

PHILIP THE CHANCELLOR, BONAVENTURE OF BAGNOREGIO, AND THOMAS
AQUINAS ON THE ETERNITY OF THE WORLD

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Some philosophers have thought that there are sound arguments proving that past time is necessarily finite in duration. In light of these arguments, I examine the positions taken on past time by Philip the Chancellor, Bonaventure, and Thomas Aquinas. Philip argues that nothing created can be eternal and that everything which is not eternal is finite in past duration; I argue that many of the insights of Philip's position can be preserved even if the world is infinite in past duration. Bonaventure also believes that a created world must be finite in past duration, but, as I show, he accepts the conceptual possibility of infinite past time in an uncreated world. Despite being more liberal about infinite past time than is often believed, Bonaventure maintains the principle that it is impossible for an infinite number of things to exist simultaneously. I discuss how this principle bears on the eternity of the world discussion in both Bonaventure's writing and Aquinas'. Aquinas holds this principle for much of his career, albeit with some hesitation, but at the end of his life, he rejects it. I suggest that material from his *Physics* commentary on immaterial multitudes may give some insight as to why he does so. I also argue that Aquinas offers a successful reply to the argument that infinite past time is conceptually impossible because it entails the completion of an actually infinite series.

BIOGRAPHICAL SKETCH

Joseph William Yarbrough, III was born on March 27, 1980 in Lansing, Michigan, the first son of Joseph and Diane Yarbrough. He began his education at Maplewood Elementary School in Lansing, but when the family moved to East Lansing, MI, he entered Marble Elementary. In due course, he attended MacDonald Middle School and East Lansing High School where he graduated in 1998. He completed in 2002 his B.A. (*magna cum laude*) at Valparaiso University (Indiana) in Classics and Philosophy. It was there that Dr. Sandra Visser first kindled in him an interest in analytic philosophy as an academic discipline and as a way to think about the perennial questions of metaphysics and epistemology. In the following academic year, Joseph went up to the University of Oxford, matriculating there during Michaelmas Term 2002. While a member of St. Cross College and living at the Centre for Hebrew and Jewish Studies in Yarnton, he pursued a course of studies in the ancient Hebrew tongue, Jewish history and philosophy. He wrote a thesis concerning Maimonides' views on the beginning of the world for the degree of Master of Studies under the supervision of Dr. Joanna Weinberg. In the fall of 2003 he entered Cornell University where he completed a doctoral dissertation on the eternity of the world under the supervision of Professor Scott MacDonald. Since 2009 he has lived with his wife and children in Ave Maria, FL, where he teaches classics and philosophy at Ave Maria University.

In gratitude
to my parents, Joseph and Diane,
and to my grandparents, Emerson and Marjorie,
I dedicate this work.

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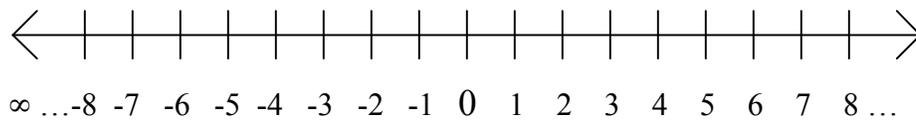
TABLE OF CONTENTS

Biographical Sketch	iii
Dedication	iv
Acknowledgments	v
Introduction – The Question of a Beginningless World	1
Chapter 1 – Conceptions of Time and Eternity	7
Chapter 2 – Philip the Chancellor on Time and Eternity	26
Chapter 3 – Bonaventure Reconsidered	69
Chapter 4 – Aquinas and a Beginningless World	105
Conclusion – The Significance of Philip, Bonaventure, and Aquinas	148
Appendix A – Translation: Bonaventure on the Eternity of the World	153
Appendix B – Translation: Bonaventure on Infinity & God’s Power	170
Bibliography	209

INTRODUCTION

THE QUESTION OF A BEGINNINGLESS WORLD

Is it conceptually possible that past time is infinite in duration? That is, irrespective of the physical laws of the actual world, is it possible that some world is infinite in past duration? This question has been a point of philosophical dispute from ancient times. The discussion over this question was most heated during the 13th century at the University of Paris, but it has not wanted for partisans even at the present day. Yet why would anyone think that the infinite duration of past time is a conceptual *impossibility*? Let us look at the following putative problems in regard to past time and infinity. Supposing time were infinite in past duration, every negative integer would correspond to a moment of elapsed time. On the timeline below, 0 is the present moment, the negative integers mark discrete moments of past time equal in duration, and the positive integers do the same for future moments of time.



This illustration suggests that, on the condition that past time is infinite in duration, the entire series of negative integers has been exhausted!¹ That is, a moment ago, the very last of the negative integers was used in counting down the moments of past time. Yet how could *all* of the negative integers have been used up? Since there is no greatest integer, how could the supply ever run out? Another puzzle appears on the assumption of infinite past time: if I had to count all of the integers (whether positive or negative), I would never reach the end of my task, even if I had an unending amount of time to work with. Yet somehow, out of the misty past, shrouded

¹ “Simple as it is, this may well be the most formidable and intriguing argument ever offered against the possibility of a beginningless world. If its attractiveness for the audacious party in the medieval debate isn’t immediately obvious, just think about correlating each negative integer with one past day and counting *all* the negative integers, ending with -3, -2, -1” (Kretzmann 1998, 177-178).

in the obscurity of infinity, time has run through all of the negative integers and has reached 0, the present moment. One side of the debate denies that something like this is possible; the other side makes the opposite claim.

Unlike some other philosophical questions which spawn various schools of thought and many nuanced solutions, there can be only two camps in regard to the conceptual possibility of past time's infