Does it matter whether or not God exists? For a discussion of what Swinburne believes is at stake see his "Morality and God," where he draws ethical conclusions that he believes follow from God's existence, nature, and will.

⁹ Strevens (2006) provides an excellent introduction to Bayes's Theorem.

¹⁰ Smith (1997) and Deltete (1998) form an interesting debate as to whether God or the Big Bang forms a simpler explanation of the existence of the universe. Below I discuss Swinburne's view on this issue.

¹¹ Swinburne *The Existence of God*, 5.

¹² This point is made in Bradley's, "Hume's chief objection to natural theology," 255.

¹³ Swinburne *The Existence of God*, 8.

¹⁴ The remainder of this paragraph closely follows Swinburne *The Existence of God*, 16-17.

¹⁵ Swinburne *The Existence of God*, 16-17.

¹⁶ Swinburne *The Existence of God*, 17.

¹⁷ However, it is important to note that Swinburne is not dealing with statistical probabilities; the nature of the probabilities he is working with is discussed below.

¹⁸ Swinburne *The Existence of God*, 70. This method of ascertaining whether or not $P(h|e \& k) > P(h|k)$ holds is not as important to Swinburne's argument as the first.

¹⁹ Often Swinburne will employ the second of these methods, that is, in order to argue that $P(h|e \& k) > P(h|k)$ he will argue that $P(e|h \& k) > P(e|k)$, which says that the evidence is more likely given God's existence than on mere tautological evidence (or whatever k happens to be at the time). In words, theism better explains (makes more likely) the evidence than does agnosticism.

²⁰ Swinburne *The Existence of God*, 18.

²¹ Swinburne *The Existence of God*, 18.

²² The assumption that, in the absence of a reason otherwise, each person is equally likely to have done the crime is an application of a probabilistic principle known as the Principle of Indifference. This principle will be discussed at greater length in subsequent chapters of this thesis.

²³ Grunbaum, "A New Critique of Theological Interpretations of Physical Cosmology," 37.

²⁴ Swinburne, "'Logic and Theism by Jordan Howard Sobel," 485.

²⁵ Grunbaum, "A New Critique of Theological Interpretations of Physical Cosmology," 37.

²⁶ I put "old" in quotations marks because in the police-murder example there is a clear manner in which time plays a role. Swinburne's choice as to how to feed the evidence into Bayes's Theorem is arbitrary, at least in the sense that the order cannot affect the final probability of God's existence once all evidence is considered.

²⁷ Swinburne *The Existence of God*, 15.

²⁸ Strevens, "Notes on Bayesian Confirmation Theory," 9.

²⁹ Swinburne *The Existence of God*, 15.

³⁰ Hasker correctly points out that “Most probability theorists have now abandoned this logical, a priori conception of probability. The most widely accepted alternative is a subjective conception of probability which allows the initial probabilities to be set individually, in terms of each person’s propensity to believe a given proposition.” Hasker, “Is Christianity probable?,” 257. I grant Swinburne his use of probabilities, and critique him on other grounds.

³¹ Swinburne *The Existence of God*, 15-16.

³² Swinburne *The Existence of God*, 14.

³³ Swinburne *The Existence of God*, 5.

Chapter 2: The Evidence

1. Introduction

In arguing that God likely exists, Swinburne provides a cumulative argument to God's existence, which means that he considers pieces of evidence, each of which may confirm God's existence, disconfirm God's existence, or have no effect on the probability of God's existence. It is important to recall that each piece of evidence is considered in light of previous evidence, which is the manner in which the police would proceed in a criminal case (discussed in Cases 1 and 2 in chapter 1). When new evidence arises the question becomes: Does this evidence make it more (or less) likely that God exists given all of the old evidence? The purpose of this chapter is to consider the evidence that Swinburne feeds into his argument. The key question in each case is: Does this evidence make it more (or less) likely that God exists given all of the old evidence?

Before proceeding let us consider and respond to the concern that the order that the evidence is fed into Bayes's Theorem may change the resulting probability. That is, in scientific discovery (or criminal cases) there is a natural temporal aspect to the evidence. Evidence is discovered through time, and this determines the order that the evidence is fed into Bayes's Theorem. Swinburne's feeding of evidence into Bayes's Theorem is disanalogous in that he is determining the order that the evidence is fed into Bayes's Theorem. The concern is that the probability that God exists may vary based on the order in which the evidence is considered. However, the order is not important (in no case, that is, the order is not important in scientific discovery, in criminal investigations, or in

Swinburne's consideration of evidence). This is not the place for a full proof of this fact, but note that it seems intuitive that the order that, e.g., evidence is discovered in a murder case should not affect the probability of Jones's guilt. If the shoe print is found before the finger print or vice versa, given both these clues the probability that Jones's committed the crime should be the same in both cases.

In this chapter I first discuss the evidence and its relation to Bayes's Theorem. I then present a brief overview of the eleven pieces of evidence. Next I consider one piece of evidence in some depth: the cosmological argument. I consider this argument because it is Swinburne's first piece of evidence, it exhibits several important features of his other arguments from evidence, and it introduces important considerations pertaining to simplicity. Then I demonstrate the way in which the argument is meant to proceed mathematically.

If a piece of evidence, e , provides a good C-inductive argument to God's existence, it raises the probability that God exists; in the notation of Bayes's Theorem, $P(h|e \& k) > P(h|k)$, where h is the hypothesis God exists, e is the new piece of evidence under consideration, and k is all of the evidence previously considered as well as background knowledge. That is, when considering each piece of evidence, the key issue is the value of $P(h|e \& k)$, where the issue of crucial importance is the whether or not $P(h|e \& k)$ is greater than $P(h|k)$.

Recall that Bayes's Theorem is:

$$P(h|e \& k) = P(e|h \& k) P(h|k) / P(e|k)$$

One main method that Swinburne employed to show that $P(h|e \& k) > P(h|k)$ was to show that $P(e|h \& k) > P(e|k)$. Recall that it logically follows that if $P(e|h \& k) > P(e|k)$ then $P(h|e \& k) > P(h|k)$. The evidence that Swinburne considers presents a series of (what he considers mostly to be) *good C-inductive arguments* to God's existence, that is, that the evidence makes it more likely that God exists. However, his ultimate conclusion is that these arguments present, cumulatively, a good P-inductive argument to God's existence, that is, that God most likely exists. The problem is that there is a wide gap between C- and P-inductive arguments. As was noted in chapter 1, good C-inductive arguments can be profoundly weak; they can raise the probabilities of their conclusions ever so slightly. Here is a specific example of how Swinburne's argument, even if he presented 11 good C-inductive arguments (though not even he claims that he does), might fail to be a good P-inductive argument:

$$P(h|k) = 0.0001$$

$$P(h|e_1 \& k) = 0.0002$$

$$P(h|e_2 \& k) = 0.0003$$

...

$$P(h|e_{11} \& k) = 0.0012$$

k is mere tautological evidence in the first two cases, and then (from e_2 on) is all of the previous evidence considered). Here we have 11 good C-inductive arguments, but we are not close to a good P-inductive argument. I do not believe that Swinburne has made his case that his C-inductive arguments are "good enough" to reach the level of a

good P-inductive argument. Even he realizes that it is very difficult to come up with precise values for the probabilities, but I suggest that this presents serious problems for his argument. Though I suggest that the evidence does not make for a persuasive argument, I believe that considerations of simplicity can be used to show conclusively that Swinburne's argument fails. In chapter 6 I return to these topics of the lack of precision in Swinburne's argument and the issue of whether he has presented a good P-inductive argument.

Consider again the numerical argument above, and note that even if we are presented with relatively strong C-inductive arguments, if the initial value, or probability is very low, even strong C-inductive arguments may not raise the probability above 50%. In Swinburne's argument, the initial value is $P(h|k)$, where k is mere tautological evidence. And Swinburne argues that the main determinant of $P(h|k)$ is simplicity. Thus one main reason to focus on simplicity is to attempt to arrive at the value of $P(h|k)$, which to reiterate, is the initial value at which Swinburne's probabilities start.

2. An Overview of The Evidence

Swinburne directly considers various evidence, and feeds it into Bayes's Theorem. For most of the evidence, Swinburne argues that the evidence provides a good C-inductive argument to God's existence. Recall that a good C-inductive argument is one in which the evidence, e , raises the probability of God's existence. What follows is a brief summary of the evidence. First I list the evidence in a table, as well as whether

Swinburne claims that the evidence confirms God's existence, disconfirms it, or has no effect:

e1. The Cosmological Argument	Confirms
e2. The Teleological Argument – Temporal Order	Confirms
e3. The Teleological Argument – Spatial Order	Confirms
e4. The Argument from Consciousness	Confirms
e5. The Argument from Morality	Confirms
e6. The Argument from Providence	Confirms
e7. The Argument from Evil	Disconfirms
e8. The Argument from Hiddenness	No Effect
e9. The Argument from History	Confirms
e10. The Argument from Miracles	Confirms
e11. The Argument from Religious Experience	No Effect

I first give a brief overview of e2 thru e11, and then consider e1 in more detail.

Swinburne's second and third pieces of evidence are two forms of teleological arguments, "An argument from a general pattern of order I shall call a teleological argument."¹ Swinburne considers the temporal and spatial order of the universe, which is evidence e2 and e3, respectively. "The orderliness of the universe is a very striking fact about it."² The main point made by Swinburne is that both spatial and temporal order are far more likely on the hypothesis of theism than without this hypothesis. Both forms of order would be very unlikely to exist in the absence of God, but are likely to be found on

the hypothesis of theism. Thus these two teleological arguments are each good C-inductive arguments for the existence of God. One move of Swinburne's seems to be too swift. When discussing the possibility of a scientific explanation for temporal order, he writes, "But clearly total chaos at a fundamental level will lead to chaos at any other level."³ I do not know, nor does Swinburne explain, exactly what he means by "total chaos." But there are many examples (both mathematical and physical) of order arising out of chaos, which may mean that order is not as complex as Swinburne claims insofar as order itself might arise out of chaos, or complexity, at a lower level.

Swinburne next considers arguments from consciousness and morality, which are e4 and e5, respectively. Again Swinburne argues that such features of our world are unlikely to arise if God does not exist, but more likely to exist if God exists:

My claim is that, like each of the other phenomena discussed, there is no great probability that moral awareness will occur in a Godless universe, and an increasingly large improbability, as we consider more and more phenomena, that they will all occur—for example, not merely will there be a universe, but it will be governed by simple laws, etc., etc., and contain conscious beings with moral awareness.... God has significant reason to bring about conscious beings with moral awareness...and so to bring about all the phenomena discussed previously that are necessary for their existence.⁴

Again the idea is that for the various pieces of evidence, $P(e|h \& k) > P(e|k)$, which implies that $P(h|e \& k) > P(h|k)$, that is, e confirms h . In words, because the evidence is more likely if God exists than in the absence of this assumption, the evidence increases the probability of God's existence, or confirms God's existence.

Swinburne then discusses what he calls the argument from Providence, e_6 :

If we had choices between forming intentions to do good actions and intentions to do bad actions, but our intentions never made any difference to what happened, we would be living in a deceptive world. A good God would not subject us to such radical deception. And a God who wished to give us significant free choices would give us efficacious choices, choices that made important differences to ourselves, each other, and the physical world... This argument from the opportunities we have for making significant differences I call the argument from Providence.⁵

Swinburne goes on to argue that there are many possible worlds, some in which humans have too little power over each other and over their own lives, some in which they have too much. As one extreme, choices might not matter at all; the universe could be set up so that the creatures in it hardly interacted at all. On the other extreme, humans might be able to cause each other to suffer endlessly, for example, if humans were immortal.⁶ God has reason to give us the appropriate amount of power over each other and our own lives, whereas the appropriate level arising in the absence of God is less

likely. That is, with the evidence being that humans have the appropriate level of power over one another $P(e_6|h \& k) > P(e_6|k)$. And of course, when $P(e_6|h \& k) > P(e_6|k)$, it follows that $P(h|e_6 \& k) > P(h|k)$, that is, the evidence considered (from the argument from Providence) confirms God's existence.

Swinburne next considers the problem of evil, e_7 , and allows that evil is a good C-inductive argument *against* the existence of God, that is, $P(h|e_7 \& k) < P(h|k)$, the crucial symbol here being the less-than symbol. Swinburne provides a greater goods defense to mitigate the loss of probability of God's existence in the face of evil. As Paul Draper writes discussing Swinburne's *Providence and the Problem of Evil*, "Swinburne's goal is to specify, for every single evil in the world, goods that would justify God's allowing that evil."⁷ Swinburne's main move against the problem of evil is a free will defense. In the first chapter I discussed the worry that the problem of evil may act like a solid alibi in a murder case. That is, even if there is some evidence that Henry committed the crime, if he has an alibi then the probability that he committed the crime will be very low. The worry is that even if the other evidence Swinburne considers raises the probability that God exists, the problem of evil may make it very unlikely that God exists. The focus of this thesis is not on the problem of evil, a complex and much discussed issue. I will ultimately conclude that, even granting Swinburne his claims regarding the problem of evil, his argument still does not succeed in showing that God likely exists. Swinburne's argument fails due mainly to the fact that simplicity does not do the work that he claims it does. This failure due to simplicity means that we are able to largely bypass the contentious issue of the problem of evil.

Next Swinburne presents arguments from history and miracles, e9 and e10, respectively. Swinburne argues that certain events in history were more likely to occur if God exists than if not. “I argued at the beginning of this chapter that there are certain events in human history of the occurrence of which there is no doubt that are such that God has some reason to bring about, and that are more likely to occur if there is a God than if there is not.”⁸ That is, $P(e|h \& k) > P(e|\sim h \& k)$, which implies that $P(h|e \& k) > P(h|k)$, that is, history confirms God’s existence. A similar argument is put forth for miracles, that is, Swinburne claims that miracles are more likely given God’s existence than in God’s absence.⁹

The argument from religious experience is the final piece of evidence considered by Swinburne; it is e11. Swinburne argues that since people experience God, we should take their experiences at face value. John Pauley notes the troublesome nature of this assumption of Swinburne’s, “[Swinburne] assumes that the following ‘principle of testimony’ is true: ‘we should believe what others tell us they have done or perceived – in the absence of counter evidence’.”¹⁰ A main problem is that the religious experiences of people are contradictory. Swinburne gives an interesting reply, namely that different religious experiences do not necessarily conflict:

... a Greek’s claim to have talked to Poseidon is not necessarily in conflict with a Jew’s claim to have talked to the angel who watches over the sea; it is so only if to admit the existence of Poseidon is to commit one to a whole polytheistic theology, and there is no need to suppose that generally it is.¹¹

What about when the claims do conflict? Then, Swinburne argues, there can be other grounds to settle the conflicting claims.

Among those grounds may be that others have had conflicting experiences and that their experiences are more numerous and better authenticated; but there may be many grounds of other kinds as well. The subject of religious experience need not in such a case withdraw his original claim totally; he need only describe it in a less committed way—for example, claim to have been aware of some supernatural being, not necessarily Dionysus (as originally claimed).¹²

The implication here is that those who have religious experience of some type of deity other than the Christian God simply have to modify their claim to having been aware of “some supernatural being,” presumably the Christian God. By so arguing Swinburne claims that the argument from religious experience confirms the probability of God’s existence.

In the above section I hope to have given a brief overview of the evidence that Swinburne considers. In the next section I consider one piece of evidence in detail.

3. e1: The Cosmological Argument

In this section I will consider one of Swinburne's arguments, the cosmological argument, in some detail. This argument is the first piece of evidence that Swinburne's considers in support of God's existence, that is, the cosmological argument is e_1 . A reason for considering this piece of evidence specifically is that it will allow me to introduce several themes which run throughout the remaining chapters of this thesis; one very important such theme being simplicity. Another important feature of the cosmological argument is that the way that Swinburne uses this evidence to argue for God's existence is similar to the way that he uses the other evidence. Thus, though the evidence presented above was considered very briefly, I don't think it necessary to go through each piece of evidence in detail. The structure of Swinburne's cosmological argument runs throughout his consideration of the other evidence.

Recall that Swinburne wrote, "I shall consider some eleven arguments. I shall claim that for most of these e_n , where $n = 1, \dots, 11$, $P(h|e_n \& k) > P(h|k)$ —that is the argument is a good C-inductive argument for the existence of God..."¹³ As we have seen, the overall strategy that Swinburne pursues is to argue that various a posteriori features of the universe are more likely given that God exists than in the absence of this assumption, from which it logically follows that God's existence is more likely given the evidence than in its absence, i.e., $P(h|e_n \& k) > P(h|k)$. With e_1 , Swinburne's cosmological argument, the evidence is the existence of a complex physical universe (but not specific features of the universe, such as, e.g., human consciousness).

To begin, let us consider what Swinburne means by "physical universe." "I understand by a physical universe a physical object consisting of physical objects physically related to each other and to no other physical object.... Our physical universe,

the universe, is the physical object that consists of all physical objects including the earth, ... [the planets], things on them, and gasses between them.”¹⁴ Swinburne allows for the possibility that there may be many universes, known as a multiverse, which would be the case if there were other objects in existence that were not spatially related to the objects in our universe. However, whether or not there is a multiverse does not affect Swinburne’s cosmological argument, for whether there are one or many universes, at the least this universe exists, which is the launching point for Swinburne’s cosmological argument.

Swinburne initially addresses the concern that we can know nothing of the origin of the universe, as we only have knowledge of one universe. Swinburne replies that if this concern were valid, physical cosmology would not be possible. That is, we could not know about, e.g., the size or rate of expansion of the universe. And yet it seems clear that we can, at least in principle, know such things. As most people believe that physical cosmology is a valid area of study, Swinburne rejects this concern that we can know nothing regarding the origin of the universe. Swinburne also points out that “Uniqueness is relative to description.”¹⁵ That is, there will always be a way to describe anything uniquely, and other ways of describing any object in a manner which is not unique. For example, describing a bit of iron by giving its exact location in space is a unique description. Describing the same bit of iron as a bit of iron is not unique, for there are many bits of iron. The universe is unique when described as everything physically related to the earth. However, describing the universe as “objects distributed in space” renders it not unique, for such a description also describes, e.g., the solar system.¹⁶

Having laid out the framework within which Swinburne's cosmological argument will take place, let us turn to the argument. The best way to approach his cosmological argument is by considering two questions that arise when considering cosmological arguments in general. The first is: Could there be a scientific explanation of the universe? The second is: Why not accept the universe as a brute fact? (That is, if everything needs an explanation, then so too does God. If God does not need an explanation, neither does the universe.) Let us tackle these questions in order.

There is a complex physical universe. Swinburne argues that there are four possible explanations of this physical universe: God, some other personal (or intentional) explanation, a scientific explanation, or no explanation (that is, the universe is a brute fact). Swinburne first rules out a scientific explanation for the universe. Swinburne notes that the state of the universe today (S_1) has a scientific explanation in terms of past states of the universe together with the laws of nature (L), which leads to the following picture:

$$\begin{array}{ccccccc} & L & & L & & L & & L \\ \dots S_5 & \rightarrow & S_4 & \rightarrow & S_3 & \rightarrow & S_2 & \rightarrow & S_1 \end{array}$$

Earlier states are denoted by larger numbers, and each state is assumed to last for some finite amount of time, e.g., 1 second. An immediate question which arises is whether the universe is of finite or infinite age. Swinburne argues that, whether finite or infinite, the universe has no scientific explanation. Swinburne argues, contra Hume, that if the universe is of infinite age, then an explanation for each of an infinite number of states does not provide an explanation for all of the states taken as a whole. On this subject Hume wrote:

In...a chain...or succession of objects, each part is caused by that part which preceded it, and causes that which succeeded it. Where then is the difficulty? But the whole, you say, wants a cause. I answer that the uniting of several parts into a whole, like the uniting of several distinct countries into a kingdom, or several distinct members into one body, is performed merely by an arbitrary act of the mind, and has no influence on the nature of things. Did I show you the particular causes of each individual in a collection of twenty particles of matter, I should think it very unreasonable, should you afterwards ask me what was the cause of the whole twenty. This is sufficiently explained in explaining the causes of the parts.¹⁷

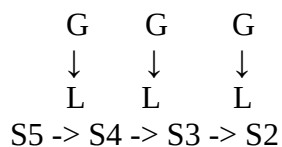
To assess the worth of Hume's argument, Swinburne develops an account of full explanations which rules out, by definition, the possibility of a full explanation involving a member of that which is to be explained. Thus, concludes Swinburne:

The same result follows if the universe is infinitely old (and so its history consists of the occurrence of an infinite collection of past states each lasting for the same finite time). The whole infinite series will have no full explanation at all, for there will be no causes of members of the series lying outside the series. In that case, the existence of the universe over infinite time will be an inexplicable brute fact. There will be an

explanation (in terms of laws) of why, once existent, it continues to exist.

But what will be inexplicable is its existence at all throughout infinite time. The existence of a complex physical universe over finite or infinite time is something ‘too big’ for science to explain.¹⁸

In essence Swinburne has decreed, by definition, that a full explanation must lie outside of that which is to be explained. Having ruled out a scientific explanation of the universe, Swinburne suggests that there may be a personal explanation of the creation and sustention of the universe by person G. The picture is:



G then ensures by an intention continuing over infinite time that the whole infinite series of states exists. If the universe is only of finite age and so has a first state, then there is the possibility that a person G causes this first state as a basic action, and, by subsequently continuously making the laws of nature to operate (again, by a basic action), keeps the universe in being. In either case G by his intention over the whole time the universe has existed would—given that his own existence and intentions at each moment of time are uncaused—provide not merely a complete, but an ultimate explanation of the existence of the universe.¹⁹

Two key features of G are that G keeps the laws of nature in operation and G is uncaused. But now a worry arises, namely, how do we get to the properties of this person G? Swinburne gives his answer in a section entitled, “The Argument to God.” In brief, Swinburne uses simplicity to arrive at God, “...the simplest explanation is, other things being equal, the most probable. Hence it is more probable, if there is such a G, that there is the simplest kind of G; and that...is a G of infinite power knowledge, knowledge, and freedom—that is, God.”²⁰

Swinburne considers Hume’s argument in the *Dialogues* that polytheism is “at least as good an explanation of the existence of the universe as is theism,”²¹ but uses the consideration of simplicity to rule out as very unlikely the hypotheses of finite or many gods. I postpone a further discussion of Hume and simplicity until chapter 4, but to preview, Swinburne uses the simplicity of 1 and the infinite to argue that one person infinite on certain properties is simplest.²²

In addition to simplicity, Swinburne brings forth two further arguments against polytheism. He jumps ahead and recognizes that there is order in the universe (which is evidence he considers in depth in the next chapter of *The Existence of God*, chapter 8 on teleological arguments.) First, “If this order in the world is to be explained by many gods, then some explanation is required for how and why they cooperate in producing the same patterns of order throughout the universe.... The need for further explanation ends when we postulate one being who is the cause of the existence of all others, and the simplest conceivable such—I urge—is God”²³ Second, “...the power of polytheism to explain this order in the world is perhaps not as great as that of theism. If there were more than one deity responsible for the order of the universe, we would expect to see characteristic

marks of the handiwork of different deities in different parts of the universe, just as we see different kinds of workmanship in the different houses of a city.” Put in the notation of Bayes’s Theorem, the claim is that $P(e|h) > P(e|p)$, that is, the probability of the evidence (e) (which at this point is the universe and the existence of order in the universe) is greater given theism (h) than given polytheism (p).

Swinburne thereby has dismissed both a scientific explanation of the universe as well as a personal explanation that does not involve God. But a classic objection to cosmological argument is that, if we assume that everything needs a cause, then God too needs a cause. Put differently, if we are going to stop at God as a brute, unexplained fact, then why not just stop at the universe as a brute, unexplained fact? The way that Swinburne responds to this question is to appeal to Bayes’s Theorem. He argues that the universe is a complex thing. Even if the universe began from a simpler state, the universe is still quite complex. By contrast, Swinburne claims that God is simple:

...the supposition that there is a God is an extremely simple supposition; the postulation of a God of infinite power, knowledge, and freedom is the postulation of the simplest kind of person that there could be. God is an unextended object, the divine properties fit together, and they are properties of infinite degree; we saw in chapter 3 that infinite degrees of a property have a simplicity lacked by large finite degrees of the same property.²⁴

Let us continue and imagine that Swinburne has established that God is simple. Swinburne next argues that if God exists, then the probability of the existence of the universe $[P(e|h \& k)]$ is high. So he has established that $P(e|h \& k) > P(e|\sim h \& k)$, which is one of the ways of establishing that e is a good C-inductive argument to h . Thus Swinburne concludes that his cosmological argument succeeds:

The argument of the last few pages can now be put in simple words as follows. There is quite a chance that, if there is a God, he will make something of the finitude and complexity of a universe. It is very unlikely that a universe would exist uncaused, but rather more likely that God would exist uncaused. Hence the argument from the existence of the universe to the existence of God is a good C-inductive argument.²⁵

This overall argument fundamentally involves simplicity. The universe is very complex, and therefore is unlikely to exist uncaused. God, in virtue of being simple (Swinburne claims) is more likely to exist uncaused. Thus God is a more natural stopping place for ultimate explanation than is the universe. This then is the general outline of Swinburne's cosmological argument. In subsequent chapters, as noted above, I critique several of the specific claims of this argument.

4. The Argument Considered Mathematically: Two Iterations of Bayes's Theorem

Now let us take Swinburne's argument through two iterations of Bayes's Theorem in order to see how the argument might work. (Swinburne himself does not provide exact numerical values beyond claiming that $P(e|h \& k) = 1/2$, which makes it very difficult to judge his argument; this is a point I return to later in this thesis.) The first bit of evidence that is plugged into Bayes's Theorem is e_1 , or the existence of the universe. Then specifically Bayes's Theorem is:

$$P(h|e_1 \& k) = P(e_1|h \& k) P(h|k) / P(e_1|k)$$

At this stage, k is mere tautological evidence. h is (always) the hypothesis "God exists." We will consider in great detail how these probabilities are calculated, but for now I simply note again that Swinburne argues that the main determinant of $P(h|k)$ and $P(e_1|k)$ is simplicity; the simpler are h and e_1 , the greater the value of $P(h|k)$ and $P(e_1|k)$, respectively. Swinburne argues that God is simple, whereas the evidence he considers (such as e_1 , which is the existence of the physical universe) is complex. Then $P(h|k) > P(e_1|k)$, so for example we might imagine (to consider a concrete example of Bayes's Theorem) that $P(h|k) = 0.1$ and $P(e_1|k) = 0.001$. Swinburne also generally argues that the evidence he considers is more likely given the existence of God than without this assumption, that is, that $P(e_1|h \& k) > P(e_1|k)$, so we might imagine that $P(e_1|h \& k) = 0.002$. Given these three values, it follows from Bayes's Theorem that $P(h|e_1 \& k) = 0.2$. These numbers indicate that God's intrinsic probability is 0.1, the universe's intrinsic probability is 0.001, the probability of the universe's existence given God's existence is

0.002, and thus by Bayes's Theorem the probability of God's existence given the universe's existence is 0.2. The calculation is:

$$\begin{aligned} P(h|e1\&k) &= P(e1|h\&k) P(h|k) / P(e1|k) \\ 0.2 &= 0.002 * 0.1 / 0.001 \end{aligned}$$

Note that God was assumed to be far more intrinsically probable than the universe. Also note that the existence of the universe became more likely on the hypothesis that God exists as compared with not assuming God's existence, that is, $P(e1|h\&k) > P(e1|k)$. These numbers and relations give a rough sense of Swinburne's main plan. He will argue that the intrinsic probability of God is high, that the intrinsic probability of the universe (and the other evidence) is low, but that the existence of God makes the evidence more likely than it is in the absence of the assumption of God's existence. Recall that when the evidence is more likely given God's existence, this logically implies that God's existence is more likely given the evidence, that is, the evidence confirms God's existence. Put another way, the evidence provides a good C-inductive argument to God's existence.

Now let us take Swinburne's argument through one further iteration. After a consideration of the first piece of evidence, $e1$, we turn to the second piece of evidence, $e2$, which are forms of teleological arguments, in particular the existence of spatial and temporal order. Keeping with Swinburne's strategy, k is going to now represent $e1$, so Bayes's Theorem now becomes (though Swinburne will often write ' k ' instead of ' $e1$ '):

$$P(h|e_2 \& e_1) = P(e_2|h \& e_1) P(h|e_1) / P(e_2|e_1)$$

$P(h|e_1)$ is the value returned through the first iteration of Bayes's Theorem (as e_1 includes tautological information), that is, $P(h|e_1)$ is the same as $P(h|e_1 \& k)$. To determine $P(h|e_2 \& k)$ it is then necessary to determine $P(e_2|h \& e_1)$ and $P(e_2|e_1)$. (Note that $P(e_2|h \& e_1) / P(e_2|e_1)$ is called the "the explanatory power of h .") Again, if the evidence, e_2 , is more likely given the existence of God than in the absence of God, which is to say $P(e_2|h \& e_1) > P(e_2|e_1)$, then $P(e_2|h \& e_1) / P(e_2|e_1) > 1$, and so the posterior probability of God's existence is increased by considering e_2 ; put another way, e_2 confirms God's existence. To consider a concrete example, $P(h|e_1) = 0.2$ is the value returned by the first iteration of Bayes's Theorem, as above. Then imagine that $P(e_2|h \& e_1) = 0.0004$, whereas $P(e_2|e_1) = 0.0002$. The important point about these numbers is that the evidence, e_2 , is more likely given God's existence than in the absence of this assumption. So $P(e_2|h \& e_1) / P(e_2|e_1) = 2$, and thus $P(h|e_2 \& k) = 2 \times 0.2 = 0.4$, which is to say that by considering two pieces of evidence the probability of God's existence has been raised from 0.1 to 0.2, and then from 0.2 to 0.4. Swinburne ultimately considers 11 pieces of evidence, in each case feeding the evidence into Bayes's Theorem in the manner outlined for these two pieces of evidence.

5. Conclusion

Swinburne provides a cumulative argument to God's existence, which means that he considers various pieces of evidence and ultimately argues that this evidence, taken

together, shows that God likely exists. In this chapter we took a closer look at the particular evidence considered by Swinburne, and the way in which it is meant to accumulate. In general, Swinburne's strategy is to argue that the evidence is more likely given God than in the absence of this assumption, which logically implies that the evidence confirms God's existence, that is, the evidence raises the probability that God exists.

The cosmological argument was considered in some detail. Several important features of this argument were noted. Swinburne considered four possible explanations of the universe. In each case simplicity played a crucial role in both ruling out explanations which were not God and in establishing God as the likeliest explanation. These four possible explanations will be discussed again in chapter 6.

Finally I took Bayes's Theorem through two mathematical iterations, to suggest how Swinburne's argument is meant to proceed mathematically. In the following chapter we turn from a focus on evidence to a focus on theories, and the way that theories and evidence fit together. In particular, simplicity plays a crucial role in the likelihood of a theories being true.

Notes

¹ Swinburne *The Existence of God*, 153.

² Swinburne *The Existence of God*, 154.

³ Swinburne *The Existence of God*, 159. There is a trend in Swinburne to claim that things are clear or obvious or that everyone believes such and such precisely when such and such is far from clear, obvious, or believed by everyone.

⁴ Swinburne *The Existence of God*, 218.

⁵ Swinburne *The Existence of God*, 219.

⁶ Swinburne *The Existence of God*, 234-235.

⁷ Draper, "Richard Swinburne, Providence and the Problem of Evil," 456.

⁸ Swinburne *The Existence of God*, 291

⁹ Morgan Luck, in "Against the Possibility of Historical Evidence for Miracles," has an interesting argument that historical evidence does not support the conclusion that miracles occurred.

¹⁰ Pauley, "Philosophy of Religion and Christian Resurrection," 65.

¹¹ Swinburne *The Existence of God*, 316.

¹² Swinburne *The Existence of God*, 316.

¹³ Swinburne *The Existence of God*, 17.

¹⁴ Swinburne *The Existence of God*, 133.

¹⁵ Swinburne *The Existence of God*, 134.

¹⁶ Swinburne *The Existence of God*, 134.

¹⁷ Swinburne *The Existence of God*, 140-141.

¹⁸ Swinburne *The Existence of God*, 142.

¹⁹ Swinburne *The Existence of God*, 143.

²⁰ Swinburne *The Existence of God*, 145.

²¹ Swinburne *The Existence of God*, 145.

²² Doore (1980) contains several interesting arguments relevant to the debate between Swinburne and Hume.

²³ Swinburne *The Existence of God*, 147.

²⁴ Swinburne *The Existence of God*, 150-151. However, the divine properties do not fit together; Swinburne spent nearly an entire book, *The Coherence of Theism*, arguing that the divine properties could be massaged into a form whereby God would be logically possible (not logically impossible, that is, not incoherent). It is then not the case that the divine properties “fit together” in any simple or straight forward sense, as Swinburne claims in his quote above. I argue this point in greater depth in chapter 5. Second, it is simply false that the infinite is simpler than large finite values. Swinburne’s argument for this claim does not succeed, which I show in Chapter 4.

²⁵ Swinburne *The Existence of God*, 152.

Chapter 3: Evidence, Theories, Simplicity, and the Number 1

1. Introduction

In chapter 1, I outlined Swinburne's argument in *The Existence of God*. Major structural features of his argument were discussed, such as Swinburne's use of Bayes's Theorem, which is: $P(h|e \& k) = P(e|h \& k) P(h|k) / P(e|k)$. Swinburne's argument is a cumulative argument, meaning that he feeds a good deal of evidence into Bayes's Theorem, where his goal is ultimately to conclude that God exists with a probability greater than 50%; in Swinburne's terminology, he claims that his argument is a good P-inductive argument to God's existence. Specifically Swinburne considers eleven pieces of evidence, where each piece of evidence is an a posteriori feature of the universe (so for example, the ontological argument is *not* a piece of evidence considered by Swinburne, but forms of both cosmological and teleological arguments are). Swinburne claims that most of these individual arguments involving evidence are good C-inductive argument to God's existence, that is, the evidence raises the probability of God's existence. This evidence was outlined in chapter 2.

The evidence put forth by Swinburne and outlined in chapter 2 is, for the most part, intended by Swinburne to support, or confirm, the existence of God. The existence of God is one *hypothesis* as to how the universe came to be. Swinburne believes that the *evidence* supports, or confirms, this hypothesis. The last chapter focused on the evidence; in this chapter we take a closer look at how evidence and hypotheses fit together. One specific question of interest is: How does evidence affect the probability of a hypothesis?

For example, given that there is a complex physical universe, how does this evidence affect the probability of the hypothesis “God exists”? In the last chapter, we saw that Swinburne argues that since a complex physical universe is more likely to exist given God’s existence, this implies that God is more likely to exist given a complex physical universe. In this chapter we look more closely at the general question as to how evidence and hypotheses interact. Interestingly, the simplicity of the hypothesis itself plays an important role, where simpler hypotheses are more likely to be true. Swinburne argues that the hypothesis that God exists is a very simple hypothesis, thus making God’s existence intrinsically probable. In the language of Bayes’s Theorem, Swinburne argues that $P(h|k)$ is relatively high. Why is God simple, according to Swinburne? Briefly put, Swinburne claims that both 1 and the infinite are simple, and that God is 1 person who is infinite on several properties. In this chapter, we take a close look at the claim that 1 is simple; the next chapter focuses on the claim that the infinite is simple.¹

2. Theories, Evidence, and Simplicity: An Overview

Recall that the probability Swinburne is working with is inductive probability, which is concerned with how likely one proposition renders another. Swinburne is specifically interested in the relationship between evidence and hypotheses. So for example, $P(h|e \& k)$ is the probability of h given e and k , that is, the probability of God’s existence given the evidence. The question arises: Given some evidence, how does that evidence affect the probability of a hypothesis? As the move is from evidence *up to* the

more general hypotheses, criteria for answering this question are known as the criteria of upward inference.

Let us consider several examples. The evidence, e , might be a new astronomical observation of a planet at some time. The background evidence, k , could be the current physical theory along with all astronomical observations prior to e . The hypothesis under investigation, h , could be “Planets move in ellipses.” It seems reasonable to suppose that there are criteria by which the evidence e affects the probability of h . For example, if an observation, e , puts the planet at a location where it would not be if the orbit were elliptical, then e should lower the probability of h . In contrast, if h predicts e , that is, if the observation puts the planet at a location where it would be if the orbit were elliptical, then e raises the probability of h . Again the crucial question is: How does evidence affect the probability that a hypothesis is true?

Before turning to the criteria for determining the relationship between evidence and hypotheses, let us first consider one major difficulty in moving from evidence to a hypothesis. Consider the observations of a planet. No matter how many observations are made, there will always be merely a finite number of observations. Then given a finite number of observations, there are always infinitely many curves, or paths, that can be drawn through the points of observation. That is, for any finite set of observations, infinitely many hypotheses regarding the path of the planet are possible. This problem is known as the problem of underdetermination, as the evidence always underdetermines (that is, does not uniquely specify, or determine) the hypothesis. With our planet example, even if 100,000 observations are made, each of which lies on an ellipse, still

infinitely many other curves besides the ellipse are potential hypotheses. As Swinburne writes:

Consider Kepler studying the motion of Mars. Suppose that he has as data a large finite number of past positions of Mars. He wishes to know the path along which Mars is moving, knowledge that will enable him to predict its future positions. He can mark on a map of the sky the past positions; but through those positions he can draw an infinite number of different curves, which diverge from each other in the future....²

This specific problem of going from points (observations of location) to a curve (a hypothesis as to the general path of the object) is known as the problem of curve-fitting.³ A simple example, far simpler than the Kepler case, highlights the problem. Imagine that data is collected as to the location of a moving object where the points collected are (0,0) and (1,1). One curve that fits these points is $y = x$. But another possibility is $y = x^2$. Still another possibility is $y = x^{2.7}$. There are infinitely many other hypotheses, or curves, that fit these points. Then, in general, each of these infinitely many curves, or hypotheses about the general path of the object, will yield different predictions as to where the object will be when, for example, $x = 2$. It is often argued that people have a preference for the equation $y = x$, and that this equation is, in fact, most likely to be the true equation in virtue of being the simplest equation that fits the data. We will return to the problem of curve-fitting below, but now let us consider the criteria of upward inference.

3. The Criteria of Upward Inference

What then are the criteria of upward inference? That is, given some evidence, how does the evidence affect the probability of various hypotheses? And what role does the hypothesis itself play? Three criteria are almost universally agreed on. A fourth, simplicity, is more contentious. Thus I briefly outline the first three criteria, before considering simplicity (which plays a crucial role in Swinburne's argument) at some length.⁴

The Kepler example above indicates the first criterion for evidence increasing the probability of a hypothesis: the hypothesis should predict the evidence. If the hypothesis does predict the evidence, then the evidence makes the hypothesis more likely to be true. If the hypothesis predicts that the planet will be at position x , and the planet is found at position x , then the evidence makes that hypothesis more likely to be true. By contrast if the hypothesis does not predict the evidence, then the evidence makes the hypothesis less likely (subject to a refinement discussed at the end of this paragraph). If the hypothesis predicts that the planet will be at position x , and the planet is found at position z , then this evidence makes the hypothesis less likely. There may also be cases where the hypothesis neither confirms nor does not confirm the evidence, and then the evidence has no effect on the probability of the hypothesis. The evidence might be the sighting of a penguin and the hypothesis is "Planets move in ellipses." This evidence would have no effect on the hypothesis. Another example where the evidence can have no effect on the probability of the hypothesis is a case where an observation (evidence) is just at the border of

experimental error. That is, a planet may be observed at a point in space that does not lie on the predicted ellipse, but the planet may be very close to where it would be if its path were elliptical. In such a case the planet may be at a position that neither detracts nor adds to the probability of the hypothesis. The first criterion for evidence increasing the probability of a hypothesis is that the hypothesis should predict the evidence.

Interestingly, it is the only criterion that involves the evidence.

The second criterion for evidence increasing the probability of a hypothesis is that the hypothesis should fit with our background knowledge. Background knowledge is our other knowledge of the world, that is, knowledge that we had before the new evidence, *e*, was found. So for example, a hypothesis might predict all of the data, but if the hypothesis contradicts, or simply does not fit well with, our other knowledge, then the hypothesis is less likely to be true. We might have as a hypothesis, “Planets travel in ellipses, and planets are not solid (in the sense that anything could pass right through a planet with absolutely no interference)”. This hypothesis predicts the positions of the planets exactly as does the hypothesis, “Planets travel in ellipses, and are solid” but the first hypothesis is less likely than the second because the first does not fit well with our background knowledge. In this case the background knowledge is present day physics, which predicts that objects such as planets are solid, even if we have not been to the planet or observed anything crashing into the planet.

The third criterion is scope. A hypothesis that predicts less or makes fewer claims is more likely to be true relative to a hypothesis that predicts more or makes more claims. “Planets travel in ellipses and are green in the middle” is less likely to be true than “planets travel in ellipses.” (Note that in the example just given the former hypothesis

implies the latter, which logically implies that the latter is more probable; however, scope can play a role even when there is no logical implication present.)

A potential fourth criterion is simplicity. Before turning to simplicity, consider the following table which summarizes the “Criteria of Upward Inference,” that is, criteria for when evidence renders a hypothesis (more) probable. The first three criteria on the list were discussed above; the last criterion, simplicity, is discussed below, with a focus on numerical simplicity, which is one aspect of mathematical simplicity.

Criteria of Upward Inference

1. Hypothesis predicts the evidence
2. Hypothesis fits with background knowledge
3. Hypothesis has small scope
4. Hypothesis is simple

What is simplicity? There are many different answers to this question.⁵ Many people have put forth views of simplicity, and just as quickly as such views are put forth they are attacked.⁶ However, as an initial pass it might be said that in general, simplicity is less. Applied to theories, this means that a theory that has fewer hypotheses is simpler than a theory with more hypotheses. The hypotheses themselves should be short and involve as few connections between entities as possible. This type of simplicity is known as *syntactic simplicity*. Moving to entities, postulating as few entities as possible yields the simplest theory; this *ontological simplicity* is known as Occam’s Razor, which is often stated, “Entities are not to be multiplied beyond necessity.” Though these two types

of simplicity are recognized, a question that arises is: Does such simplicity indicate truth? That is, are hypotheses that are simple in these senses more likely to be true? We will address these questions below.

When it comes to simplicity, our focus is on one type of simplicity known as mathematical simplicity. The reasons for this focus are as follows. Swinburne is going to argue that $P(h|k)$, or the intrinsic probability of God, depends mainly of the simplicity of God. Swinburne argues that God is simple, and therefore $P(h|k)$ is relatively high. Swinburne's argument to this effect relies crucially on his conception of mathematical simplicity. When it comes to degrees of properties, Swinburne argues that the infinite is simpler than finite values. If true, God's having the properties power, knowledge, and freedom to an infinite degree would be simplest. A consideration of the infinite is a focus of the next chapter, chapter 4. Swinburne also argues that when it comes to numbers generally, 1 is simpler than any other (nonround or higher) numbers. Then God's being 1 person would be the simplest hypothesis.⁷ Thus, on Swinburne's view of mathematical simplicity, God emerges as simpler than many or finite gods. In the remainder of this chapter I consider Swinburne's view of mathematical simplicity, but argue that all numbers have equal simplicity. Thus neither 1 nor the infinite is simpler than any other number. I postpone a discussion of the infinite until chapter 4. A main goal of this chapter is to argue that 1 is not simpler than other numbers. Notice that 1 has two key features: it is round (an integer) and it is small. In the next section I set forth my view that round numbers are not simpler than nonround numbers. The section after that argues that small numbers are not simpler than large numbers. In each case I argue that the context plays a crucial role, and so I call my view "contextualism."

4. Round Numbers: Three Arguments That Simplicity is Truth-Indicative

I will argue that all real numbers are equally simple. Before presenting my argument, we must be clear both as to exactly what this claim means and why some people have held the opposing view. Clearly some numbers are easier to work with than others, and in this sense some numbers are simpler than others. It is far easier to multiply 2 time 2 than it is to multiply 2.767 times -9.32432. In this sense 2 is simpler than 2.767. Also in this sense smaller numbers are simpler than larger numbers. Let us call this sense of simplicity *pragmatic*, since as a practical matter, integers and smaller numbers are simpler to work with than nonintegers and larger numbers.

However, recall that Swinburne's claim is not merely a claim regarding pragmatic simplicity. Swinburne goes further and argues that simplicity is indicative of truth, that is, *truth-indicative*.⁸ Henceforth, unless otherwise noted, when I discuss simplicity I am discussing it in this strong, truth-indicative sense. In terms of Swinburne's argument and Bayes's Theorem, Swinburne's claim is that simpler hypotheses are more likely to be true than less simple hypotheses, that is, that $P(h|k)$ takes on larger values when h is a simpler hypothesis, all else being equal.⁹

Let us now consider three cases, each of which is meant to motivate the view that mathematical simplicity, is, in fact, truth-indicative. Each case involves one number being rounded to an integer, where the claim is that the rounding occurs because round numbers are simple (simpler than nonround numbers) and that such simplicity is truth indicative. Eventually I argue that round numbers are not simpler than numbers which are

not round. But first I present three examples to motivate the view that round numbers are simple. First, consider the case of Mendel and his peas:¹⁰

In Gregor Mendel's original experiments on hybridization of garden peas, he crossed pea varieties with different specific traits, such as tall versus short or green seeds versus yellow seeds, and then self-pollinated the hybrids for one or more generations.... Across his experiments with seven different such traits, the ratio of dominant trait to recessive trait averaged 2.98 : 1. On this basis, Mendel hypothesized that the true ration is 3 : 1.

Mendel found that the ratio was 2.98 to 1, yet he postulated a ratio of 3 to 1. Why did he postulate the ratio of 3 to 1? One possibility, often suggested, is that round numbers are simpler than nonround numbers, and that for this reason Mendel, and scientists in general, round numbers to integral values because by using integers one is *more likely to arrive at truth*.

Second, arguments that simplicity is truth-indicative are often presented in this context of curve-fitting. Let us move to a slightly more complicated example of a curve fitting problem than given above. Imagine that our data consists of the following two points: (1,2) and (4, 8). If asked for the function that yields this data, most people would respond $y = 2x$. Then if queried for the value of y when x equals 5, the answer would be 10. And yet the function $y = 2x$ is just one of infinitely many functions that go through our three data points. Another such function is $y = 0.5x^2 - 0.5x + 2$. Intuitively we can see that there are infinitely many such functions that pass through our three points by

imagining graph paper with the two points plotted. It is possible to draw functions that pass through the two points, yet differ at all other values in whatever manner we choose. When asked to “solve” this curve fitting problem, why do people respond with $y = 2x$? One potential answer is that $y = 2x$ is the simplest function that passes through the three points, and that for this reason this function is most likely to be true. Notice that $y = 2x$ is simpler than $y = 0.5x^2 - 0.5x + 2$ for two reasons. First, $y = 2x$ uses fewer terms than $y = 0.5x^2 - 0.5x + 2$, that is, $y = 2x$ has only an x term. Second, $y = 2x$ involves round numbers, whereas $y = 0.5x^2 - 0.5x + 2$ has fractions. Such considerations motivate the view that both small numbers and round numbers are simpler than large or nonround numbers.

Third, to argue that integers are simpler than nonintegers, Swinburne gives the example of the equation of universal gravitation, which is used to determine that attractive force between two bodies of mass m_1 and m_2 which are at a distance r from each other. The equation is:

$$1) F = m_1 * m_2 * G / r^2$$

Swinburne notes that the data collected to any point in time are not precise enough to distinguish between this equation, where r is raised to the 2nd power, and for example, the equation:¹¹

$$2) F = m_1 * m_2 * G / r^{2.0000...000001}$$

Where there could be as many 0's as we desire between the 2 and the 1. That is, we can set this number as close to 2 as we like, and then ask why scientists believe that 1) is more likely to be true than 2). The answer Swinburne gives is that round numbers are simple, that simplicity is truth-indicative, and that therefore 1) is more likely to be true than any version of 2). Each of the above three examples motivates the view that *mathematical simplicity is truth indicative*, where this phrase is taken to mean that round, small numbers are simpler than nonround, large numbers.

4.1 Round Numbers: Three Arguments That Simplicity is *not* Truth-Indicative

In Mendel's case, rounding 2.98 to 3 does arrive at truth. And, in fact, any number of examples can be brought forth in an effort to argue that round numbers are simple and that such mathematical simplicity is truth-indicative. I presented three such examples above. In this section I argue that rounding does not, in general, lead to truth. That is, round numbers are not truth-indicatively simple. How can I hope to so argue given the examples above? The key is to notice that though there are many examples where rounding leads to truth (Mendel, certain curve-fitting problems, gravitation, etc.), many examples can be given where rounding numbers leads to error. I will present several examples where rounding leads to error. I then discuss the features that make rounding lead to truth and that make rounding lead to falsehood. What will emerge is that there is a crucial distinction between the *discrete* setting and the *continuous* setting; depending on which we are in, rounding either generally is or is not a good idea, respectively. Thus I term my view on the simplicity of round numbers *contextualism*, discussed further

following the examples. The name “contextualism” simply indicates that the specific context in which rounding occurs will very likely determine whether rounding leads to truth or error.

First, the value of pi is an irrational number, which means that not only is the value of pi not an integer, but the value also cannot be expressed as a ratio of two integers. The value of pi to four decimal places is 3.1415, which is close to 3. Now and again people suggest that the value of pi really is 3.¹² People who argue that pi is 3 are assuming that round numbers are simple, and that the simplicity of integers is truth indicative. But the value of pi is not an integer. In this case the assumption of the simplicity of the integers plainly leads into error. Sometimes rounding numbers leads to truth, but it just as easily can lead into error.

Second, there are several physical constants which appear in physics. Interestingly, Swinburne offers the example of the formula of universal gravitation to support his view that round numbers are simple. But in the formula of universal gravitation, presented above, is the variable G, which is the universal gravitational constant. It is a number which roughly equals 6.674×10^{-11} . It could be suggested that 7 is a round number and thus simpler, and that thus a value for this constant, more likely to be true, would be 7×10^{-11} . But this would simply be an error. Rounding the universal gravitational constant would lead to error. Note too that, moving away from scientific notation, the universal gravitational constant is 0.00000000006674. Thus it may be even more natural to round it to 0. But this would be an even worse error, for it would imply that gravity, in essence, does not exist. That is, rounding G to 0 means that the gravitational force between any two objects is always 0, according to the formula. The

important point is that though Mendel's rounding led to truth, other rounding leads to error.

As another example involving physical constants, consider the speed of light, which is $299,792,458 \text{ m}\cdot\text{s}^{-1}$. If we subscribe to the view that integers (or, in general, "round" numbers) are truth-indicatively simple, then is tempting to round this value to $300,000,000 \text{ m}\cdot\text{s}^{-1}$. But again this is simply an error. Interestingly, Swinburne himself sometimes rounds the speed of light to $300,000,000 \text{ m}\cdot\text{s}^{-1}$, for example in *Is There a God?*¹³

For our third example, consider a measurement such a height. Imagine that someone's height is measured, and he is found to be 6.07 feet tall. Rounding this height to exactly 6 feet would be a bad idea, in that it is unlikely that this person is exactly 6 feet tall. Given that height measurements tend to be accurate, the best course of action is to assume that the person is as tall as the reading indicates.¹⁴

In section 4 of this chapter we saw three examples where rounding led to truth. In section 4.1 we have now seen three examples (pi, universal constants, and height) where rounding leads to error. My claim is that rounding is, in general, not likely to arrive at truth unless we already know that we are operating in a context in which rounding is likely to lead to truth.

5. Contextualism: The Discrete / Continuous Divide

And so we have seen that just as rounding can be a good thing (for arriving at truth), so too it can be a bad thing. In which settings or cases is rounding a good thing? In

general, when we are in the *discrete realm*, rounding will lead to truth. By the discrete realm I mean a setting in which we are dealing with integers, or round numbers, to begin with. The example of Mendel is an example of the discrete realm. Genetics is discrete in the sense that genes are whole units. One either has a gene or not. When we are working in realms that are fundamentally discrete to begin with, then rounding most often leads to truth. Another realm that is fundamentally discrete is dimension. The universe has three spatial dimensions,¹⁵ which are fundamentally discrete. Thus, for example, in the case of the formula of universal gravitation, the force of gravity diminishes inversely proportional to r^2 , where the exponent is a round number due to the fact that the equation has as its underlying framework dimension.

The mathematical reason as to why, when working in discrete realms, numerical values tend to remain integers is that integers are *closed* under most mathematical operations, including addition, subtraction, multiplication, and exponentiation (division is a notable exception). To be closed means that when performing one of these operations on integers, the answer returned is an integer.

Other contexts are *continuous*. The pi example, the examples from physical constants, and height were examples of continuous realms. In general, continuous realms involve *measurement* as opposed to *counting*. Genes and dimension are discrete and involve counting. The gravitational constant and pi are continuous and involve measurement. For example, to determine pi we measure the circumference of a circle, measure the diameter, and divide the two.¹⁶

5.1 Contextualism versus Background Knowledge

A potential response to my position of contextualism is that this view presents no problems for Swinburne, as what I am calling contextualism is simply another name for background knowledge. Let me indicate why this response to contextualism misses the mark. A key claim of contextualism, which I have attempted to illustrate above by several examples, is that just as rounding can lead to truth, so too can rounding lead away from truth and into error. The context is often the key factor in determining which will be the case. Now, consider a case in which we neither know the context and in which we do not have any (or we have very little) background knowledge. Swinburne must claim that rounding will lead to truth, because, he claims, round numbers are simple and simplicity is truth-indicative. But the contextualist responds that rounding is just as likely to lead into error. Therefore it is unclear whether rounding will lead to truth or error. Thus there is a difference between background knowledge and contextualism. Though there is a certain overlap, in that the context will often be a guide as to what the background knowledge is, nevertheless the key difference remains that contextualism forbids rounding in cases where Swinburne must recommend rounding.

So far we have concentrated on Swinburne's claim that round numbers are simple. In the next section I argue that, just as round numbers are not simple and thereby truth-indicative, neither are small numbers simple and therefore truth-indicative.

6. Small numbers are not truth indicatively simple

Recall that a main claim involved in Swinburne's argument that God likely exists is that the intrinsic probability of God's existence, $P(h|k)$, is relatively high. To argue this Swinburne claims that $P(h|k)$ is mainly determined by the simplicity of h , or God, where the simplicity of h yields a higher value for $P(h|k)$. Swinburne argues that God is simple, in large measure, by arguing that God is 1 agent and that 1 is a simple number in virtue of being both round and small. In the previous section I argued that round numbers are not simpler than nonround numbers. In this section I argue that small numbers are not simpler than large numbers.

The preference for small numbers is an a posteriori feature of the world, and not an a priori indication that small numbers are simpler and therefore truth indicative; yet Swinburne claims that the preference for small numbers is a priori.¹⁷ This world, it seems, has a finite number of agents, who have some measure of difficulty cooperating. Note too that two agents cannot occupy the same space at the same time. But we could imagine (that is, it is logically possible) that a world contain an infinite number of beings who could occupy the same space at the same time. Then it would be more likely that many agents would perform actions, it might even be the case that in general, infinitely many agents performed each action. Creatures in such a world would not prefer small numbers, nor would they find small numbers truth-indicative. The point is that, given such considerations, Swinburne's claim that mathematical simplicity is an a priori indication of truth cannot be correct.

But isn't it the case that Swinburne only needs the truth-indicative preference for small numbers to apply in this world? That is, perhaps it does not matter that the claim holds a posteriori. This move runs into problems. First, one of the difficulties for

Swinburne is to argue against polytheism. He does so by arguing that 1 is simple and that simplicity is truth-indicative. These claims are meant to apply to the realm of God or gods. But this realm is, if anything, a far different one than our mundane world. So it is unclear that an a posteriori feature of our world could be applied to this godly realm. Swinburne then needs the truth of “small numbers are simple” to be a priori.

Thus far I have argued that small round numbers are not truth-indicatively simple. But this argument, in and of itself, does not imply my stronger claim that all real numbers are equally simple. Perhaps other features of a subset of the reals renders that subset simple. How do I argue for this stronger claim that all reals are equally simple? Here I invoke the principle of indifference, which states that in the absence of any reason to the contrary, competing outcomes are equiprobable. We may think of each real number as an outcome. What I have suggested above is that there are not reasons to prefer small or round numbers to numbers that are large or nonround. I believe that similar considerations apply to any other principle that could be brought forth in an effort to argue that some subset of the reals is simpler than some other subset of the reals. For example, it might be suggested that positive numbers are simpler than negative numbers,¹⁸ or that rational numbers are simpler than real numbers. However, as with small and round numbers, I believe that the context is the crucial factor. Some contexts would prefer negative numbers, some would prefer irrationals. Thus it cannot be said, a priori, that positive or rational numbers are simple.

In *Epistemic Justification*, Swinburne argues that attempts to deny the fundamental role of (mathematical) simplicity are not effective. He motivates his position with a dramatic example.¹⁹ He asks us to consider the following. Half of the world is to

be blown up. A (mathematically) simple hypothesis predicts that it will be the northern hemisphere. The other, more complex, competing hypothesis predicts that it will be the southern hemisphere. Swinburne claims that all people would be on a plane to the north. But given my examples above involving continuous contexts, I believe that Swinburne is wrong on this point. For example, perhaps the hypothesis involves an equation that must predict the position of an object. The position of an object undergoing constant acceleration (such as a falling object experiencing gravity) is, in general, given by a parabola, which is a second degree equation. That is, it involves an x^2 term. Such equations appear very often, and almost always involve coefficients that are not integral. If Swinburne were deciding between such an equation, versus a linear equation (only an x term and a constant), where the linear equation had integral coefficients, and both equations were similar in terms of the first three criteria of upward inference, he would be forced to opt for the linear equation. But this would be a mistake. Nonintegral numbers, as well as large numbers, appear very often in many contexts. Integers and small numbers are not truth-indicatively simple.

7. Conclusion

Integers and small numbers are easier to work with than are nonintegers and large numbers, that is, it is easier to add, multiply, divide, raise to powers etc such numbers. For this reason small, round numbers are pragmatically simple, but this pragmatic aspect in no way shows that integers are truth-indicatively simple. And in this chapter I have argued that all real numbers are equally simple truth-indicatively. If true, it follows that

Swinburne's argument against polytheism suffers. For Swinburne argues that $P(h|k)$ is greater when h is "God exists" as opposed to, e.g., "7 gods exist." But if, as I have argued, it is not the case that 1 is simpler than 7, then Swinburne is wrong on this point. There may be truth-indicative forms of simplicity, but mathematical simplicity is not one of them. In the next chapter, I argue that the infinite is not simple, thus showing that not only are all reals equally simple, but that the infinite is as simple as any real number.

Notes

¹ Sobel, in "Logic and Theism," notes that Swinburne does not spend enough time considering the specific value of $P(h|k)$; this is one of the themes of my thesis. Additionally, I claim that many of Swinburne's qualitative claims regarding $P(h|k)$ are false.

² Swinburne *The Existence of God*, 59.

³ See Priest (1976) for an interesting discussion of curve-fitting, including some of the complexities that arise from issues involving transformations.

⁴ The next section is based on, and paraphrases, Swinburne, *Epistemic Justification*, chapter 4.

⁵ See Goodman (1961) for an early view regarding some of the complexities of simplicity. For example, he writes, "Formulation of general standards for comparing the simplicity of hypotheses is a difficult and neglected task." 151. Though perhaps less neglected today, the task remains complex.

⁶ Remarking on this fact, Sober (1975, p. vii) writes, "The diversity of our intuitions about simplicity is matched only by the tenacity with which these intuitions refuse to yield to formal characterization. Our intuitions seem unanimous in favour of sparse ontologies, smooth curves, homogeneous universes, invariant equations, and impoverished assumptions. Yet recent theorizing about simplicity presents a veritable chaos of opinion. Here one finds arguments that simplicity is high probability, that it is low probability and that it is not probability at all." The matter remains much the same today.

⁷ Cahn (2006) considers the hypothesis that an all good god is battling with an evil demon, that is, that there are 2 gods. He writes, “Is this ... explanation unnecessarily complex and therefore to be rejected? No, for even though in one sense it is more complex than the other two, because it involves two supernatural beings rather than only one, in another sense the ... explanation is simpler ... because it leaves no aspect of the situation beyond human understanding.” 22. Turning to Bayes’s Theorem, the claim that one being is simpler than two is a claim regarding $P(h|k)$. I consider it in this chapter. The two god hypothesis does better account for the problem of evil, which means that $P(e|h\&k)$ is higher when h is the hypothesis of two gods. Swinburne tries to get around this problem by arguing that $P(h|k)$ is much higher when h is the hypothesis that God exists as opposed to anything else. Similar remarks apply to Bradley’s (2007) position that an indifferent god is a better explanation, though here the debate turns on the simplicity of the infinite, discussed in the next chapter.

⁸ Grunbaum raises interesting points regarding the relationship of truth and simplicity, while also discussing Swinburne’s argument, in “Is Simplicity Evidence of Truth?” However, the points I make below differ from Grunbaum’s.

⁹ Note that I am focusing here on mathematical simplicity. (I do not discuss whether or not other forms of simplicity are truth-indicative. For example, imagine some hypothesis, H . Maybe H is some portion of present day physics. To this hypothesis H it is possible to add in a number of particles that play no role whatsoever, leading to a new theory H^* . In fact, infinitely many theories can extend H in this manner. To see this, note that one “inert” particle might be added to H , or two “inert” particles, or three.... H may be truth-indicatively simpler than (any such) H^* in virtue of postulating fewer particles. But this is not an issue of lower numbers being simpler than larger numbers, rather it is a case of ontological parsimony.)

¹⁰ Online Stanford Plato Encyclopedia of Philosophy, Simplicity Entry, p.17

¹¹ Swinburne, *Epistemic Justification*, 93-4.

¹² For the defender of the simplicity of integers, one way to attempt to deflect the force of this example is to argue that people who suggest that the value of π is really 3 are operating with the pragmatic conception of simplicity. That is, that people just want their calculations to be simpler, and that people do not really believe that the value is 3. Though some people undoubtedly fall into this category, there are examples of people who really believe that the value of π is 3. 3.1, 3.2, and $22/7$ are other values that people have assumed for the value of π . From time to time legislation is considered which would decree, or have as law, that π is 3. It is not always clear whether the motivation in these cases is to arrive at truth or rather to arrive at pragmatic simplicity. That is, it is unclear whether those introducing the bills really think that π is 3, or, in contrast, they think that setting π to 3 will make everyone’s life easier. But, whether or not the legislators are aiming at truth, certainly some of those who suggest that π is 3 are doing so in a truth-indicative sense.

¹³ Swinburne, *Is There a God?*, p. 24.

¹⁴ Let me mention one possibility that would imply that round numbers are simpler than nonround numbers at a certain level. Consider height. I used it as an example to argue that rounding can lead to error. However, if there are smallest units of length (similarly for time and mass) in the universe, then it may be the case that, at a fundamental level, all heights are round numbers. That is, all objects would be some round number of fundamental units. This is to say that it is logically possible that the universe is, at a fundamental level, discrete. However, note that even if this were so, at a macro level it would still be a mistake to round. That is, rounding a height from 6.07 feet to 6 feet would still lead to error. Rounding would still not even be a good thing if performed at the fundamental level insofar as integers are rounded to integers, e.g., rounding 99 to 100. The goal would be to count the exact number of fundamental units. Rounding would only be good if nonintegers were rounded.

¹⁵ At least intuitively. Physicists often suggest that the universe has 11, or 77, etc. dimensions. What number is currently fashionable seems to change every few years.

¹⁶ Note that the characterization that I have given of the two realms does not always apply. For example, the perimeter, p , of a square in relation to a side, s , of that square is given by the equation $p = 4s$. Though the example involves measurement, the number involved, 4, is round. But the crucial point made in this section is that just as rounding can lead to truth, rounding can also lead away from truth. The discrete/continuous split is a general guideline, not a perfect rule that has no exceptions.

¹⁷ Swinburne, *Epistemic Justification*, 82.

¹⁸ Interestingly, it is not required that counting occur on the positive numbers (which would be one method of arguing that the positive numbers are simpler than the negatives). Imagine that anthropologists discover an island where people count 3 things by saying “onen,” “twon,” “threen.” The islanders say things like, “I will have twon donuts. There are sevens oceans. I have fiven fingers on my left hand.” The anthropologists see that the islanders are using onen, twon, threen, etc... much like we use the natural numbers, that is, for counting and subsequently describing numbers of existing entities. However, when told to square threen, the islanders reply “nine.” By working through many examples, the anthropologists come to realize that a number that ends in an extra “n” is negative. Numbers without this “n” are positive. The islanders are counting on the negative numbers. The anthropologists are amazed, convinced that the islanders will run into severe problems in their physics. Certainly everyone knows that $\text{rate} = \text{distance} / \text{time}$. The islanders, however, laugh at this suggestion, pointing out that $\text{rate} = (\text{distance} / \text{time}) * \text{onen}$. The anthropologists ask the islanders to give an example: Islander Sam travels for threen hours and travels sixn miles, thus traveling at twon miles per hour. The anthropologists are amazed when looking through the islanders’ physics books to find that all formulae “work” (granted, onens abound). The islanders are counting on the negative numbers.

¹⁹ Swinburne, *Epistemic Justification*, 100.

Chapter 4: Simplicity, Swinburne's Principle P, and the Infinite

In Chapter 3 I argued that all real numbers are equally simple. My main method of arguing for this claim was to argue that nonround numbers are just as simple as round numbers, e.g., 3.7 is just as simple as 2; and I argued that large numbers are just as simple as small numbers, e.g., 999,923 is just as simple as 3. The importance of this argument in terms of Swinburne's work is that polytheism is just as simple as monotheism, contrary to what Swinburne claims. In essence the focus, in chapter 3, was on the simplicity (or lack thereof) of the number 1 relative to other real numbers.

In this chapter we turn from a consideration of the relative simplicity of monotheism versus polytheism to a consideration of the relative simplicity of an infinite god versus a finite god; that is, we turn from a consideration of the number 1 to a consideration of the infinite. Swinburne claims that the infinite is simpler than finite values. Analyzing this claim is a main task of this chapter. Before we do so, let us see how these claims of Swinburne's fit with his use of Bayes's Theorem.

1 The Crucial Importance of $P(h|k)$ to Swinburne's Argument

Swinburne wishes to argue that God most likely exists. Swinburne understands God as a person who is one person infinite on several properties. A potential problem faced by Swinburne is that his argument from evidence may also provide a series of good C-inductive arguments *to the existence of a very powerful, yet finite god*. That is, let h be "God exists" and let h_f be "a god of great but finite power, knowledge, and goodness

exists.” (Perhaps some other properties of h_f would need further clarification to give a complete description, but the important point for our purposes is that h_f is a hypothesis of a finite god.) We saw in chapter 2 that Swinburne argues that the cosmological argument provides a good C-inductive argument to God’s existence, that is, God is more likely to exist given that existence of a universe. Notationally, $P(h|e \& k) > P(h|k)$. But it could also be the case that the existence of the universe makes it more likely that the finite god exists, which notationally is $P(h_f|e \& k) > P(h_f|k)$. Evidence is able to support more than one hypothesis. Consider: A footprint found at a crime scene could raise the probability of several suspects having been the one (only) person to commit a crime. That is, perhaps it is clear that one person did the crime and a certain Nike sneaker, size 13.5, was found at the crime scene. This evidence raises the probability that each person who owns such a sneaker committed the crime. In the same way, evidence about the universe, e.g., the existence of humans, could raise the probability that God exists and raise the probability that a finite god exists.

To return to the case of God and the powerful, yet finite god, let us compare the right hand side of Bayes’s Theorem on the two hypotheses, h and h_f , with e as all of the evidence. $P(e|k)$ is identical in both cases, as neither h nor h_f is involved in this probability. $P(e|h \& k)$ and $P(e|h_f \& k)$, which is the probability of the evidence on the two hypotheses, would be similar. That is, there seems to be nothing in this world (more specifically, in the evidence considered by Swinburne) requiring that God have infinite power, knowledge, and goodness as opposed to *massive, but finite* power, knowledge, and goodness. Thus the evidence would be equally likely on the two hypotheses. Turning to the third and final term on the right hand side of Bayes’s Theorem, if $P(h|k)$ were

similar to $P(h_f|k)$, we would have that all three terms on the right hand side of Bayes's Theorem were similar, and thus $P(h|e\&k)$ would be very similar in value to $P(h_f|e\&k)$, that is, a finite god would be as likely as God, given the evidence. That is, for God the equation is:

$$P(h|e\&k) = P(e|h\&k) * P(h|k) / P(e|k)$$

$$P(h|e\&k) = x * P(h|k) / y$$

Whereas for the finite god, assuming that the two terms are the same as discussed above and labeled x and y, we have:

$$P(h_f|e\&k) = P(e|h_f\&k) * P(h_f|k) / P(e|k)$$

$$P(h_f|e\&k) = x * P(h_f|k) / y$$

And in fact some people have argued that the evidence is more likely on the hypothesis of the finite god than on the hypothesis of the infinite God, for if the finite god's goodness were finite and moderate, then the presence of evil would be less surprising. As the hypotheses h and h_f are mutually exclusive, meaning that both cannot be true, if the probability $P(h_f|e\&k)$ (the probability of the finite god's existence given the evidence) is greater than the probability $P(h|e\&k)$ (the probability of God's existence given the evidence), then it logically follows that $P(h|e\&k) < 50\%$, i.e., God is not likely to exist and Swinburne's argument fails. This is obviously a conclusion that Swinburne wishes to avoid.

Swinburne's strategy to avoid this conclusion is to argue that $P(h|k)$ is much greater than $P(h_f|k)$, and that therefore $P(h|e \& k)$ is much greater than $P(h_f|e \& k)$. $P(h|k)$ and $P(h_f|k)$ are intrinsic probabilities, and thus the main determinant of their value, according to Swinburne, is simplicity. Swinburne, to arrive at the conclusion that $P(h|k)$ is far greater than $P(h_f|k)$, thus must argue that h is simpler than h_f , that is, that the infinitely powerful God is far simpler than a finitely powerful god.

2. The Value of $P(h|k)$: An Overview

When k is mere tautological evidence (that is, when k is background evidence, in contrast to the specific evidence Swinburne considers) then $P(h|k)$ is called "the intrinsic probability of God's existence." I follow Swinburne in this usage, but it is important to note that such probabilities also have a more general name that comes from confirmation theory, where $P(h|k)$ is called "the prior probability of God's existence." What are these prior/intrinsic probabilities, and how are they assigned values?

Swinburne writes:

The prior probability of a theory is its probability before we consider the detailed evidence of observation cited in its support.

The prior probability of a theory depends on the degree of its fit with background knowledge (an a posteriori matter), and on its simplicity and scope (features internal to the theory and so an a priori matter).¹

Though Swinburne lists these several criteria for determining prior probabilities, he argues that simplicity is the crucial determinant of the value of these probabilities. As Robert Burns writes, “[Swinburne’s] philosophico-theological system[’s] main unifying structural element is the claim ‘Simplex sigillum veri’ (‘the simple is the sign of the true’).”² Then the simpler h is, the greater $P(h|k)$ is; the more complex h , the lower $P(h|k)$ is.

A main portion of Swinburne’s argument in *The Existence of God* claims that God is simple, and that thus $P(h|k)$ is relatively high. To argue that God is simple, Swinburne claims that God can be completely described on merely three properties: power, knowledge, and freedom. That is, Swinburne argues that the other properties of God logically follow from these three properties. (In the next chapter, I consider how Swinburne views God, and I critique this position that God can be fully described on merely three properties. But for the purposes of this chapter I grant him this claim.) On each of the properties (power, knowledge, and freedom) God is infinite. Swinburne claims that the infinite is far simpler than finite values, and thus God is simple, relative to, e.g., a god of finite power. If Swinburne is correct, then he would establish that $P(h|k)$ is relatively high. As Swinburne writes, “...with k as mere tautological evidence and h as the hypothesis of theism, even if $P(h|k)$ is low, it will not be nearly as low [as] $P(h_n|k)$ for many other hypotheses h_n about what there is. The intrinsic probability of theism is, relative to other hypotheses about what there is, very high, because of the great simplicity of the hypothesis of theism.”³ Let us go on to consider how Swinburne argues that the

infinite is simple, in an attempt to determine whether Swinburne can justify his claim above.

3. Principle P

In arguing that God is simple, Swinburne relies on one main principle. The principle plays a crucial role in Swinburne's argument that God is simple, but it is a principle which I argue is not adequately supported by Swinburne. I also suggest that the principle may be false. The following principle, which I call "principle P," is central to Swinburne's argument:

Principle P: 0 and the infinite are simpler than other particular nonzero finite values.

Swinburne repeatedly writes that people are to be described on three dimensions: power, beliefs, and intentions. Consider, "A theistic explanation is a personal explanation. It explains phenomena in terms of the action of a person. Personal explanation explains phenomena as the results of the action of a person brought about in virtue of his basic powers, beliefs and intentions."⁴ Swinburne massages "power, beliefs, and intentions" into "power, knowledge, and freedom." Swinburne then uses P to argue that God's having infinite power, knowledge, and freedom is simplest. P does a remarkable amount of work for Swinburne. I discuss this point in more detail below, but

note that P can be used to rule out (as profoundly unlikely) the possibility that the universe was created by a finite god.

4. Preliminaries to a Consideration of Swinburne's Argument for P

Before turning to a consideration of Swinburne's argument for P, two points are in order. First, P indicates that both the infinite *and* 0 are simple. How then does Swinburne rule out the possibility of a god with no (0) power or knowledge? He writes that, "Yet a person with no powers would not be a person at all."⁵ This claim seems debatable, and hinges on exactly what is meant by powers. However, another route to ruling out a god of no power is simply to note that $P(e|h_0 \& k)$ would be 0 on the assumption of a god of no power, where h_0 is "a god of no power exists," as certainly the probability of the evidence is 0 for a god who has no power. That is, a god of no power could not create this universe. Thus in what follows we will not worry about a powerless god, even though P involves both the infinite and 0. I believe that Swinburne is correct in swiftly ruling out a god of no power, though his method of doing so may not be optimal. The main point is that though P involves both 0 and the infinite, we will focus mainly on the infinite.

Second, we should be clear as to exactly what Swinburne means by "the infinite." There are several possible meanings of the infinite. Quentin Smith noted that "Swinburne uses the word 'infinite' in several different senses and this may lead him open to some charges about 'equivocation.'"⁶ Smith goes on to list several possible meanings for "the infinite": "a) First, 'infinite' is used to refer to a number, the first transfinite cardinal,

aleph-zero.” There are, in fact, many different infinite numbers. Smith refers here to Cantor’s smallest infinite cardinal number. But there are infinitely many such cardinals. There are also infinite ordinals. To name just two other types of infinite numbers, there are infinite surreal numbers and infinite hyperreal numbers. Each type of infinite number has different properties, but there are all alike in that they are rigorously developed and have well-defined means of working with them. But this sense of infinite number is not how Swinburne is using “infinite” when it comes to God’s properties. Smith continues:

b) Second, Swinburne uses it [“the infinite”] in the sense in which some scientists have said that the velocity of the gravitational force, according to Newton, is infinite, or in which some scientists say that the velocity of light is infinite... But to say that light travels infinitely fast between the sun and the earth has nothing to do with transfinite cardinals. Velocity is distance per time, e.g., 5 miles per hour. The sun is 93 million miles from earth. To say that light travels infinitely fast between the earth and the sun is to say that light travels 93 million miles in 0 seconds. Since $93/0$ is meaningless if taken as a mathematical expression, this “infinity” cannot be interpreted as aleph-zero or any other number. It must be interpreted as meaning that the light leaves the sun at the same moment that it arrives at the earth. Here “infinite” means instantaneous, not aleph-zero.

Indeed as Smith writes, this sense of the infinite is not mathematically well-defined, and so this sense of the infinite differs from a). But this is the sense

of the infinite the Swinburne claims that scientists have historically preferred the infinite. The problem is that there is a third sense of the infinite, and it is the one that Swinburne actually employs (that is, it is the sense of the infinite in which God is infinite):

c) Third, these two senses are not distinguished from the use of the “infinite” to mean the maximum degree of a decreed property. This is the sense in which God is infinite, but it is not the sense of “infinite” that scientists employ in scientific theories. God has the maximum degree of power, knowledge, and goodness. [Smith was referring to the 1st edition of *The Existence of God*; in the 2nd edition goodness is replaced by freedom.] But this maximum degree is neither instantaneous nor is aleph-zero.... “God is infinitely good” means merely that it is not possible that there be something better than God.

Swinburne is using “infinity” to mean the maximum degree of a desired property. We might think of the infinite as 100%. A god who is infinitely powerful has the property power to the maximum degree, that is, this god is 100% powerful; no god could be more powerful. But as Smith notes, to motivate his claim that the infinite is simple, Swinburne employs the example of infinite velocity, which is b) above. Swinburne may feel that b) and c) are the same, and that the infinite has the same meaning in both b) and c), in which case there would be no equivocation between the two. But it is far from clear that b) and c) are the same. It is a weakness of Swinburne’s argument that his examples to motivate

his claim that the infinite is simply are of b), or instantaneous velocity, but that he uses “the infinite” is the context of God in sense c), or the maximum degree of a property. Smith’s charge of equivocation is a good point, and one to which Swinburne has not properly responded.

Here is an argument attempting to show that b) and c) cannot be the same. Imagine that a certain particle, P1, when hit by a certain frequency of light, travels 1 foot in no time at all, that is, the velocity is instantaneous. Another particle, P2, travels 2 feet in no time when hit by light of a certain frequency. Then both velocities are infinite in sense b) above, as both velocities are instantaneous, but it seems that there is a clear sense in which the speed of P2 surpasses the speed of P1. Put another way, just because a velocity is instantaneous does not imply that that velocity is unsurpassable. Though true, as Smith notes, that both $1/0$ and $2/0$ are meaningless mathematically, nevertheless the story I have told above is logically possible.⁷ Thus b) and c) are not the same. “Infinite,” when used in the sense of instantaneous velocity, is different than “infinite” when used in the sense of maximal. Swinburne has not adequately responded to Smith’s charge of equivocation.

5. Swinburne’s Argument for P

Is the infinite simple? Let us now consider Swinburne’s arguments for P. The first argument appears in a section on the justification of scientific explanation. As the quote is important and I will be considering it in detail, I quote at length. Swinburne writes:

One formulation of a law is mathematically simpler than another in so far as the latter uses terms defined by terms used in the former but not vice versa. Mathematical operations can then be ordered in terms of simplicity—addition is simpler than multiplication, multiplication than powers; scalars than vectors, vectors than tensors, and so on. This requirement also has the consequence that simpler theories use small integers rather than large integers, and integers rather than integers followed by a complicated fraction. Thus for phenomena made equally probable (to the degree to which we can make measurements), we should prefer the hypothesis of an attractive force between objects inversely proportional to r^2 (the square of their distance apart), rather than one inversely proportional to $r^{2.00...(100 \text{ zeros})...01}$. Interestingly, however, hypotheses attributing infinite values of properties to objects are simpler than once attributing large finite values. For we can understand, for example, the notion of an infinite velocity (the velocity being greater than any number of finite units of velocity) without needing to know what the googolplex is... And scientific practice shows this preference for infinite values over large finite values of a property. It preferred to postulate that light had an infinite velocity rather than a particular large finite velocity --- for example, 301,000 km/sec. --- until data were found that were very improbable on the former hypothesis. But note that the preference for the infinite over the large finite applies only to degrees of properties and not the numbers of independent entities this difference arises, I suppose,

because degrees of properties emerge so as not to act independently --- you cannot divide a velocity of 4 ft./sec. into two indivisible velocities of 2 ft./sec. of velocity is a hole in a way that, say, a number of separately indivisible planets are not. So, for example, we must not postulate an infinite number of planets in order to explain the motion of observable stars if we can explain that motion equally well by means of a large finite number of planets.⁸

Swinburne largely reiterates this argument in a section “The Simplicity of Theism”:

To start with, theism postulates a God who is just one person, not many. To postulate one substance is to make a very simple postulation. He is infinitely powerful, omnipotent. This is a simpler hypothesis than that there is a God who has such-and-such limited power (for example, the power to rearrange matter, but not to create it). It is simpler in just the same way that the hypothesis that some particle has zero mass, or infinite velocity is simpler than the hypothesis that it has a mass of 0.34127 of some unit, or a velocity of 301,000 km/sec. A finite limitation cries out for an explanation of why there is just that particular limit, in a way that limitlessness does not. As I noted in Chapter 3, scientists have always preferred hypotheses of infinite velocity to hypotheses of very large finite velocity, when both were compatible with the data. There is a neatness about zero and infinity that particular finite numbers lack.⁹

This is an interesting argument. Before breaking apart the various strands of the argument and analyzing it, note that, *prima facie*, Swinburne's principle P seems false. Few concepts have given humans more difficulty throughout the ages as has the concept of infinity. Mathematicians, scientists, and philosophers have run into no end of confusion when it comes to the infinite. That is to say that, on the face of it, the infinite is about as complex as it gets. 0 has also presented problems. Therefore to claim that 0 and infinity are simpler than specific finite values is, on the face of it, not true. The simplest numbers would seem to be small finite whole numbers, such as 1, 2, and 3 (at least on a pragmatic level). I stress that this is merely an initial reaction to P. *Prima facie* absurdity is not, in and of itself, a reason to abandon a principle or theory. Special relativity might be a good example of a theory which is, on the face of it, absurd. But strong arguments and evidence have convinced many people of its truth. The point I wish to make is that given the seeming absurdity of P, strong evidence and/or arguments will be needed to successfully support P. The bar is set high, so to speak.

6.1 Swinburne's Argument for P from Mathematical Simplicity

Swinburne's argument begins with the claim that "One formulation of a law is mathematically simpler than another in so far as the latter uses terms defined by terms used in the former but not vice versa." Swinburne gives the example that addition is thereby simpler than multiplication, because multiplication is defined in terms of addition, but addition is not defined in terms of multiplication.

Swinburne then applies this conception of simplicity to finite and infinite values, “Interestingly, however, hypotheses attributing infinite values of properties to objects are simpler than once attributing large finite values. For we can understand, for example, the notion of an infinite velocity (the velocity being greater than any number of finite units of velocity) without needing to know what the googplex is.” I believe that this argument fails for three reasons.

First, Swinburne is telling us that we can understand the infinite without understanding the googplex, which is a very large, finite value. In the same sentence, Swinburne defines an infinite velocity in terms of all finite velocities, “(the velocity being greater than any number of finite units of velocity)”. It would then seem that we do need to understand each finite velocity to understand an infinite velocity, as infinite velocity was defined in terms of finite velocities.

Second, Swinburne’s argument only seems to apply to *large* finite values. But to arrive at P, Swinburne needs the infinite to be simpler than *all* finite values. That is, even if Swinburne’s argument succeeded for the googplex, this would only show that the googplex is simpler than infinity, not that all finite values are simpler than infinity. And, in fact, an argument can be made that we need to understand 1 to understand infinity, but not vice versa, and that therefore 1 is simpler than infinity. I’ll address this point again below, but simply note here that in *Epistemic Justification* Swinburne does indicate that 0 and 1 are simpler than are other values. To avoid this second problem with his argument, Swinburne must argue that we can understand infinity without understanding any finite values, including 1.

Third and most problematic, Swinburne's argument fails even for large finite values such as the googplex. Let us grant Swinburne that we can understand the infinite without understanding the googplex. *We can also understand the googplex without understanding infinity.* Then neither is simpler than the other on Swinburne's own criterion. That is, Swinburne's criterion does not provide us with a total order for the simplicity relation. Put another way, we can have two things, neither of which is simpler than the other, such as the infinite and the googplex. This point may be driven home by considering a nonnumeric example. Let us swap an ant in for the googplex. We can understand the infinite without understanding an ant. But from this nothing follows regarding the relative simplicity of the infinite and an ant, unless we also know that we must understand the infinite to understand the ant. This claim is doubtful, and so we know nothing regarding which is simpler, the infinite or an ant from Swinburne's criterion. This point was made above for the googplex. Each can be understood without the other, and so neither is simpler than the other. It is thus unclear what Swinburne hopes to accomplish by pointing out that we can understand the infinite without understanding the googplex, for nothing follows from this claim. Certainly it does not follow that the infinite is simpler than the googplex.

I thus conclude that Swinburne's argument for P from Swinburne's criterion of mathematical simplicity ("One formulation of a law is mathematically simpler than another in so far as the latter uses terms defined by terms used in the former but not vice versa") fails.

6.2 Swinburne's Argument from Scientific Practice

Another strand of Swinburne's argument for P is from scientific practice, that is, Swinburne argues that since scientific practice prefers infinite values over large finite ones, the infinite is simpler. As Swinburne writes, "And scientific practice shows this preference for infinite values over large finite values of a property. It preferred to postulate that light had an infinite velocity rather than a particular large finite velocity --- for example, 301,000 km/sec. --- until data were found that were very improbable on the former hypothesis," and again, "As I noted in Chapter 3, scientists have always preferred hypotheses of infinite velocity to hypotheses of very large finite velocity, when both were compatible with the data." I believe that this argument from scientific practice is just as ineffectual as Swinburne's argument from mathematical simplicity.

Aristotle and Newton held that light travels with an infinite velocity. But Empedocles believed that light traveled with a large finite velocity. Galileo went up onto a hill with lanterns in an attempt to measure the speed of light. Galileo found that light could have an infinite velocity or very large finite velocity. That is, the limitation on Galileo's experiment was the speed of human reaction. But Swinburne does not discuss any of these figures in any detail. Are we to assume that in every case where someone preferred a large finite velocity for the speed of light, that person had data to support that position? That is, did Empedocles really have data inconsistent with the hypothesis that light travels at an infinite velocity? It would be most remarkable if he had such data.

The basic problem is that Swinburne simply does not support his argument for P from scientific practice. Given the central role that P plays in Swinburne's argument, P is very important to Swinburne's overall argument, and therefore Swinburne should give

detailed argument in support of P. Who are these historical figures? Exactly what does Swinburne mean by “scientific practice”? And how can “it” have preferences? Swinburne not only does not answer these questions, he also gives almost no specific historical support. Swinburne’s claim that “scientists have always preferred ... infinite velocity” seems simply false taken as a descriptive claim, and he makes no effort to address this worry. Robert Burns notes this failure, writing “Since so much appears to turn on an appeal to the facts about beliefs and practices of scientists throughout history concerning simplicity, it is regrettable that historical references on this issue are largely limited to the period of the emergence of Newtonian physics...”¹⁰ And, in fact, not much is said about this period.

If Swinburne wants his argument from historical figures to be taken seriously, then far more examples must be given and far more work needs to be done. In *The Coherence of Theism*, Swinburne has the right idea in a different context. There he writes:

Ultimately, if anybody really thinks that creedal sentences merely affirm intentions to pursue behavioral policies, the only way to settle whether they do or not is by a sociological and literary survey of what people who use creedal sentences think that they are doing and have thought that they were doing over the past two thousand years.¹¹

This view is correct. And in the case of scientists’ alleged preference for the infinite, the only way to settle the matter is to look at what scientists have thought going

back as far in time as possible. Yet Swinburne gives no argument beyond simply stating “scientists have always preferred hypotheses of infinite velocity to hypotheses of very large finite velocity, when both were compatible with the data.” Asking for historical support for P is admittedly asking for much. But if Swinburne wishes to argue from scientific practice, then it is scientific practice that must be studied.¹²

Another way for Swinburne to argue for his principle would be to refer the reader to other places where P has been used or accepted. Swinburne could show the case where someone else claimed that zero and infinite are simpler than particular finite values. Swinburne does not do this, leading to the question: Has this principle been used by others? What is the precedent? Who has used principle P in the past? If this is the first time that P has been used, P would thereby require stronger arguments in support. Swinburne must present a detailed and rigorous argument supporting his principle. Swinburne’s vague hand waving at scientific practice is not persuasive.

6.2.1 Further Considerations on Swinburne’s Argument for P from Scientific Practice

Note that even if it were true that historical figures have always *preferred* hypotheses of 0 and the infinite to hypotheses of particular finite values, it still does not follow from this that 0 and the infinite *are simpler* than particular finite values. There are a number of competing explanations as to why zero and infinite values might be preferred to finite values. One possible explanation would be that people do not wish to admit that they lack precision in measurement. A person who cannot find any mass for a particle

may not wish to admit that his instruments are not precise enough to measure a small but finite mass. Better to claim, so the person reasons, that the particle has zero mass. The person who cannot find a particular finite velocity for light may not wish to admit that his instruments are not precise enough to measure a large finite value. He might therefore be tempted to claim that light has an infinite velocity. The explanation for people's preference for zero and the infinite over particular finite values may simply be psychological in nature, as opposed to being a logical principle. There are people who have difficulty admitting to any limitations or ignorance; it is therefore not inconceivable that such a psychological explanation could be the correct one. Thus Swinburne, to support P from the argument from scientific practice, needs to rule out other possible better explanations for the preferences of scientists, a difficult task.

Let us briefly consider two more psychological explanations that could explain scientists' preference for 0 and the infinite. First, in the case of the infinite and the speed of light, one possible explanation for why people would prefer the infinite is that Aristotle claimed that light traveled with infinite velocity. It may simply be the case that people tend to adopt the positions of Aristotle.

Second, P also bears a striking resemblance to the primacy-recency effect, a cognitive bias whereby people remember the first and last items in a list better (with greater frequency) than they remember items in the middle of a list. This resemblance is especially strong given that we are thinking of 0 and the infinite in the sense of 0% and 100%, i.e., the endpoints. We could imagine people claiming that there is a neatness to the first and last items in a list. Swinburne writes that, "There is a neatness about zero and infinity that particular finite numbers lack." Above, I considered two strands of

Swinburne's argument for P. If "the neatness argument" is meant to be a third, I simply note that more work needs to be done.

Is P true? It is not clear, but Swinburne certainly has not supported P. The two main strands of his argument for P each fail. Furthermore, he provides no references to others who have used P. In the next section, I present evidence that P might simply be false. To preview, P is in great tension with Swinburne's position in another of his books, *Epistemic Justification*.

7. P and *Epistemic Justification*

It is no overstatement to say that *The Existence of God* relies crucially on P. And yet we again see a tension between two of Swinburne's books when we turn from *The Existence of God* to *Epistemic Justification* and look for support for P. First, P does not appear in *Epistemic Justification*, where it is a glaring omission as Swinburne discusses simplicity at length. Second, P seems to contradict what Swinburne does write in *Epistemic Justification* on the subject of the simplicity of numbers. Third, P, *prima facie*, contradicts the principle of indifference, a principle which is discussed in *Epistemic Justification*. I discuss these three points in order.

First, P does not appear in *Epistemic Justification*. This omission is notable, as other criteria of simplicity are discussed in *Epistemic Justification*, and these criteria closely mirror the criteria discussed in *The Existence of God*. More specifically, every other important consideration pertaining to simplicity that appears in *The Existence of God* appears in *Epistemic Justification*; only P is missing. Chapter 4 of *Epistemic*

Justification is entitled, “The Criteria of Logical Probability,” and it begins with the sentence, “So what are the correct criteria for what makes what probable?” Pages 83 to 99 are subheaded, “The Criterion of Simplicity.” And yet there is no mention in this section (or anywhere in *Epistemic Justification*) of P. I wish to stress this point. Swinburne is relying on a principle in *The Existence of God* that does not even warrant mention in *Epistemic Justification*. I find this omission glaring.¹³

Second, when Swinburne does discuss the simplicity of numbers in *Epistemic Justification*, he writes:

A mathematical entity or relation Q is simpler than another one Y if Q can be understood by someone who does not understand Y, but Y cannot be understood by anyone who does not understand Q. Thus 0 and 1 are simpler entities than 2, 2 than 3, and so on. For you cannot grasp the notion of 2 As unless you can grasp the notion of 0 As. (You would not know what it is for something to be an A in the room unless you knew what it was for these to be 0 As in the room.) Conversely, 0 must be understood together with 1, but 1 can be understood without 2 being understood.¹⁴

It is notable both that the infinite is nowhere mentioned, and that 0 and 1 are said to be equally simple. If true, and P is true (0 and the infinite are equally simple), then clearly P should be modified to read that 0, 1, and the infinite are all equally simple. This modified principle seems to logically follow, for:

Epistemic Justification: 0 and 1 are equally simple

The Existence of God: 0 and the infinite are equally simple

Thus: 0, 1, and the infinite are equally simple

However, this conclusion would do much harm to Swinburne's argument, for it is important for Swinburne that the infinite be simplest, and though Swinburne can rule out a person of 0 power, he could not similarly dismiss a person of 1 power. It is unclear how Swinburne might reconcile P in *The Existence of God* with his view of the simplicity of numbers presented in *Epistemic Justification*.

Third, P also seems to contradict the principle of indifference, a principle which is discussed in *Epistemic Justification*. The principle of indifference "states that two 'events' (that is, states of affairs) are equiprobable if we do not know any reason why one should occur rather than the other."¹⁵ If P were true, P would be a reason why a property of either infinite or 0 degree would be more probable than nonzero finite values of the property. Put loosely, P would override the principle of indifference. But in all cases of which I am aware, 0 is treated exactly as is any other number. One example where the principle of indifference plays a crucial role is the case of a triangle inscribed in a circle. An angle is arbitrarily selected in the triangle. Angles are considered which can vary from 0 (including 0) to 180 (excluding 180). In this case, 0 is considered exactly as probable as any other number (any other particular finite value). Specifically if we ask, "What is the probability that the angle will be between, e.g., 0 and 18?" The answer is 10%, which is exactly the response that would be given for any 18 degree interval, e.g.,

20 to 38 degrees. The point is that P fails in this case. 0 is no more probable than any other number.

Perhaps Swinburne would reply that this is a case involving numbers and not properties. But angles are continuous; this is not a case of numbers of entities. Rather this seems more like a case involving a property, where the property is “anglehood.”

Swinburne might also reply that in the triangle case the principle of indifference is stipulated. I do not think this correct, but even if so, if P were a real principle, it would seem necessary to explain why the principle of indifference is allowed to override P in the triangle case. At the very least there would be a tension between P and the principle of indifference, which should have been mentioned in the literature at some point. To my knowledge, no one has mentioned P in this (or any other) context.

There are serious tensions between P and Swinburne’s claims in *Epistemic Justification*. It is not clear how Swinburne might reconcile these tensions. In particular, Swinburne’s claim that 0 and 1 are simplest appears to contradict P.

8. P and Mark Wynn

Even granting P, would the infinite God be simpler than some finite god or other? In section 3 of this chapter, I wrote, “If the infinite is far simpler than particular finite values, then h may be simpler than h_f (in fact, below I discuss why even this conclusion does not follow).” Recall that h is the hypothesis that the infinite God exists; h_f is the hypothesis of a finite god. Mark Wynn brings a very insightful criticism against Swinburne:

...there is only one way to possess every power, or to know every true proposition, whereas there is no limit to the number of ways in which an agent may fall short of these states. It follows that (other things being equal) there is more likely to be one or another finite designer than one or another infinite designer; that is, the prior probability of $[h_f]$ is greater than that of $[h]$.¹⁶

Swinburne summarizes and then attempts to deny Wynn's point, writing:

However, it may still be argued that, although any particular hypothesis of a finite god or many finite gods is less probable than theism, still there are so many possible hypotheses of finite gods with different degrees of power, and knowledge and different numbers of gods, that surely it is more probable that one of these is correct than that theism is correct. But ... consideration of the weight we give to simplicity in other areas of inductive inquiry suggests that we normally give it such weight that a really simple hypothesis is intrinsically more probable than a disjunction of many more complex hypotheses. For example—would a detective really think that it is more probable that some hypothesis or other to the effect that Jones cooperated with at least one of the few billion inhabitants of the earth to do some crime more probable than the hypothesis that Jones

did it alone when both hypotheses give equal probability to the observed data.¹⁷

I believe that Wynn has presented a very powerful and insightful criticism of Swinburne's *use of principle P*, namely, even granting P, one or another finite god may still be more likely to exist than God in virtue of the massive number of different possible finite gods. Swinburne's response is off the mark. Swinburne was very careful in *The Existence of God* to distinguish between numbers of entities and degrees of properties. When it comes to numbers of entities, Swinburne claims that 1 is simplest. When it comes to degrees of properties, Swinburne claims that 0 and the infinite are simplest. By so distinguishing, Swinburne is able to argue that God (one being, of infinite properties) is very simple. But notice that in Swinburne's response to Wynn, this distinction between properties and entities has broken down. Wynn's criticism involved degrees of properties; Swinburne's response gave an example involving numbers of entities (people committing a crime). Thus though Swinburne's example given in reply to Wynn may seem persuasive, the reply simply is irrelevant to Wynn's criticism and ignores a distinction that Swinburne himself both makes and relies on. Swinburne still faces Wynn's concern.

By way of concluding this section let us consider one additional problem that Swinburne faces. Swinburne claims that 0 and infinity are simpler than other nonzero finite values. Swinburne uses this claim to argue that God's having the properties of power, knowledge, and freedom to an infinite degree is simplest. When pressed by Wynn, Swinburne places even more emphasis on simplicity. A concern arises, namely, Swinburne would have trouble arguing that it is probable that any person (including God)

exists who is at the mean on any property. We might call this an “Aristotelian concern,” following Aristotle in thinking of virtues as means. To take one example, consider Swinburne’s mention of hard-heartedness in *Faith and Reason*, “There is no point in ... asking His [God’s] forgiveness if He is too hard-hearted to give it.”¹⁸ It is likely a god worthy of worship is neither too hard-hearted, nor too soft-hearted. (The reader who does not like the example of hard-heartedness should replace hard-heartedness with a property on which he believes God to be at the mean. Certainly there must be many such properties; hard-heartedness was taken as one example.) Yet when we consider God’s hard-heartedness in relation to Swinburne’s claim in *The Existence of God* that 0 and infinity are simple, we are pushed in the direction of being forced to claim that God is most likely either infinitely hard-hearted, or hard-hearted to a 0 degree, i.e., entirely soft-hearted. Neither position seems tenable. The specific worry is that if the mean is much less simple, and therefore much less probable, than the extremes (0 and infinity) in terms of intrinsic probability (as Swinburne claims), then a person with the mean of a property would require a staggering amount of explanatory power in order to be likely to exist; this does not seem right. I believe that this Aristotelian concern is an additional piece of evidence indicating that Swinburne has overstated the simplicity of 0 and infinity relative to other nonzero finite values.

9. P and Hume

I hope to have argued to this point that P is not only not supported by coherent argumentation in *The Existence of God*, but P contradicts Swinburne’s thought elsewhere,

specifically *Epistemic Justification*. I now want to turn to a discussion of P in relation to Hume's *Dialogues*. It is difficult to stress just how important P is for Swinburne's argument, and how much work it does. P is the principle that cuts through several of Philo's worries in Hume's *Dialogues*. There, Hume noted that even if we knew that there must be a designer, the difficulty is knowing what the properties of this designer are. Is the designer lame, evil, deceitful? Perhaps god is young and this was a first attempt at creating a world and he has moved on. There may be more than one designer. Swinburne's strategy towards rebutting such worries is, in a word, simplicity. 1 is simpler than any larger integer in the setting of numbers of entities, and the infinite is simpler than any finite value (P) for degrees of properties. If true, Swinburne is well on his way towards allaying any fears that there might be a god such as Hume describes. Consider some of Philo's remarks in Part 5 of the *Dialogues*:

Now, Cleanthes, said Philo, with an air of alacrity and triumph, mark the consequences. First, By this method of reasoning, you renounce all claim to infinity in any of the attributes of the deity. For as cause ought only to be proportioned to effect, and the effect, so far as it falls under our cognizance, is not infinite; what pretensions have we, upon your suppositions, to ascribe that attribute to the divine being?

Swinburne relies on Principle P, discussed in this chapter, to get around this concern that that attributes of the deity cannot be known to be infinite. If P were true,

then $P(h|k)$ would be relatively high, and Swinburne would be well on his way towards proving that God likely exists. I have argued that P is not true. Later Philo continues:

And what shadow of an argument, continued Philo, can you produce, from your hypothesis, to prove the unity of the Deity? A great number of men join in building a house or ship, in rearing a city, in framing a commonwealth: why may not several deities combine in contriving and framing a world? This is only so much greater similarity to human affairs...

In chapter 3 I focused on the strategy that Swinburne undertook to argue for the unity of the deity, namely he argued that small and round numbers are simple. I argued that all real numbers are equally simple. Finally consider:

In a word, Cleanthes, a man who follows your hypothesis, is able, perhaps, to assert, or conjecture, that the universe, sometime, arose from something like design: but beyond that position he cannot ascertain one single circumstance, and is left afterwards to fix every point of his theology, by the utmost license of fancy and hypothesis. This world, for aught he knows, is very faulty and imperfect, compared to a superior standard; and was only the first rude essay of some infant deity, who afterwards abandoned it, ashamed of his lame performance: it is the work only of some dependent, inferior deity; and it is the object of derision of his

superiors: it is the production of old age and dotage in some superannuated deity; and ever since his death, has run on at adventures, from his first impulse and active force, which it received from him...

How does Swinburne get around the problem that these hypotheses seem possible? Swinburne uses simplicity to argue that these hypotheses are very unlikely. Swinburne's argumentative strategy is clever. That is, if it were true that God is far simpler than any other possibility (finite or many gods) and that simplicity meant that God were intrinsically likely to exist, whereas complexity meant that finite or many gods were unlikely to exist, then Swinburne would have succeeded in responding to Hume's (Philo's) concern indicated in the quote above. But I hope to have successfully argued above that P is unsupported and likely false. Swinburne has thus not adequately responded to some of the concerns raised by Hume in his *Dialogues*.

10. Historical and Empirical Problems with Accepting Swinburne's Principle

Swinburne claims that scientists have always preferred the infinite. He also claims that 1 is much simpler than greater whole numbers when it comes to numbers of entities. These claims allow Swinburne to argue that God is very simple. Swinburne thereby defeats many of the worries of Hume. Above I argued that Swinburne does not support his claim of P; whereas these considerations were largely theoretical in nature, I now wish to present what I call "an empirical concern" that P faces: How is it that so many people have proposed hypotheses of many or finitely powerful gods, given how much

more complex Swinburne claims such hypotheses are? Look through history. The Greeks and Romans believed in polytheism. Many people have held that there are two competing gods, one good and one evil. If Swinburne were correct regarding the extreme complexity of these hypotheses, the question would arise: How is it that so many people believed such complex hypotheses? Recently, Frank Dilley argued at length for a finite god in “A finite god reconsidered.”¹⁹ Again, such an article would be odd if a finite god were truly complex, but it is not. Dilley does not even address the issue of complexity when considering objections.²⁰

People have repeatedly put forth theories of many gods and finite gods. It seems unlikely that so many people would repeatedly put forth theories if such theories were, in fact, profoundly complex, as Swinburne claims. I think, instead, that Swinburne has simply overstated the complexity of numbers greater than 1 as compared with 1, and finite values as compared with the infinite. People often do astoundingly irrational things, and so I do not mean what I am calling “the empirical argument” to be a knockdown argument against Swinburne. I simply put it forth as one additional piece of evidence against Swinburne’s claims of the extreme simplicity of God.

In this chapter I have argued that the infinite is not simpler than finite values. Insofar as the infinite is given a definite meaning, I believe it to be as simple as any particular finite value. Thus Swinburne has not successfully argued that an infinite god is more likely to exist than a finite god. In the next chapter, I argue that even if the infinite were simple, God is not infinite on two of three crucial properties. Thus Swinburne’s argument to the simplicity of God via the infinite fails twice over. This chapter showed

that the infinite is not simple. The next shows that, even if the infinite were simple, God is not infinite.

Notes

¹ Swinburne *The Existence of God*, 53.

² Robert M. Burns makes this point in his “Richard Swinburne on Simplicity in Natural Science,” 186.

³ Swinburne *The Existence of God*, 109.

⁴ Swinburne *The Existence of God*, 97.

⁵ Swinburne *The Existence of God*, 97.

⁶ Smith, *Review Article*, 92.

⁷ There is an interesting question as to whether we could ever come to find out that the particles truly were travelling in no time at all. For it might be the case that the particles were travelling so fast that we simply could not measure any time elapsing. However, this limitation is epistemic, and the point remains that it is logically possible for particles to behave as described.

⁸ Swinburne *The Existence of God*, 55.

⁹ Swinburne *The Existence of God*, 97.

¹⁰ Robert M. Burns, “Richard Swinburne on Simplicity in Natural Science,” 186.

¹¹ Swinburne *The Coherence of Theism*, 90.

¹² Schellenberg writes in a different context, “He needs the help of historians,” in “Christianity saved? Comments on Swinburne’s apologetic strategy in the tetralogy,” 284.

¹³ Swinburne’s principle P is so poorly supported in *The Existence of God* and so much in tension with *Epistemic Justification* that I am inclined to agree with Don Fawkes and Tom Smythe’s assessment of Swinburne’s argument (Fawkes and Smythe are referring to all theistic arguments, which I believe oversteps the mark; the target is too wide, so to

speak; I mean the quote only to refer to Swinburne's argument), "...theistic arguments are so malleable, profligate, overreaching, equivocal, anthropomorphic, selective, inconsistent, and uncritical as to be inept." Fawkes and Smythe, "Simplicity and Theology," 1.

¹⁴ Swinburne *Epistemic Justification*, 90.

¹⁵ Swinburne *Epistemic Justification*, 115-116.

¹⁶ Wynn, 322. Also note that in chapter 2 I argued that there is, in fact, more than one way to possess "infinite" power, knowledge, and freedom (where "infinite" is in quotes because all the properties cannot be possessed to a truly infinite degree). However, this conclusion hurts Swinburne's argument as he needs there to be only one way to possess these properties to an infinite degree.

¹⁷ Swinburne *The Existence of God*, 146.

¹⁸ Richard Swinburne *Faith and Reason, Second Edition* (Oxford: Clarendon Press, 2005), 146.

¹⁹ Frank B. Dilley, "A finite God reconsidered."

²⁰ Frank B. Dilley, "A finite God reconsidered," 35-38.

Chapter 5: God in The Existence of God and (versus) The Coherence of Theism

1. Introduction

Let us take stock. In the first chapter, I presented a broad overview of Swinburne's *The Existence of God*, focusing on Swinburne's overall strategy and the way that Bayes's Theorem, probability, and evidence fit into this strategy. The second chapter considered the evidence in more detail and ended by noting that although the evidence may do the work Swinburne claims that it does in terms of *C-inductive* arguments, or raising the probability of God's existence, the simplicity of God is needed to argue that $P(h|k)$ is high, thereby allowing Swinburne's overall argument to be a correct *P-inductive* argument. That is, the simplicity of God is crucial in order that Swinburne's overall cumulative argument may succeed in showing that God likely exists. In the third and fourth chapters simplicity was considered, and I argued that Swinburne relies on a conception of mathematical simplicity that is not adequately supported. In these chapters I did not discuss Swinburne's view of God in detail, beyond noting that Swinburne claims that God can be fully described on three properties. A more complete discussion of God is a task for this chapter, where the goal will be to determine how Swinburne understands God. To accomplish this task we will consider not only *The Existence of God*, but also another of Swinburne's books, *The Coherence of Theism*. Recall that the two books relate as follows: "*The Coherence of Theism* was concerned with what it means to say that there is a God and whether the claim that there is a God is internally coherent. *The Existence of God* is concerned with whether the claim is true."¹

We remain on the theme of simplicity. Whereas in the previous chapters we focused on the principles through which Swinburne argues that God is simple, in this chapter a main theme will be that there is a tension between Swinburne's two books. In *The Coherence of Theism*, God emerges as a very complex being. By contrast, Swinburne repeatedly claims that God is very simple in *The Existence of God*. I ultimately conclude that the complex description of God presented in *The Coherence of Theism* is the more accurate and detailed description, and that a realization of this fact presents difficulties for Swinburne's argument in *The Existence of God*. In particular, God is not infinite on the properties power and knowledge, which means that, even if the infinite were simple, Swinburne cannot argue to the simplicity of the God from the simplicity of the infinite.

2. God in *The Existence of God*

Consider what Swinburne writes in *The Existence of God*:

I take the proposition "God exists" (and the equivalent proposition "There is a God") to be logically equivalent to "there exists necessarily a person 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. I understand by God's being eternal that he always existed and always will exist... By God's being perfectly free I understand that no object or event or state

(including past states of himself) in any way causally influences him to do the actions that he does—his own choice at the moment of action alone determines what he does. By God's being omnipotent I understand that he is able to do whatever it is logically possible (i.e. coherent to suppose) that he can do. By God's being omniscient I understand that he knows whatever it is logically possible that he know. By God's being perfectly good I understand that he always does a morally best kind of action (when there is one), and does no morally bad action. By his being the creator of all things I understand that everything that exists at each moment of time (apart from himself) exists because, at the moment of time, he makes it exist, or permits it to exist. The meaning of this claim that there is a God will be developed in somewhat greater detail at points in later chapters, especially in Chapter 5.²

God is often taken to be an all-powerful, all-knowing, and perfectly good being; however, though Swinburne believes that God is all of these things, Swinburne does not define God in this manner. Rather, Swinburne claims that God is all-powerful, all-knowing, and perfectly free, and that all of God's other properties (such all perfect goodness) follow from these three properties. That is, Swinburne claims that "God exists" reduces to "a perfectly free, omnipotent, omniscient person exists," and that the other properties listed above are logical consequences of these three properties. The reason that Swinburne wishes to completely describe God on merely three properties is that adding

additional properties decreases the intrinsic probability, $P(h|k)$, of God's existence, and $P(h|e \& k)$ varies directly with $P(h|k)$. Given that Swinburne wishes to conclude that $P(h|e \& k)$ is greater than 50%, he must argue that $P(h|k)$ is high. Put another way, the more properties that are required to describe a person, the more complex (less simple) the person is, and as Swinburne argues that simplicity is the major determinant of $P(h|k)$, Swinburne wants to describe God on as few properties as possible to maximize $P(h|k)$. In addition to describing God on few properties, Swinburne claims that God is infinite on these three properties and that the infinite is simple. In the next section, I outline Swinburne's argument for the claim that God's complete description can be reduced to three properties,³ and I critique it. I then turn to the tension which exists between *The Existence of God* and *The Coherence of Theism*.

2.1 Three Properties Do Not Suffice

Let us assume that "a person exists" has an intrinsic probability of 0.01. That is, when h_p is "a person exists" and k is mere tautological evidence, $P(h_p|k) = 0.01$. Then if we add properties to the person, the person's intrinsic probability decreases as we are adding to the complexity of the person. Another way to put this point is that if a person infinite on certain properties exists, then that fact logically implies that a person exists; thus the intrinsic probability of "a person exists" must be higher than the intrinsic probability of "a person infinite on certain properties exists." It could be the case that postulating a property to an infinite degree decreases intrinsic probability by 1/10. (Unfortunately Swinburne provides very few numerical values in his work, and does not

do so in this case.) On these assumptions God, if described on three properties, would have an intrinsic probability, $P(h|k)$, of 0.00001. Then if more than three properties are required to fully describe God, God's intrinsic probability would be lower still. Each additional property would decrease $P(h|k)$ by 1/10. The key point is that adding additional properties increases complexity and thus decreases the intrinsic probability of God's existence; thus Swinburne wishes to reduce God to being fully described on three properties.

And Swinburne makes a valiant effort to do so, claiming that God's description can be reduced to "an omnipotent, omniscient, perfectly free person exists." Swinburne brings about this reduction in properties by claiming that all of God's other properties (e.g., God's not having a body, that is, His being an "omnipresent spirit") logically follow from God's being an omnipotent, omniscient, perfectly free person.

2.1.1 Omnipresent Spirit

Let us examine Swinburne's reasoning. First, how does Swinburne argue that God's being an omnipresent spirit and creator of all things follow from God's being an omnipotent, omniscient, perfectly free person?

I argue next that God's possession of the other properties ascribed to him—being an omnipresent spirit, being creator of all things, and ... being perfectly good all follow from his being omnipotent, omniscient, and perfectly free. His possession of the first two properties is easy enough to

show. If God is omnipotent, then he must be able to control by basic actions all states of affairs everywhere. If God is omniscient, he must know what is going on everywhere. If he depended for this knowledge on the operation of nerves or eyes, then, if they were to behave in unusual ways, he would lack knowledge. But since, *ex hypothesi*, God's omniscience belongs to his essence, this could not happen. Hence God is an omnipresent spirit.⁴

Presumably the "follow" that Swinburne has in mind (in the third line of the quote above) is logical entailment. Then Swinburne's argument that God is an omnipresent spirit is equivalent to the claim that an *embodied*, omnipotent, omniscient, and perfectly free person is a logical impossibility (recall that a spirit is disembodied). Put another way, Swinburne's claim is that a contradiction can be arrived at by assuming such a person exists. How does Swinburne suggest we arrive at this contradiction? "If he depended for this knowledge on the operation of nerves or eyes, then, if they were to behave in unusual ways, he would lack knowledge." An embodied person could lack knowledge due to the failure of eyes or nerves, and thus could not be omniscient. But this argument assumes that eyes or nerves cannot be infallible (must be fallible, perhaps worse still, the argument seems to assume that an embodied person must have nerves or eyes). I do not believe that "eyes and nerves cannot be infallible" is a necessary truth. In *The Coherence of Theism*, Swinburne discusses the way in which we determine whether or not a state of affairs (he is discussing coherence in the context of the existence of a being such as God) is coherent. He writes:

I argue for the coherence of [theism] in two ways; first by attempting to refute arguments purporting to show that the claims in question are incoherent, and secondly by attempting to construct positive proofs of their coherence. I attempt the latter in the only way in which ... this is possible. I attempt to describe in some detail what it would be like for them to be true, that is to give descriptions of circumstances which entail that the claims hold.⁵

Following Swinburne, let me suggest that the following description would allow an *embodied*, omnipotent, omniscient, perfectly free person to exist, that is, it is coherent to assume that such a person exists. Certainly our experiences in the world indicate that eyes and nerves are fallible, and Swinburne's argument trades on this intuition. But imagine that some god is embodied (perhaps in a way that humans perhaps cannot currently comprehend, this god might be comprised of dark matter, some omnipresent, mysterious particle). There seems nothing contradictory about assuming the existence of such a god (that is, to reiterate, an *embodied*, omnipotent, omniscient, perfectly free person). It seems perfectly coherent to suppose that the particle out of which this god is comprised gives god perfect knowledge of everything at all times, without the possibility of mistake or error. If Swinburne wishes to argue against the coherence of such a being, he must show that a contradiction can be derived by assuming the existence of such a being. I do not believe that Swinburne could succeed in this task.

If Swinburne's argument above fails, as I suggest, then God requires at least four properties to be described. That is, God would have to be described as a *disembodied*, omnipotent, omniscient, perfectly free person. Now four properties are needed to describe God, reducing the intrinsic probability of His existence by 1/10, given my assumption above that additional properties decrease intrinsic probability by a factor of 1/10. If this additional property of disembodiedness is required to describe God, then even if Swinburne's argument previously (describing God with three properties) showed God to exist with 99% probability, the 1/10th decrease in intrinsic probability $[P(h|k)]$ takes the (posterior) probability of God's existence $[P(h|e \& k)]$ to 9.9%. The reason for this reduction is that $P(h|k)$ would be reduced by 1/10, and $P(h|e \& k)$ varies directly with $P(h|k)$.

The crucial point is that the additional property required to describe God causes Swinburne's argument to fail, regardless of how strong the argument previously had been. Note that the derivation of God's disembodiedness occupies a small portion of Swinburne's book (less than one paragraph), yet it is absolutely essential. The failure of this derivation leads to the failure of Swinburne's entire argument. And I have suggested that the argument does fail. If Swinburne wishes his argument to succeed, he must strengthen his argument that disembodiedness follows from the properties omnipotence, omniscience, and perfect freedom.

2.1.2 Creator of all things

Recall that in his complete description of God (quoted at the beginning of this chapter) Swinburne writes, “By his being the creator of all things I understand that everything that exists at each moment of time (apart from himself) exists because, at the moment of time, he makes it exist, or permits it to exist.” Swinburne argues that God’s being the creator of all things logically follows from the three properties as follows: “Since God is omnipotent, then he could prevent anything from happening if he so chose. So whatever happens happens because he makes or permits it to happen. Hence he is the creator of all things in the sense that I delineated.”⁶ I believe that this argument does not succeed for the following two reasons.

First, Swinburne gives an account of omnipotence on which an omnipotent being cannot perform morally bad actions. We will examine this position in more depth below, but for now imagine that a person (human, i.e., not God) performs a morally best action. Swinburne argues for God’s being the creator of all things as follows, “Since God is omnipotent, then he could prevent anything from happening if he so chose.” But preventing a morally best action would be a morally bad action, and so God cannot prevent a person’s performing a morally best action. Returning to the definition of “creator of all things,” God does not make, or bring about, this morally best action (the person does), nor does God permit it to happen, for permitting an action to happen implies that one could prevent the action. But, again, God cannot prevent the morally best action. Thus on Swinburne’s view of God, Swinburne’s argument that God’s being the creator of all things logically follows from the three properties fails.

Second, recall that Swinburne is trying to show that God’s being the creator of all things logically follows from God’s being an omnipotent, omniscient, perfectly free

person. Swinburne's argument quoted above succeeds so long as God does, in fact, exist. But from God's being an omnipotent, omniscient, perfectly free person, it does not follow that God must always exist. There is no logical contradiction in assuming the existence of universe without such a God until time t , and then a God after time t . Then God would not be the creator of all things in the sense defined by Swinburne, as prior to time t the universe would exist without God's being the being who permits this existence.

In a later chapter, when Swinburne is no longer arguing that God's being the creator of all things follows from the three properties, Swinburne seems to realize that there is no contradiction in assuming that God came into being at some time after the beginning of the universe, "It is clearly simpler to suppose that the ultimate principle of explanation, the final source of things, has always been the same—rather than to suppose that only, for example, in 4004 BC did God come to be and reign—and so to suppose that God has existed eternally."⁷ Notice in particular that Swinburne merely writes that it is *simpler* to suppose that God has existed eternally; he does not write that it is *logically required* to suppose that God has existed eternally. And to reiterate, his argument above needs to be that God's being the creator of all things logically follows from God's three properties, that is, that it is logically required that God exist eternally given God's three properties. At times Swinburne seems to describe God as being eternal, that is, that God requires four properties to be described fully. If four properties are needed, I simply note that $P(h|k)$ is lower than if only three properties are needed (and Swinburne should reword several sections of his Chapter 5).

2.1.3 Perfectly Good

Swinburne also argues that God's perfect goodness follows from the three properties. A detailed discussion of this argument is beyond the scope of this thesis. Here I simply note that Swinburne's argument relies on claims which he himself admits are contentious.⁸ And insofar as this argument fails, more properties are required to describe God, thus reducing the value of $P(h|k)$.

To summarize section 2 of this chapter, Swinburne argues that God can be described on merely three properties, but his arguments for this position are at best contentious, and at worst fail outright. The failure of these arguments increases the complexity of God. And if God requires additionally properties to be described, $P(h|k)$ is lowered, which lowers $P(h|e \& k)$. As Swinburne's overall conclusion is that $P(h|e \& k) > 50\%$, any lowering of $P(h|k)$ raises the concern that Swinburne's overall argument fails.

3. Specific Tension Between *The Existence of God* and *The Coherence of Theism*

One of the recurring themes of my thesis is that there is a great tension between Swinburne's positions in *The Existence of God* and his positions in many of his other works. This is to say that Swinburne lacks consistency across works. In several places Swinburne's positions appear to be contradictory. I previously mentioned that Swinburne often refers to his other work. It would thus prove especially problematic to Swinburne's overall argument if his positions across his texts not only did not reinforce each other, but instead were at odds and possible even contradictory. In this chapter, we analyze the

tension that exists between *The Existence of God* (the second book in Swinburne's trilogy) and *The Coherence of Theism* (the first book in the trilogy).

Recall that:

The Coherence of Theism was concerned with what it means to say that there is a God and whether the claim that there is a God is internally coherent. *The Existence of God* is concerned with whether the claim is true; it is concerned to assess the weight of arguments from experience for and against this claim, and to reach a conclusion about whether on balance the arguments indicate that there is a God or that there is not.⁹

In chapter 1, we saw that in order to argue that the existence of God is more probable than not, Swinburne stressed the simplicity of God. "Theism postulates God as a person with intentions, beliefs, and basic powers, but ones of a very simple kind, so simple that it postulates the simplest kind of person that there could be."¹⁰ In Chapter 4, I point out that this statement is easily seen to be false. For now, let us consider the question: Why does Swinburne think that God is so simple? The answer is that God has infinite power, infinite knowledge, and infinite freedom, and Swinburne argues that having some property to an infinite degree is simple. Thus God emerges the simplest person imaginable in *The Existence of God*. The picture that emerges is that we simply take the three properties of power, knowledge, and freedom, and let each be as great as possible. The implication is that the being arrived via this procedure is both simple and, perhaps even more important for Swinburne's argument, unique.

By contrast, *The Coherence of Theism* is a book devoted to considering the possibility that God may be internally incoherent, that is, that the properties ascribed to God lead to a contradiction. Of course, Swinburne ultimately concludes that God is internally coherent; however, a great deal of work is done “knocking God into shape.” There exists a strong tension between many of the properties ascribed to God, and thus it is necessary for Swinburne to carefully explain what is meant by, e.g., God’s being omnipotent. The picture that emerges from *The Coherence of Theism* is that of God as a profoundly complex being. Let us consider *The Coherence of Theism* in greater depth to see the complexity of God. Ultimately I return to the questions: Is God infinite on power and knowledge?

In *The Coherence of Theism*, there are tradeoffs and decisions to be made between the various properties. Most problematic for Swinburne, there does not seem to be one unique way to perform the tradeoffs. The trouble then is that there is not a unique being infinite on the three properties, but there are several beings who are as powerful as possible on the properties, where the beings will differ depending on which property is sacrificed and which is given full force. Without a single, simple being, Swinburne’s argument in *The Existence of God* seems to crumble. Let us look at the possible trade-offs that exist between the properties and consider why such tradeoffs cause Swinburne’s argument in *The Existence of God* to falter. Let us begin by focusing on part II of *The Coherence of Theism*, specifically chapters 8 (Free and Creator of the Universe), 9 (Omnipotent), and 10 (Omniscient).

On the face of it, an omnipotent being can do anything. However, surely a being cannot perform a logically impossible action like creating a square circle. Limiting

omnipotence to logically possible actions is a first limitation that must be placed on omnipotence; this is a standard maneuver which does not cause Swinburne's argument any trouble. However, Swinburne goes on in chapter 9 of *The Coherence of Theism* to note that there is a tension between perfect freedom and omnipotence. Swinburne has argued that a perfectly free being must perform good actions, and cannot perform bad actions (this is an argument which Swinburne admits is "contentious"). Thus, we see that a further limitation on omnipotence is needed, namely:

a person P is omnipotent at a time t if and only if he is able to bring about the existence of any logically contingent state of affairs x after t, the description of the occurrence of which does not entail that P did not bring it about at t, given that he does not believe that he has overriding reason for refraining from bringing about x.¹¹

The importance of this definition is, largely, to make omnipotence compatible with perfect freedom (and thus, perhaps more importantly, with perfect goodness) by ruling out those actions which bring about a state of affairs that a perfectly free being has reason to refrain from doing. That is, on Swinburne's amended definition of omnipotence, an omnipotent being need not be able to perform morally bad actions.

Swinburne realizes that this is a very restricted account of omnipotence, and considers calling it something else:

So to knock theism into a coherent shape, we are faced with the choice of providing a narrower definition of ‘omnipotence’ on which being ‘omnipotent’ is compatible with being perfectly free, or choosing another word to describe the extent of divine power, to denote a property of which the possession is compatible with being perfectly free. There seems to me not much to choose between the alternatives...¹²

Such a sentiment is nowhere mentioned in *The Existence of God*, where Swinburne stresses the extreme simplicity of omnipotence, even when taken together with perfect freedom and omniscience. In *The Existence of God*, God is simply omnipotent. The remarkable thing is that, turning to *The Coherence of Theism*, God is not omnipotent. For example, God cannot perform a morally bad action. A person who was only omnipotent certainly could perform a morally bad action. Why is there this limitation on God’s power? Because God is also perfectly free and omniscient, and Swinburne argues that such a being cannot perform a morally bad action. The point I wish to stress here is that Swinburne’s claims in *The Existence of God* regarding the simplicity of God are simply false. God is of limited power. Such a limitation may be thought of as crying out for an explanation. The explanation is that God has other properties, and omnipotence must be “knocked into shape” so as to be consistent with the other properties. It is then remarkable and false for Swinburne to write in *The Existence of God* that God “is infinitely powerful, omnipotent” and claim that this makes God simple, when in *The Coherence of Theism* we find that God is of limited power, is not omnipotent. God lacks powers that an omnipotent person (who was not also omniscient

and perfectly free) would have. This is not only an extreme tension between the first two books of Swinburne's trilogy, but Swinburne's remarks in *The Existence of God* seem simply false in light of *The Coherence of Theism*.

The possible beings multiply when we go on to consider omniscience. In *The Existence of God*, Swinburne stresses simplicity, that is, claims Swinburne, just take these three properties to the infinite degree. In *The Coherence of Theism* a very different picture emerges. The simplest understanding of omniscience is knowing all true propositions. Consider Swinburne in *The Existence of God*, "By God's being omniscient I understand that he knows whatever it is logically possible that he know."¹³

However, this definition runs into trouble in *The Coherence of Theism* when we consider that God is also supposed to be perfectly free, for if God knew the true propositions concerning His future actions, this may very well place a limitation on His perfect freedom. This concern is similar to the worry that God's omniscience, *prima facie*, means that humans cannot be free, that is, that human action is predetermined (and thus not free) if God knows everything which is to occur. This is a difficult issue on which much has been written; here I simply wish to note that Swinburne himself, in *The Coherence of Theism*, believes that the problem only grows more acute when applied to God's future actions. "I conclude that it seems doubtful whether it is logically possible that there be both an omniscient person and also free men; *but that it is definitely impossible that there be an omniscient person who is himself perfectly free.* [my emphasis]"¹⁴ In *The Existence of God* Swinburne claims precisely that God is an omniscient person who is himself perfectly free. Recall: "I take the proposition 'God exists' ... to be logically equivalent to "there exists necessarily a person without a body

(i.e. a spirit) who necessarily is eternal, *perfectly free*, omnipotent, *omniscient*, perfectly good, and the creator of all things.”

And so we see that just as there was a tension between omnipotence and perfect freedom, there is also a tension between omniscience and perfect freedom; one must be sacrificed to knock theism into shape. Swinburne again gives perfect freedom rein, and sacrifices omniscience:

A person P is omniscient at a time t if and only if he knows every true proposition about t or an earlier time and every true proposition about a time later than t which is true of logical necessity or which he has overriding reason to make true, which is logically possible that he entertains then.¹⁵

The crucial point is that such logical possibility takes into account God’s perfect freedom. Thus person P lacks some knowledge pertaining to times after t, which enables P to retain perfect freedom. Again, however, another route might have been taken, namely perfect freedom could have been sacrificed:

Although there could be a being who was omniscient in a stronger sense—for example, one who knew at t all the actions which he would do subsequently (described in a way which it is logically possible that he entertain at t)—such a being could not have the other divine property of perfect freedom.¹⁶

Is there any response available to Swinburne? He might claim that the following passage argues that that a perfectly free person is much simpler than a less than perfectly free person (and therefore that freedom should be stressed over omnipotence or omniscience). Consider:

A person could be omnipotent in the sense that, whatever (logically possible) action he formed the intention to do, he would succeed in doing, and also omniscient so that he knew what were all the (logically possible) actions available to an omnipotent being in his situation, and yet be predetermined to form certain intentions. His intentions might be determined by factors outside his control, or at any rate, as are those of humans, greatly influenced by them. But, if a person is predetermined (or has an inbuilt probabilistic tendency) to act in a particular way, this means that a tendency to act in a particular way is built into him; he does not choose how to act solely on the basis of the goodness of the possible actions he could do. A person with an inbuilt detailed specification of how to act is a much more complex person than a perfectly free one.¹⁷

Swinburne, in the first sentence, assumes that a being could be less than perfectly free. He then indicates that this is very complex being. The main point is that perfect freedom is much simpler than less than perfect freedom. If true, this might be a reason to stress perfect freedom at the expense of omnipotence and omniscience, but *only if*

omnipotence was not much simpler than limited power and omniscience was not much simpler than limited knowledge. Is this the case? That is, is perfect freedom much simpler than the alternative in a manner that does not hold for omnipotence and omniscience? I don't see why this situation would hold. Nor does Swinburne argue the case that it is so. Put another way, it is simple enough to reword Swinburne's quote to make, e.g., omniscience be the property that is far simpler than its alternative. Consider:

A person could be omnipotent in the sense that, whatever (logically possible) action he formed the intention to do, he would succeed in doing, and also perfectly free so that he could perform all (logically possible) actions, and yet be predetermined to know certain things and not others. His knowledge might be determined by factors outside his control, or at any rate, as are those of humans, greatly influenced by them. But, if a person is predetermined (or has an inbuilt probabilistic tendency) to know particular things, this means that a tendency to know in a particular way is built into him; he does not simply know everything logically possible. A person with an inbuilt detailed specification of what to know is a much more complex person than a perfectly knowledgeable one.¹⁸

I have simply swapped the roles of perfect freedom and omniscience. I see no reason to recommend one argument over another; neither does Swinburne present such a reason. Having considered Swinburne's complex view of God's properties presented in *The Coherence of Theism*, let us consider in more depth a tension that exists between this

book and *The Existence of God*. In *The Coherence of Theism* Richard Swinburne writes, ‘it is definitely logically impossible that there be an *omniscient* person who is himself *perfectly free*’.¹⁹ In *The Existence of God* Swinburne writes, ‘I take the proposition “God exists”... to be logically equivalent to “there exists necessarily a person without a body (i.e. a spirit) who necessarily is eternal, *perfectly free*, omnipotent, *omniscient*...’[my emphases].²⁰ Prima facie the two passages imply that God cannot exist; whereas Swinburne argues that God most likely exists. The key to reconciling the tension between the two passages is to note that ‘omniscient’ and ‘omnipotent’ are being used in two different ways.

In order to distinguish these two meanings let me introduce some terminology. Let us understand by ‘maximal’ that the modified word is as strong as possible while remaining coherent. Let us understand by ‘restricted’ that the modified word is used in a weaker sense than its maximal sense. When Swinburne writes that God cannot be omniscient and perfectly free in *The Coherence of Theism*,²¹ Swinburne is working with a maximal omniscience; when Swinburne writes that God is omniscient and perfectly free in *The Existence of God*,²² Swinburne is working with a restricted omniscience. The same holds for ‘omnipotence’. As Swinburne writes in *The Coherence of Theism*:

The argument of Part II has been that it is coherent to suppose that there exists eternally an omnipresent spirit, perfectly free, the creator of the universe, omnipotent, omniscient, perfectly good, and a source of moral obligation – so long as ‘omnipotent’ and ‘omniscient’ are understood in somewhat restricted senses.²³

The crucial point is that God is not maximally omniscient or omnipotent, but rather is restrictedly omniscient and omnipotent. God is perfectly free, and due to this, cannot be maximally omniscient or omnipotent. These complex relationships between the properties are a main topic of *The Coherence of Theism*. Note that for Swinburne the properties freedom, knowledge, and power are crucial because all other properties of God (Swinburne claims) follow from these three properties.²⁴ I now discuss Swinburne's argument to the simplicity of God via the infinite; that God is infinite, or maximal, on these three properties is essential to his argument.

Recall Bayes's Theorem is as follows:

$$P(h|e\&k) = P(e|h\&k) P(h|k) / P(e|k)$$

$P(h|e\&k)$ varies directly with $P(h|k)$. This intrinsic probability, $P(h|k)$, is higher the simpler God is. Swinburne argues that $P(h|k)$ is relatively high, thereby raising $P(h|e\&k)$, by arguing that God is very simple. Why, according to Swinburne, is God simple? Swinburne claims that the infinite is simple, and that God is infinite on the properties freedom, knowledge, and power. I call this argument 'Swinburne's argument to the simplicity of God via the infinite'. As Swinburne writes, 'the supposition that there is a God is an extremely simple supposition; the postulation of a God of infinite freedom, knowledge, and power is the postulation of the simplest kind of person that there could be.... The divine properties fit together, and they are properties of infinite degree.'²⁵

Swinburne's argument to the simplicity of God via the infinite requires that God be infinite on freedom, knowledge, and power. To be infinite on these properties is the same as God's being maximal on these properties. As is clear from Swinburne's writing and as Quentin Smith noted, '...“infinite” [can] mean the maximum degree of a degreed property. This is the sense in which God is infinite....'²⁶ (I henceforth use 'infinite' and 'maximal' interchangeably, and also 'perfect' with 'freedom'.) But we have seen that two of the three properties, knowledge and power, are not possessed by God to an infinite degree. God is merely restrictedly omniscient and omnipotent. Thus Swinburne's argument to the simplicity of God via the infinite fails. Then $P(h|k)$ is not relatively high, and so $P(h|e \& k)$ is far lower than Swinburne claims. That is, Swinburne's argument in *The Existence of God* fails to show that God likely exists.

Another way to put (briefly summarize) my argument: Swinburne claims that God is omnipotent and omniscient in *The Existence of God*. As *The Coherence of Theism* makes clear, these properties must be *restricted* omniscience and omnipotence, but for Swinburne's argument to the simplicity of God via the infinite to succeed, the properties must be *maximal* omniscience and omnipotence. Thus Swinburne's argument to the simplicity of God via the infinite fails, which undermines his overall argument.

Let me now discuss two potential responses that I see available to Swinburne. The first response maintains that God is restrictedly omniscient and omnipotent, and begins from the claim that God is maximally free, and that God then has as much knowledge and power as is consistent with maximal freedom. But if this is the move Swinburne wishes to make, I do not see how he can argue from the simplicity of the infinite to a relatively high value for $P(h|k)$. For God would not be infinite on knowledge and power. God

is considered maximal and thus simple, so too would Alexander's power be considered maximal and thus simple.²⁸ The point is that any argument claiming that relatively maximal power is simple makes all levels of power simple (for any level of power is maximal relative to some constraint or other), and thus all levels of power would be equally simple. Such an argument could not show that God is simple compared to, e.g., Alexander. But this is precisely the conclusion that Swinburne needs (that is, Swinburne needs to show that God is simpler than any other being by virtue of God's level of power). And so an argument that relatively maximal power is simple cannot succeed and thus is of no help to Swinburne. Note also that the question arises: Why is priority given to freedom? That is, why is God maximally free (and then given as much knowledge and power as is consistent) as opposed to say, being maximally powerful (and then given as much freedom and knowledge as is consistent)? The concern is that saying that a person is infinite on freedom, knowledge, and power (as Swinburne does repeatedly in *The Existence of God*) does not specify a unique being; the order of priority of properties must be specified. I return to this issue of the priority of properties below, following the second potential response.

The second potential response is to argue that God is simple in virtue of possessing one simple property. In *The Christian God* Swinburne argues that God possesses 'pure, limitless intentional power' and that this property is simple.²⁹ This response runs into two main problems. First, Swinburne does not argue to the simplicity of God via pure limitless intentional power in *The Existence of God*; rather he argues from freedom, knowledge, and power, which he claims God possesses to an infinite degree. Thus if Swinburne wishes to argue to the simplicity of God from pure, limitless

intentional power, then this argument should be made explicit in *The Existence of God* (even if only by way of footnote). Second and more importantly, though Swinburne suggests that this property of pure, limitless intentional power is simple, it is not clear that anything is gained in simplicity relative to the discussion of God in *The Coherence of Theism*, where the divine properties are complex and had to be ‘knocked into shape’.³⁰ For Swinburne’s discussion of pure, limitless intentional power in *The Christian God* makes frequent reference to *The Coherence of Theism*. Additionally, ‘limitless’ is a misnomer in the following sense. Because God’s power is ‘pure’, then God is perfectly free; yet God’s power is not limitless, but rather is limited by God’s perfect freedom (as discussed in *The Coherence of Theism* and above). Thus God’s perfect freedom still places complex limitations on God’s power (and knowledge). Put another way, when fully described, pure, limitless, intentional power does not appear to be a simple property.

Remaining on the topic of the second potential response, Swinburne has also argued that God is almighty, and that this property implies the others and is simple. In his article ‘Could There Be More than One God’ Swinburne discusses *almightiness*, which includes the predicates freedom, knowledge, and power. He writes, ‘If I am right in supposing that the predicates do thus fit together, that there is a God becomes a very simple claim and for that reason more likely to be true.’³¹ If this is the response Swinburne wishes to give, namely relying on the simplicity of almightiness, more work needs to be done explaining this property of almightiness and its simplicity. As with pure, limitless intentional power, if this is how Swinburne wishes to argue to the simplicity of God then it should be made explicit in *The Existence of God*, and it also must be explained why almightiness is a simple property that avoids the complexities of *The*

Coherence of Theism. That Swinburne once argued to the simplicity of God from *almightiness*, then from *pure, limitless, intentional power*, and finally from the properties *knowledge, power and freedom being possessed to an infinite degree* at least suggests that he may not be satisfied with the first two methods of argument; these two methods have been the subject of the second potential response.

Let us now reconsider the issue of the priority of the properties freedom, knowledge, and power in light of *The Christian God*. Swinburne is clear that he gives priority to freedom and briefly addresses this problem of priority by suggesting that giving priority to freedom yields the simplest being;³² however, this treatment is not complete, satisfactory, or persuasive. Furthermore, a close reading of *The Christian God* raises the concern that there might be a simpler being than God. Consider an ordered triple representing God's level of freedom, knowledge, and power. Let 'R' stand for 'restricted' and ' ∞ ' stand for 'infinite' or 'maximal'. Then *The Coherence of Theism* makes clear that God is (∞, R, R) ; Swinburne's argument to the simplicity of God via the infinite requires that God be (∞, ∞, ∞) .³³ In an interesting passage in *The Christian God* Swinburne considers the issue of the priority of properties and writes:

The alternative to understanding divine omniscience in a restricted way so as to maintain God's perfect freedom over the future, is to understand his perfect freedom over the future in a restricted way so as to maintain God's omniscience. But if God's omniscience is to include foreknowledge of his future actions, there would seem to be no reason to confine that foreknowledge merely to foreknowledge of some such actions; and if it

included all God's future actions, he would have no freedom left.... To leave God with any freedom at all, God's omniscience must be understood in a restricted way.³⁴

Recall the ordered triples representing freedom, knowledge, and power. In the quote above, if God is to have any freedom, then God is (∞, R, R) . If the being, let us call him 'god2', has restricted freedom, then he has no freedom, and so is $(0, \infty, \infty)$. But in *The Existence of God* Swinburne wrote that both the infinite and 0 are simple.³⁵ Thus god2 of no freedom and infinite knowledge and power, or $(0, \infty, \infty)$, would be simpler than God with perfect freedom, but restricted knowledge and power, or (∞, R, R) . It would then seem that on Swinburne's own view of simplicity, he should argue that god2 is most likely to exist. Note too that if it is impossible to derive god2's perfect goodness, then this would seem to be a further advantage as the problem of evil would no longer be so acute a problem. In the language of Bayes's Theorem, $P(e|h_{g2} \& k)$ and $P(h_{g2}|k)$ are higher than $P(e|h \& k)$ and $P(h|k)$, respectively, when h_{g2} is the hypothesis that god2 exists and h is the hypothesis that God exists.³⁶ Then by Bayes's Theorem the evidence confirms god2's existence more than God's existence, which implies that God cannot exist with a probability greater than 50%. That is, on Swinburne's own view of simplicity it seems that priority should be given to knowledge (yielding god2) and not to freedom (yielding God); some argument to the contrary is needed if Swinburne's argument is to successfully show that God most likely exists.

Let us review the main argument of this section. God is omniscient and omnipotent in a restricted sense (a less than maximal sense); however, Swinburne's

argument in *The Existence of God* relies on God's being maximally omniscient and omnipotent. Why? Because Swinburne argues that $P(h|k)$ is relatively high by arguing that God is simple in virtue of being infinite on the properties knowledge, power, and freedom, where infinite means maximal. Thus Swinburne's argument to the simplicity of God via the infinite in *The Existence of God* fails. The failure of this argument greatly lowers the value of $P(h|k)$, which in turn lowers $P(h|e \& k)$. That is, I have suggested that Swinburne's argument to the simplicity of God via the infinite does not succeed, which means that Swinburne's argument that God likely exists does not succeed.

In this chapter I have again critiqued Swinburne's use of simplicity. In particular, one of the ways Swinburne argues that God is simple is to claim that God can be described on only three properties. However, I suggested that these arguments of Swinburne's (to the effect that God's other properties logically follow from three properties) do not succeed. Thus God is more complex than Swinburne argues, which lowers $P(h|k)$ and therefore lowers $P(h|e \& k)$. Furthermore, even if the infinite were simple (which I argued against in the last chapter), God is not infinite on two of the three properties, which again indicates that Swinburne's use of simplicity to argue for the likelihood of God's existence does not succeed.

In the next and final chapter, we turn to numerical considerations. That is, Swinburne argues that God exists with a probability of over 50%, where Bayes's Theorem has many different probabilities. A main goal of the next chapter is to tie together previous considerations and consider how Swinburne's argument is meant to arrive at the conclusion that God exists with a probability of over 50%.

Notes

¹ Swinburne *The Existence of God*, 1.

² Swinburne *The Existence of God*, 7.

³ According to Swinburne, we judge the simplicity of an object or person based on the simplest possible description. Thus, though there may be more complex descriptions of God, the simplest possible description determines simplicity, and therefore is of crucial importance.

⁴ Swinburne *The Existence of God*, 99.

⁵ Swinburne, *The Coherence of Theism*, 100.

⁶ Swinburne *The Existence of God*, 99.

⁷ Swinburne *The Existence of God*, 335.

⁸ For example, Swinburne writes, "The view in question is the view that moral judgments to the effect that this action is morally good and that one is morally bad are propositions that are true or false. The truth of this view is, of course, a contentious philosophical issue...." Swinburne *The Existence of God*, 99-100. Draper (2001, p. 458) also notes the tendency of Swinburne to rely on contentious claims to support many of his arguments. For example in a different context, Draper writes, "At the heart of Swinburne's theodicy is, not surprisingly, an appeal to libertarian free will Swinburne makes a number of controversial metaphysical claims about libertarian free will...."

⁹ Swinburne *The Existence of God*, 5.

¹⁰ Swinburne *The Existence of God*, 97.

¹¹ Swinburne, *The Coherence of Theism*, 165.

¹² Swinburne, *The Coherence of Theism*, 165.

¹³ Swinburne *The Existence of God*, 7.

¹⁴ Swinburne, *The Coherence of Theism*, 177.

¹⁵ Swinburne, *The Coherence of Theism*, 181.

¹⁶ Swinburne, *The Coherence of Theism*, 181.

¹⁷ Swinburne *The Existence of God*, 355.

¹⁸ Swinburne *The Existence of God*, 355, reworded.

¹⁹ Richard Swinburne. *The Coherence of Theism*. (Oxford: Oxford University Press, 1993), 177. Also note that an agent is *perfectly free* if ‘nothing in any way causally influences [that agent’s] choices’. Richard Swinburne. *The Existence of God*, 2nd ed. (Oxford: Oxford University Press, 2004), 94.

²⁰ *The Existence of God*, 7.

²¹ *The Coherence of Theism*, 177.

²² *The Existence of God*, 7.

²³ *The Coherence of Theism*, 243.

²⁴ *The Existence of God*, 99.

²⁵ *The Existence of God*, 151. Before going on to argue that Swinburne’s argument to the simplicity of God via the infinite is undermined by God’s being merely restricted in omnipotence and omniscience, note that I am granting Swinburne his claim that the infinite is simple, though his argument that the infinite is simple seems unsuccessful. In both *The Existence of God* and ‘Prior Probabilities in The Argument From Fine-Tuning’ he writes, ‘For we can understand, for example, the notion of an infinite velocity ... without needing to know what the googleplex is....’ *The Existence of God*, 55; and Richard Swinburne. ‘Prior Probabilities in The Argument From Fine-Tuning’, *Faith and Philosophy*, 22 (2005), 644-45. But we can also understand the googleplex without understanding the infinite, thus neither the googleplex nor the infinite would be simpler than the other on Swinburne’s own view of simplicity. The relevant account of simplicity is given in *The Existence of God*, 54-5. It is then not clear how he hopes to argue that the infinite is simpler than finite values, though, to reiterate, I grant him this claim. These considerations were the theme of chapter 4 of this thesis.

²⁶ Quentin Smith. ‘Review Article: Swinburne’s explanation of the universe’, *Religious Studies*, 34 (1998), 93.

²⁷ *The Existence of God*, 97.

²⁸ If Swinburne wishes to argue that relatively maximal power is simple only when *logically* constrained as opposed to *physically* constrained, then this argument would need to be given. One problem with proceeding in this direction is that it seems easy enough to come up with *logical* constraints that leave people at any level of power, though I have not done so in the case of Alexander to ease the exposition.

²⁹ Richard Swinburne. *The Christian God*. (Oxford: Clarendon Press, 1994), 150-58.

³⁰ *The Coherence of Theism*, 165.

³¹ Richard Swinburne. 'Could There Be More Than One God', *Faith and Philosophy*, 5 (1988), 225. An interesting footnote from the same paper reads, 'This [restricted] understanding of omniscience is forced upon us by our understanding of the other predicates. But given the later argument that all the divine properties follow from one natural property of almightiness, it remains the case that the arguments in *The Existence of God* are arguments to "the simplest kind of person there could be".' 'Could There Be More Than One God', 238. Swinburne seems to recognize, in this quote, that God's having restricted omniscience presents a problem for the simplicity of God.

³² *The Existence of God*, 98. Also relevant is *The Christian God*, 134 and 150-158.

³³ Of course, such a being is logically impossible; however, this does not change the fact that a being is simple on a property only when that property is possessed to an infinite degree.

³⁴ *The Christian God*, 134.

³⁵ *The Existence of God*, 97.

³⁶ Note that I am only comparing the simplicity of personal explanations; it may be the case that personal explanation has an advantage of scientific explanation, as Swinburne suggests in *Is There a God?* (Oxford: Oxford University Press, 1996), 38-47.

Chapter 6: Simplicity, Numerical Considerations, and Conclusion

1. Introduction

Let us take stock. In the first chapter, I presented a broad overview of Swinburne's *The Existence of God*, wherein Swinburne presents an inductive, cumulative argument to God's existence. The second chapter considered the evidence in more detail. In the third and fourth chapters simplicity was considered, and I argued that Swinburne does not successfully argue that God is simple (due mainly to the fact that 1 and the infinite are not simpler than other values). The fifth chapter again centered on simplicity, now focusing on the tension between the simple view of God presented in *The Existence of God* and the complex view of God presented in *The Coherence of Theism*. In particular, God is not infinite of two of three crucial properties. This chapter begins on the theme of simplicity, and then turns to numerical considerations. Recall that Swinburne's ultimate conclusion is that God exists with a probability greater than 50%. Swinburne's argument in *The Existence of God* relies on Bayes's Theorem:

$$P(h|e\&k) = P(e|h\&k) P(h|k) / P(e|k)$$

And so ultimately we must consider these probabilities and their values. Much of this chapter, as was true of previous chapters, focuses on an analysis of $P(h|k)$. $P(h|k)$ is called "the intrinsic probability of theism," and the simpler h is, the greater $P(h|k)$ is. Then based on Bayes's Theorem, the greater $P(h|k)$ is, the greater $P(h|e\&k)$ is, as

$P(h|e \& k)$ varies directly with $P(h|k)$, i.e., if $P(h|k)$ doubles, $P(h|e \& k)$ doubles; likewise if $P(h|k)$ halves, $P(h|e \& k)$ halves. Thus the simpler the hypothesis “God exists,” the greater the likelihood that Swinburne will be able to successfully argue that $P(h|e \& k)$ is greater than 50%. And Swinburne repeatedly claims that “God exists” is a simple hypothesis in *The Existence of God*. In a section entitled “The Simplicity of Theism” Swinburne writes, “Such is the hypothesis of theism. How simple a hypothesis is it? I propose to argue that it is a very simple hypothesis indeed.”¹ Later, “So then theism has very considerable simplicity.”² And again, “The intrinsic probability of theism is, relative to other hypotheses about what there is, very high, because of the great simplicity of theism.”³ There are many other instances where Swinburne claims that “God exists” is simple; such repetition is rhetorically effective, though logically without import. In this chapter I argue, using specific numerical examples, that Swinburne has vastly overstated the simplicity of God’s existence. I also present some probabilistic problems that Swinburne faces. Ultimately I conclude that Swinburne, having failed to support many of his claims and arguments involving simplicity and having failed to provide enough specific numerical values, has not successfully shown that God likely exists.

Before doing so, recall that in Chapter 5, I noted the tension that exists between *The Coherence of Theism* and *The Existence of God*. Briefly summarized, *The Coherence of Theism* presents God as a complex entity, where certain properties generally attributed to God seem to contradict each other, e.g., omnipotence and omniscience. Such properties had to be “knocked into shape.” By contrast, in *The Existence of God*, God is presented as being a very simple being. In Chapter 5 I mainly noted this tension, now we are in a position to directly and mathematically address the question: Is the existence of

God simple? To reiterate, I will argue that the existence of God is not nearly so simple as Swinburne claims in *The Existence of God*.

2. Swinburne's Overstatement of the Simplicity of God's Existence

Swinburne makes a specific claim regarding the simplicity of God's existence which I argue is false:

It remains to me, as to so many who have thought about the matter, a source of extreme puzzlement that there should exist anything at all. And maybe for that reason $P(h|k)$ is low. But there does exist something. And, if there is to exist something, it seems impossible to conceive of anything simpler (and therefore *a priori* more probable) than the existence of God.⁴

This claim, that the existence of God is the simplest (conceivable) hypothesis and therefore the most probable, is a remarkably strong claim. The claim, on the face of it, is equivalent to claiming that $P(h|k)$ is greatest when h is "God exists." If we read Swinburne as only referring to hypotheses which could be possible explanations of everything, then the claim is not quite so strong. On either reading, I demonstrate that there is a simpler hypothesis, thus showing the claim false.

In order to arrive at this simpler hypothesis, let us recall Swinburne's view of simplicity. In what follows, I grant Swinburne his view of simplicity, though I attacked it in chapter 3 of this thesis. That is, just as chapter 5 argued that even if the infinite is

simple, God is not simple, in this chapter I argue that even if small and round numbers were simple (argued against in chapter 3), God is not simple.

Recall that Swinburne's position is that small, round numbers (nonnegative integers) are associated with greater simplicity. As Swinburne writes in *The Existence of God*, "The simplicity of a theory, in my view, is a matter of postulating few (logically independent) entities, *few properties of entities*,... [emphasis mine]."⁵ Swinburne reiterates this view of simplicity in *Epistemic Justification*:

The first facet of simplicity is just a matter of number of things postulated ... Secondly, number of kinds of things. A hypothesis that postulates three kinds of entities (or properties of entities) is (other things being equal) simpler than one that postulates six, and so on. A scientific theory that postulates three kinds of quark is simpler than one that postulates six kinds of quark; and one that postulates that quarks have just certain properties such as spin is simpler than one that postulates that they have these properties and also colour-charge as well.⁶

The first facet of simplicity means that one person is simpler than two, which in turn is simpler than three, etc. God is one person, and so is as simple as possible when it comes to number of entities. (Though in the article, "Could There Be More Than One God?", Swinburne does present a bizarre argument in which he concludes, "that necessarily if there is at least one God, then there are three and only three Gods."⁷ Kelly Clark comments, "Swinburne's arguments move us in the direction of tritheism rather

than orthodox trinitarianism.”⁸) It is on the second facet of simplicity, specifically the number of properties postulated, that we shall focus. Recall the quark; the quark that has spin is simpler than the quark that has spin and colour-charge, as on Swinburne’s view of simplicity, postulating fewer properties renders an entity simpler. Let us turn then to God. Granting Swinburne several metaphysical and logical claims makes “God exists” equivalent to “an omnipotent, omniscient, perfectly free person exists.” (Swinburne claims that several other properties are logical consequences of these three properties, e.g., God’s perfect goodness.⁹ I have critiqued Swinburne’s position that God can be described using only these three properties. Such considerations only strengthen my argument in this section. For the present, let us even grant Swinburne his view that God can be described with three properties.) Then God is a person who has three properties postulated. Postulating fewer properties increases simplicity. Thus “a person exists” is simpler than “God exists” because “a person exists” has zero properties of the person postulated, whereas “God exists” has three properties postulated. “A person exists” is simpler (and therefore has a greater intrinsic probability) than “God exists” in the same way that “a quark with spin exists” is simpler (and therefore has a greater intrinsic probability) than “a quark with spin and colour-charge exists.”¹⁰

Consider the following hypotheses:

h1: a person exists¹¹

h2: a disembodied person exists

h: God exists (an omnipotent, omniscient, perfectly free person exists)

On Swinburne's own view of simplicity, h_1 is simpler than h because h_1 postulates fewer properties than h , and therefore h_1 has greater intrinsic probability than h . Swinburne's claim, that it is impossible to conceive of anything *a priori* more probable than h (i.e., God's existence), is false. The falsity of Swinburne's claim follows directly from his own view of simplicity. In *The Coherence of Theism*, Swinburne writes, "That God is a person, yet one without a body, seems the most elementary claim of theism. It is by being told this...that young children are introduced to the concept of God."¹² That is, in *The Coherence of Theism*, Swinburne himself presents another hypothesis which is simpler than h , namely h_2 . In this case the person has one property, disembodiedness.

The specific problem in relation to Bayes's Theorem is the following. $P(h|e \& k)$ varies directly with $P(h|k)$, that is, if $P(h|k)$ halves, so does $P(h|e \& k)$. And as h , or "God exists," is not nearly so simple as Swinburne supposes, the value of $P(h|k)$ is much lower than Swinburne supposes. Therefore the value of $P(h|e \& k)$ is much lower than Swinburne supposes, and insofar as it becomes likely that $P(h|e \& k)$ is less than 50%, Swinburne's argument may fail.

Before going into more detail with numerical considerations, let us consider possible replies to my argument that Swinburne's claim is false. The first reply is that my argument is obvious, and thus Swinburne must have some type of reply implied. My argument may be obvious. It can be arrived at either by considering Swinburne's view of simplicity, as I have done, or by considering the fact that if h implies h_1 , then h_1 is more probable than h . But simply pointing out that my point is obviousness is no rebuttal. It may raise the possibility that Swinburne has some reply implicit. If so, I do not know what it is.

Moving on to a second possible reply (attempt to salvage Swinburne's claim that God is simplest), Swinburne has repeatedly claimed that personal explanation works by considering the powers, intentions, and beliefs of a person. Then perhaps we must describe the powers, intentions, and beliefs of people. If this move is supposed to reply to my argument, I do not see how it does so. This move would amount to arguing that Swinburne's claim should be read as continuing, "And, if there is to exist something, it seems impossible to conceive of anything simpler (and therefore *a priori* more probable) than the existence of God ... but if we are to consider people, they must be described on the properties power, intentions, and freedom." If this is how we are to read this sentence, again this must be made explicit.

Let me indicate why I believe that Swinburne truly believes (falsely) that God is the simplest being imaginable. One of the challenges Swinburne faces is responding to the worry that there may be many or finitely powerful god or gods responsible for our universe. Swinburne's main tactic for rebutting this suggestion is an appeal to simplicity, that is, he argues that God is most simple, and that less simple possibilities have a much lower intrinsic probability than the simplest option. Thus according to Swinburne God has an intrinsic probability which dwarfs the intrinsic probability of there being, e.g., two gods. To make this point, Swinburne writes:

While the simplest theory (among theories of equal scope and fit with background evidence) has the greatest intrinsic probability, how probable is it, relative to slightly less simple theories? The practice of scientists, historians, etc. shows that they judge a very simple theory to be much

more probable than less simple theories. If you can explain many clues by the hypothesis that one agent caused them, that is far more probable than a theory with the same explanatory power to explain the clues that postulates that two agents caused the clues. And a theory that postulates an inverse square law of attraction is intrinsically far more probable than one that postulates a law of attraction varying with the 2.01th power of distance apart. And a theory that relates only a few postulated variables and yet is able to explain as much as a theory that relates many variables is far preferable. However, when we come to not quite so simple theories (which we may need to do when very simple theories prove to have low explanatory power), the intrinsic probability of the simplest remaining theory is not much greater than that of the next less simple theory.¹³

Swinburne writes this to rule out many or finitely powerful god or gods as a likely explanation of our universe. Yet the sentiment expressed actually works against Swinburne's own position. Recall that "a person exists" is simpler than "God exists." Swinburne intends, in his quote above, for "a very simple theory" to refer to "God exists." But there is a simpler theory, namely "a person exists," which then is the very simple theory. God then becomes the "not quite so simple theory," and these are precisely the theories that Swinburne indicates have very little intrinsic probability. This is to say that the falsity of Swinburne's claim that God is simplest has very bad consequences for his overall argument given his additional claim that very simple theories are far more probable than even slightly less simple theories.

Having considered potential replies, let us return to Swinburne's claim and simplicity. Swinburne argues that "God exists" is preferable to (a more likely explanation than) any scientific hypothesis. "God exists" is in competition with scientific hypotheses, and Swinburne is concerned to rule these out. In fact, what does follow Swinburne's claim is an explicit comparison with a scientific hypothesis:

And, if there is to exist something, it seems impossible to conceive of anything simpler (and therefore *a priori* more probable) than the existence of God. The simplest kind of scientific explanation of our data would be...that everything began from an unextended physical point.

Swinburne goes on to "allow for the sake of argument that the unextended physical point hypothesis is as simple as theism."¹⁴ Consider the following table of hypotheses, x , and the corresponding intrinsic probabilities, $P(x|k)$. Let us simply assume that the first probability is correct. I have then filled in the rest of the table based on Swinburne's view that more properties renders a hypothesis less probable and on my intuitive sense of simplicity. However, the last entry of the table is different in that it represents Swinburne's claim that a physical point has the same intrinsic probability as God. The specific numbers are not important, but rather the relations between the numbers.

x	$P(x k)$
A person exists (h_1)	0.01 (assumed correct)

A disembodied person exists (h2)	0.001 (1 property)
God exists ¹⁵ (h)	0.00001 (3 properties)
A physical point exists (my estimate)	0.03 (a point seems simpler than a person)
A physical point exists (Swinburne's claim)	≤ 0.00001

I have assumed that postulating each property of a person (to an infinite degree) decreases intrinsic probability by one-tenth (I think that this value of one-tenth is very conservative, that is, that the true value would be far closer to 0—a point I discuss below). Thus a person is 1,000 times more likely to exist than God (in terms of intrinsic probability). Recall that Swinburne's claim was that "God exists" would have the greatest intrinsic probability. The table shows that not only is this false, but that God has the least intrinsic probability. Note that I have estimated the probability of "God exists" at far less than that of an unextended point, that is, God's existence is 0.00001 whereas the point's is 0.03. (It is important to remember that these are intrinsic probabilities; the posterior probability of God's existence, $P(h|e \& k)$, could still be quite high due to explanatory power, $P(e|h \& k)$, or due to the intrinsic probability of the evidence, $P(e|k)$.) Yet Swinburne claimed that the point would be, at best, as probable as God. I have written this in the table by indicating Swinburne's claim that the point has probability less than or equal to God's. If we follow Swinburne in making this assumption that the point is as intrinsically probable as God (0.00001), then a person's existence (0.01) is at least 1,000 times more probable than a point's (0.00001). Recall that the major determinant of these probabilities is simplicity. Thus, if God is as intrinsically probable as a point, as

Swinburne claims, then a person must be far simpler than a point in order to be 1,000 times more intrinsically probable than the point; this seems unlikely. I believe that such considerations show that Swinburne has overstated the simplicity of God's existence. If he has not, some argument is needed to show that a person is far simpler than a point. (One means of arguing for this would be to claim that a point must have some finite extension, and as such is not very probable, for Swinburne believes that anything of some particular finite value is remarkably improbable as compared with the infinite and zero. This is a point I return to below, when I analyze Swinburne's claim that zero and the infinite are far simpler than are particular finite values. However, recall that Swinburne is considering an unextended point, and so I do not think that this move is available to Swinburne.)

To summarize, even granting Swinburne his claims which were argued against in previous chapters, Swinburne has overstated the simplicity of God's existence. Such an overstatement threatens his ultimate conclusion that $P(h|e \& k)$ is greater than 50%, as $P(h|k)$ may be far lower than Swinburne believes. Swinburne's claim also has the seemingly false implication that a person is simpler than a point. My numerical considerations showed that Swinburne and I differ by a wide margin on certain intrinsic probabilities. In the next section, I suggest that such wide disagreement is a serious problem for Swinburne's argument.

3. Precision

Given that God does not have the intrinsic probability that Swinburne claimed, how might Swinburne seek to repair his argument? Swinburne might move some of the work being done away from simplicity and intrinsic probability, $P(h|k)$, to explanatory power, $P(e|h \& k)$. However, the lack of precision in Swinburne's argument is a cause for some concern. Swinburne's argument is one in which it is difficult to have precision. Swinburne repeatedly mentions this feature of his argument. "I stress again that it is impossible to give anything like exact numerical values to the probabilities involved in these calculations. I have attempted to bring out the force of my arguments by giving some arbitrary values that do, I hope, capture within the roughest of ranges the kinds of probabilities involved."¹⁶ Yet, if the argument is merely off by a factor of 2 in the wrong direction, then the argument fails, e.g., being off by a factor of 2 causes the probability of God's existence to shift from 98% to 49%. And in this paper I have suggested that Swinburne may be off by, on a conservative estimate, a factor of 3,000 (the discrepancy in our estimates of the intrinsic probability of a physical point's existence; put another way, the difference between God's intrinsic probability and the hypothesis in my table with the greatest intrinsic probability). Swinburne faces the following problem. His argument would seem to require precision in order to be persuasive, but by his own admission precision cannot be attained.

To dramatize the point, imagine that you need some drug to improve your life, and the doctor tells you that there is a correct dosage. Furthermore, the dosage must be correct to within a factor of 2, or great pain will result. The doctor then says, "I stress again that it is impossible to give anything like exact numerical values to the dosage calculation. I have come up with a dosage, and I have attempted to bring out the force of

my arguments for this dosage by giving some arbitrary values that do, I hope, capture within the roughest of ranges the kinds of numbers involved.”¹⁷ I suspect that you would be wary of taking this drug, having a justifiable concern that the doctor is very unlikely to arrive at the effective dosage due to his complete and utter lack of precision. Similarly, I believe that Swinburne’s complete and utter lack of precision leaves any competent judge of his argument with almost no confidence in his conclusion.

In fact, a subtle mathematical point is in order. The situation is even worse than Swinburne’s needing to be off merely by a factor of 2. That calculation is correct only when making the strong assumption that his argument shows that God exists with a probability very close to 1, and that he can only err in one direction. If we allow the possibility that Swinburne might err in both directions, as seems true, then he can only be off by, at most, a factor of 1.414, and then only if his argument shows God to exist with a probability of 0.707. That is, multiplying 0.707 times 1.414 yields 1, the upper range for success of Swinburne’s argument, and dividing 0.707 by 1.414 yields 0.5, the lower range of success. The number 0.707 is arrived at by taking the geometric mean of 1 and 0.5, that is, the two numbers are multiplied, and then the square root is taken. All of this is to say that Swinburne’s argument requires immense precision (precision to within a factor of 1.414, or even less); I have suggested that he may have erred by a factor of 3,000 on a conservative estimate.

To conclude this section, Swinburne’s argument has a lack of precision which leaves me with little confidence in his conclusions. On page 1 of the book Swinburne wrote, “The book is written in the deep conviction of the possibility of reaching a fairly well-justified conclusion by rational argument on this issue [the existence of God],

perhaps the most important of all deep issues that stir the human mind.”¹⁸ The lack of precision in Swinburne’s argument raises the worry that his argument is not persuasive. Swinburne would make a good start towards a convincing argument by focusing on the truth of his claims and the precision of his argument. In the next section, I present the main mathematical problems that I encountered with Swinburne’s argument. Swinburne could respond to most of my concerns regarding precision and mathematics if he simply presented precise values which could make his argument succeed.

4. Errors in Swinburne’s Probabilistic Reasoning

Oddly enough, the claim that God is very simple may work against Swinburne’s argument. Swinburne repeatedly writes that it is impossible to give precise values to the probabilities involved in Bayes’s Theorem. Yet he does estimate that $P(e|h \& k)$ equals $1/2$. In this section, I demonstrate that this estimate cannot be accurate; $P(e|h \& k)$ must be far less than $1/2$ if Swinburne’s argument is to make sense. I present several other probabilistic arguments that weigh against Swinburne’s argument.

Swinburne’s argument involves many probabilities to which he does not assign exact values. As I am someone who prefers (is persuaded by) concrete examples, after several readings of *The Existence of God*, I tried to assign values to the probabilities used by Swinburne that met the following two conditions: 1) the probabilities satisfied all of the constraints required by Swinburne’s argument, and 2) the probabilities were not obviously false.

After many hours, I was unable to arrive at values for the probabilities that satisfied these two conditions. In this section, I present the main problems I had in attempting to arrive at values for the probabilities that are consistent with his argument. I found myself sympathetic to Swinburne's overall approach,¹⁹ but unable to accept that Swinburne successfully argued that God exists with a probability greater than 50%. Before I turn to Swinburne's argument and the probabilities therein, let me discuss my second condition, namely that the probabilities are not obviously false. This condition is intentionally very weak. Swinburne points out that it is impossible to arrive at precise values for the probabilities. And so it is not values which are obviously correct that I desire. I simply want values that could work, that is, an example of how the argument could succeed.

4.1 $P(e|h \& k)$, $P(h|k)$, and $P(e|k)$

Swinburne does provide a value for $P(e|h \& k)$. In this section I argue that the value Swinburne assigns does not make sense. Before turning to these considerations and Bayes's Theorem, let me introduce the concept of the *complexity quotient*. $P(h|k)$ and $P(e|k)$ are intrinsic probabilities, meaning that their value is determined mainly by simplicity, where a simpler hypothesis has a greater value. h , according to Swinburne, is the simplest hypothesis imaginable (I argued against this claim above-- the following considerations can be seen as a further argument against Swinburne's claim).²⁰ e is far more complex. Thus $P(h|k)$ is greater than $P(e|k)$. I define the complexity quotient to be the value of the quotient of two intrinsic probabilities, so for example, $P(h|k) / P(e|k)$ is a

complexity quotient. It is a number that provides a sense of how much simpler the hypothesis in the numerator is compared with the hypothesis in the denominator. Before returning to a consideration of $P(h|k) / P(e|k)$, let us consider a complexity quotient in a different context.

Consider the intrinsic probability of w = “exactly one wooden block exists.”

There is some intrinsic probability of one wooden block’s existence, $P(w|k)$. Next divide the wooden block hypothesis into four equiprobable, exhaustive, and mutually exclusive cases. Perhaps w_1 = “one small light wooden block exists, and no others,” w_2 = “one large light wooden block exists, and no others,” w_3 = “one small dark wooden block exists, and no others” and w_4 = “one large dark wooden block exists, and no others” (it seems reasonable to suppose that definitions of light, dark, large, and small could be arrived at to yield the desired result). Then:

$P(w_1|k) = P(w_2|k) = P(w_3|k) = P(w_4|k)$, and:

$$P(w|k) = P(w_1|k) + P(w_2|k) + P(w_3|k) + P(w_4|k)$$

Thus we arrive at the complexity quotient: $P(w|k) / P(w_1|k) = 4$, which indicates that the wooden block hypothesis, w , is four times more intrinsically probable than, e.g., the small light wooden block hypothesis w_1 . The point I wish to stress is that a slight increase in detail (or complexity) can render a hypothesis less intrinsically probable *by a factor of four*.

Consider again Bayes's Theorem: $P(h|e \& k) = P(e|h \& k) P(h|k) / P(e|k)$. Swinburne gives $P(e|h \& k)$ the value $1/2$.²¹ Then notice that, as $P(h|e \& k)$ must be less than or equal to 1, so too must the right side of Bayes's Theorem be less than or equal to 1, yielding:

$1 \geq 1/2 * P(h|k) / P(e|k)$, or (multiplying through by 2 and swapping sides):

$$P(h|k) / P(e|k) \leq 2$$

Consider this requirement, $P(h|k) / P(e|k) \leq 2$, and let us ask: Does it make sense? In particular, should the complexity quotient of God as compared with the evidence (the world and its operations) be less than or equal to 2? The major determinant of these intrinsic probabilities is simplicity. h , according to Swinburne, is the simplest hypothesis imaginable. e is of remarkable complexity. I gave an example above involving wooden blocks where $P(w|k) / P(w_1|k) = 4$, and these were two hypotheses of moderate and similar complexity. Swapping a simpler hypothesis into the numerator and a more complex hypothesis into the denominator necessarily increases the value of the complexity quotient. Moving from $P(w|k) / P(w_1|k)$ to $P(h|k) / P(e|k)$ is such a swap,²² and so $P(h|k) / P(e|k) > 4$ (perhaps much greater). Thus Swinburne's requirement that $P(h|k) / P(e|k) \leq 2$ is false, and so too the claim that $P(e|h \& k) = 1/2$. Intuitively, it simply does not make sense that $P(h|k) / P(e|k)$ would be anything less than some staggeringly large number given Swinburne's claims regarding the extreme simplicity of h and the extreme complexity of e , that is, the complexity quotient $P(h|k) / P(e|k)$ should be very, very large. Then $P(e|h \& k)$ must be very small so that $P(h|e \& k)$ will be less than or equal to 1.

Another way to put this point is that Swinburne's main concern is that $P(h|e \& k)$ will be too low; Swinburne wishes to argue that the hypothesis of theism is very likely on the evidence. Thus he argues that the values in the numerator of the right hand side of Bayes's Theorem, $P(e|h \& k)$ and $P(h|k)$, are high (relatively) and the value in the denominator, $P(e|k)$, is low. But the proper conclusion from this line of reasoning is not that $P(h|e \& k)$ takes some high value like 0.8, but rather that $P(h|e \& k)$ takes some absurdly high value like $8 * 10^5$ (which is an absurdly high value because probabilities cannot exceed 1). Swinburne, having taken every opportunity to argue that $P(h|e \& k)$ is high, has overshot the mark.

The simple point that emerges from the algebraic requirement:

$$P(e|h \& k) P(h|k) / P(e|k) \leq 1$$

is that if h is very simple and e is very complex, then e is not very likely on h , that is, $P(e|h \& k)$ must be low. Conversely, if e is likely on h (e.g. $P(e|h \& k) = 1/2$), then h and e are of similar complexity (thus it may actually benefit Swinburne to abandon his claim that God is very simple, especially if he wishes to maintain that $P(e|h \& k) = 1/2$). If Swinburne's argument is to succeed, reasonable values should be chosen for the probabilities.

Let me recast the argument above in a slightly different form. I would not use a wooden block to explain the coming into existence of a small light wooden block, and these hypotheses have a complexity quotient of 4. Nothing would be gained by such an explanation. Why then would we want God to explain the universe *if the complexity*

quotient of God and the universe is 2 or less—which would indicate that the two are of very similar complexity? We would not, nothing would be gained, but the point is that it seems wildly off-base to claim that $P(h|k) / P(e|k) \leq 2$, as Swinburne does.

Finally, there is something strange about the overall structure of Swinburne's argument. Swinburne claims that $P(e|h \& k) = 1/2$ in chapter 6 of *The Existence of God*.²³ He also has claimed that God is the simplest hypothesis by chapter 6, meaning that $P(h|k) > P(e|k)$. From which it follows that $P(h|k) / P(e|k) > 1$. Recall Bayes's Theorem: $P(h|e \& k) = P(e|h \& k) P(h|k) / P(e|k)$. So by halfway through *The Existence of God* Swinburne has established that $P(h|e \& k)$ equals $1/2$ times something greater than 1. Which implies that $P(h|e \& k) > 1/2$, which is Swinburne's ultimate conclusion. It is then unclear why Swinburne feels the need for the rest of the book. It may be that these chapters simply strengthen and tie together the argument. Nevertheless it seems striking both that Swinburne has accomplished so much by midway through the book, and that he neglects to inform the reader that his ultimate conclusion has been attained. I believe that Swinburne may be unaware of the implications of what he has claimed. Specifically, I think him unaware of the fact that his argument has succeeded so early. The point, however, is not to praise Swinburne's argument, but rather to suggest that his claim regarding the simplicity of God's existence and his claim that $P(e|h \& k) = 1/2$ are both widely off the mark.

4.2 $P(e|h \& k)$ and $P(e|\sim h \& k)$

Let us turn to another calculation showing that Swinburne's probabilities are in need of modification. Bayes's Theorem states that $P(h|e \& k) = P(e|h \& k) P(h|k) / P(e|k)$. Chapter 5 of *The Existence of God* considers $P(h|k)$; Chapter 6 considers $P(e|h \& k)$. Oddly, no chapter directly considers $P(e|k)$; rather, to make the argument that $P(h|e \& k) > 50\%$, Swinburne takes a seemingly circuitous route and relies on the claim that " $P(e|\sim h \& k) P(\sim h|k)$ will not exceed $P(e|h \& k) P(h|k)$,"²⁴ that is:

$$P(e|\sim h \& k) P(\sim h|k) \leq P(e|h \& k) P(h|k)$$

Let us take the value for $P(h|k)$ given above, that is, $P(h|k) = 0.00001$. I believe this estimate is, if anything, high, and is certainly in the spirit of Swinburne's, " $P(h|k)$ might be very small (so improbable is it *a priori* that there should exist anything at all)...."²⁵ Then $P(\sim h|k) = 1 - P(h|k) = 0.99999$. Thus we arrive at:

$$P(e|\sim h \& k) * 0.99999 \leq P(e|h \& k) * 0.00001, \text{ and so:}$$

$$P(e|h \& k) / P(e|\sim h \& k) \geq 99,999$$

Let us then ask: Does this inequality make sense? $P(e|h \& k) / P(e|\sim h \& k) \geq 99,999$ indicates that if God does not exist, then the existence of the evidence is at least 99,999 times less probable than if God does exist. This seems wrong. For example, one possibility if God does not exist is that a god exists who has very large, but finite power,

knowledge, and freedom. Why is the evidence so much less likely on $\sim h$, which includes the finite god hypothesis, than on theism?

Swinburne attempts to support the position that $P(e|\sim h \& k)$ is very low relative to $P(e|h \& k)$ by ignoring the possibility of a finite god:

Let e be the existence over time of a complex physical universe ... Either e occurs unexplained, or it is due to the action of a person, the most likely being God. It is now reasonable to ignore the alternative that we have shown to be a priori much less probable, that e was brought about by a person of very large but finite power, very considerable but limited knowledge, etc. Hence we may regard $P(e|\sim h \& k)$ as the probability that there be a physical universe without anything having brought it about.²⁶

Simply put, it is not reasonable to ignore the possibility of a finitely powerful god when considering $P(e|\sim h \& k)$.²⁷ Swinburne is arguing from intrinsic probabilities in a situation that does not involve intrinsic probabilities. (In defense of Swinburne, he may be anticipating his move of breaking $\sim h$ into three cases, discussed in the next section; nevertheless, the move of ignoring the finite god hypothesis is not valid in the context in which it appears.) Furthermore, it is strange that Swinburne “ignore[s] an alternative” given that he stresses the objective nature of these probabilities, “My concern with inductive probability is a concern with how probable q makes p , quite apart from who is doing the calculation, how clever he is, and his degree of confidence in the evidential

support of q In order to emphasize the objective character of the value $P(p|q)$”²⁸

Since the probabilities are what they are, we should not be ignoring anything.

4.3 The Balance of Probability

Let us turn to another probabilistic point. Swinburne considers the various ways in which there might not be God, $\sim h$, which leads to three cases: h_1 , h_2 , and h_3 . Swinburne writes, ‘Let h_1 be the hypothesis that there are many gods or limited gods; h_2 be the hypothesis that there is no God or gods but an initial (or everlasting) physical state of the universe...; and h_3 the hypothesis that there is no explanation at all.’²⁹ The following equation must hold:³⁰

$$P(h|k) + P(h_1|k) + P(h_2|k) + P(h_3|k) = 1$$

Let us grant Swinburne a high intrinsic probability of God’s existence, $P(h|k) = 0.001$ (doing so provides a margin of safety for my argument below). I believe this estimate is, if anything, high, and is certainly in the spirit of Swinburne’s, ‘ $P(h|k)$ might be very small (so improbable is it *a priori* that there should exist anything at all)....’³¹ Using this value for $P(h|k)$, 0.001, implies that:

$$P(h_1|k) + P(h_2|k) + P(h_3|k) = 0.999$$

We thus need these three intrinsic probabilities to sum to 0.999. Swinburne writes that ‘theism is going to be much more probable than h_1 [that is, $P(h|k) > P(h_1|k)$], ‘ $P(h_3|k)$ is infinitesimally low’, and ‘Either $P(e|h_2 \& k)$ is going to be much lower than $P(e|h \& k)$ or $P(h_2|k)$ is going to be much lower than $P(h|k)$ ’.³² But if $P(h_1|k)$ and $P(h_3|k)$ are much lower than $P(h|k)$, as Swinburne has written, then $P(h_2|k)$ is going to make up the bulk of the 0.999. It is then not clear why Swinburne thinks that ‘either $P(e|h_2 \& k)$ is going to be much lower than $P(e|h \& k)$ or $P(h_2|k)$ is going to be much lower than $P(h|k)$ ’. Given his claims regarding $P(h_1|k)$ and $P(h_3|k)$, it follows that $P(h_2|k)$ is going to be very large (very close to 1). (In fact it is not clear why Swinburne thinks that the intrinsic probability for h_2 can be either/or. Given the constraint $P(h|k) + P(h_1|k) + P(h_2|k) + P(h_3|k) = 1$, once $P(h|k)$, $P(h_1|k)$, and $P(h_3|k)$ are determined, so too is $P(h_2|k)$. Put another way, either two or more of these four values are either/or, or none is. It cannot be the case that exactly one value is either/or, which is what Swinburne claims.) But if $P(h_2|k)$ equals, e.g., 0.998, Swinburne has shown that by far the most intrinsically probable hypothesis is h_2 , or ‘there is no God or gods but an initial (or everlasting) physical state of the universe...’³³ If so, it is difficult to see how to justify a low enough value of $P(e|h_2 \& k)$ to make Swinburne’s argument succeed. The basic problem is that:

$$P(h_1|k) + P(h_2|k) + P(h_3|k) = 0.999$$

must hold,³⁴ yet Swinburne indicates that all of the values, $P(h_1|k)$, $P(h_2|k)$, $P(h_3|k)$, are very low;³⁵ three very low values (very close to 0) cannot sum to 0.999. These intrinsic probabilities should be given reasonable values.

Let us combine two of the points made above, and then summarize my argument regarding the values in Swinburne's argument. When Swinburne does the final accounting of probability, his argument succeeds if and only if:³⁶

$$(1) P(e|h \& k) P(h|k) > P(e|\sim h \& k) P(\sim h|k)$$

In this paper I have suggested that $P(e|h \& k)$ is lower than Swinburne claims, that $P(h|k)$ is very small, and that $P(\sim h|k)$, which equals $1 - P(h|k)$, is large. These considerations make it difficult to see how (1) might hold, unless $P(e|\sim h \& k)$ is vanishingly small. I do not see how to make the numbers work. Swinburne does note that the right side of (1) can be expressed in the following equation:³⁷

$$(2) P(e|\sim h \& k) P(\sim h|k) = P(e|h_1 \& k) P(h_1|k) + P(e|h_2 \& k) P(h_2|k) + P(e|h_3 \& k) P(h_3|k)$$

Again I do not see how to assign values to the right side of (2) so that Swinburne's argument succeeds. It would be very beneficial if he would provide an example of such values.

I believe that Swinburne's argument in *The Existence of God* contains flaws. He has overstated the value of $P(e|h \& k)$ at $1/2$, which leads to a constraint on the complexity quotient $P(h|k) / P(e|k)$ that is far too low, i.e., $P(h|k) / P(e|k) < 2$; and his values for $P(h_1|k)$, $P(h_2|k)$, and $P(h_3|k)$ do not make sense in that they do not sum to $1 - P(h|k)$, which I have given the value 0.999. These two points combine to make it difficult to see how Swinburne's argument might succeed. A simple remedy would be for Swinburne to

give values to $P(h|e \& k)$, $P(e|h \& k)$, $P(h|k)$, $P(e|k)$, $P(e|\sim h \& k)$, $P(\sim h|k)$, $P(h_1|k)$, $P(h_2|k)$, $P(h_3|k)$, $P(e|h_1 \& k)$, $P(e|h_2 \& k)$, and $P(e|h_3 \& k)$ ³⁸ that could be correct. Swinburne notes that it is impossible to arrive at exact values for these probabilities. Yet I believe that if his argument is to be persuasive, then Swinburne should be able to provide values as a guide to the reader. In essence he would be saying, ‘Here is a possible assignment of probabilities. These values are not meant to be perfect, and there may be wide disagreement, but they at least meet the basic constraints of my argument and show that the argument might succeed.’ I have been unable to arrive at such a probability assignment, mainly due to the reasons presented above. Swinburne’s providing a possible assignment of probabilities would greatly strengthen his argument and thus benefit his goal of ‘reaching a fairly well-justified conclusion by rational argument on this issue’ of the question of God’s existence.³⁹ Yet I worry that the considerations above present serious obstacles to coming up with exact values.

5. Conclusion

This dissertation has taken a close look at Swinburne’s argument put forth in *The Existence of God*, the conclusion of which is that God likely exists. After discussing the general framework of the argument in chapter 1, chapter 2 discussed the specific evidence that Swinburne marshals in support of his conclusion. Chapters 3 and 4 turned from the evidence to a consideration of the simplicity of the hypothesis “God exists.” Swinburne claimed that 1 and the infinite are simpler than other specific finite vales, and that therefore God, in virtue of being 1 being person who is infinite on certain properties,

was the simplest personal being. Chapters 3 and 4 argued that all real numbers are equally simple, and that therefore Swinburne's claims regarding the simplicity of God failed. This view of the simplicity of numbers I termed "contextualism." Chapter 5 noted the tension that exists between Swinburne's *The Existence of God* and *The Coherence of Theism*. In particular, it turns out that God is not infinite on power and knowledge, despite Swinburne's claims that God is infinite on these two properties in *The Existence of God*. In Chapter 6 I turned to the question as to whether or not Swinburne's argument can succeed, paying particular attention to the values of the probabilities. One of the difficulties with Swinburne's argument is that he does not provide exact values to the many probabilities that appear in his argument. This makes it difficult to judge his argument. I argued that there are serious problems in reconciling claims of Swinburne's with values for the probabilities. Swinburne's argument, if it is to show that God likely exists, needs a great deal of modification and elaboration.

Notes

¹ Swinburne *The Existence of God*, 96-7. Also note that, "The claim that there is a God is called theism." Swinburne *The Existence of God*, 7

² Swinburne *The Existence of God*, 108.

³ Swinburne *The Existence of God*, 109.

⁴ Swinburne *The Existence of God*, 336.

⁵ Swinburne *The Existence of God*, 53.

⁶ Richard Swinburne *Epistemic Justification* (Oxford: Clarendon Press, 2001), 87.

⁷ Swinburne, "Could There Be More Than One God?", 234.

⁸ Clark, "Trinity of tritheism?," 1.

⁹ See Swinburne *The Existence of God*, 99.

¹⁰ One possible reply would be to claim that the properties power, knowledge, and freedom are properties that all persons have necessarily, rather than being properties that a person may or may not have. This move faces at least two difficulties. First, there does not seem to be textual support for this position in Swinburne's work. See in particular *The Coherence of Theism*, 102-3. Second, even if persons are assumed necessarily to have these three properties, specifying the degree of each property would still decrease intrinsic probability.

¹¹ Note that in order for the existence of a person to explain the universe, the person would have to have a certain minimal level of power, knowledge, etc. Thus another potential move Swinburne could make, in addition to those discussed below, is to argue that though $P(h|k)$ is lower when h is "God exists" as compared with "a person exists," $P(e|h \& k)$ may be greater when h is "God exists." However, given how much Swinburne stresses the importance of simplicity in determining $P(h|k)$, I doubt that this move would succeed.

¹² Richard Swinburne *The Coherence of Theism, Revised Edition* (Oxford: Clarendon Press, 1993), 101.

¹³ Swinburne *The Existence of God*, 70-1.

¹⁴ Swinburne *The Existence of God*, 336.

¹⁵ Recall that "God exists" is equivalent to "an omnipotent, omniscient, perfectly free person exists."

¹⁶ Swinburne *The Existence of God*, 341.

¹⁷ Based on the quote from Swinburne *The Existence of God*, 341.

¹⁸ Swinburne *The Existence of God*, 1-2.

¹⁹ I agree with Swinburne that some phenomena do not have scientific explanations because, put loosely, they are too big, too odd, or both (*The Existence of God*, 54). I, prior to becoming aware of Swinburne and his work, became interested in the possibility of a personal explanation for the universe. I was drawn to a personal explanation for the universe, to some extent, based on the kind of evidence that Swinburne considers in chapters 7 through 13. These are two examples of what I mean when I write that I am sympathetic to Swinburne's overall approach.

²⁰ Swinburne *The Existence of God*, 336.

²¹ Swinburne *The Existence of God*, 338-339. Note that Swinburne also suggests that the value might be $1/3$. My argument still succeeds assuming the value is $1/3$.

²² Assuming, with Swinburne, that God is simpler than the wooden block and that the universe is more complex than the small light wooden block.

²³ Swinburne *The Existence of God*, 131.

²⁴ Swinburne *The Existence of God*, 341.

²⁵ Swinburne *The Existence of God*, 112.

²⁶ Swinburne *The Existence of God*, 149.

²⁷ Sobel, in *Logic and Theism*, also draws attention to this move of Swinburne's. Swinburne replies ineffectively in his book review of *Logic and Theism*.

²⁸ Swinburne *The Existence of God*, 15.

²⁹ *The Existence of God*, 339-340.

³⁰ That this equation must hold follows from Swinburne's discussion on pages 111-112 and 339-340 of *The Existence of God*. Swinburne writes, '...where h , h_1 , h_2 , h_3 , etc. are such that one and only one such theory must be true'. Note that over many informal discussions four people have held that this equation must hold and two have held that it does not; those who maintained that the equation does not hold seemed to miss the important point that the various h 's only range over explanations, and not states of the universe. But another reason for Swinburne to provide an example of exact values (that could make his argument succeed) is that providing such values would make clear whether or not certain equations and logical relations are meant to hold.

³¹ *The Existence of God*, 112. Note that Charles Gutenson, replying to the first edition of *The Existence of God*, argued that $P(h|k) > 1/2$: Charles E. Gutenson, 'What Swinburne Should Have Concluded', *Religious Studies* 33 (1997): 243-47. However, I believe his argument fails as he mistakenly claims that there is only one rival to theism, namely brute fact. Also recall Swinburne's writing in the second edition of *The Existence of God* that $P(h|k)$ might be 'very small'.

³² *The Existence of God*, 339-340.

³³ *The Existence of God*, 339-340.

³⁴ Of course, the 0.999 can be given a different value, but it will still be a value very close to 1.

³⁵ With one value either/or, as discussed.

³⁶ *The Existence of God*, 339-341.

³⁷ *The Existence of God*, 340.

³⁸ This list is not meant to be minimal, that is, many probabilities on this list can be calculated from others.

³⁹ Hasker (2002) also notes that Swinburne does not provide probabilities (though in a slightly different context) writing, "...Swinburne does not give even approximate numerical values to the probabilities involved..." 257.

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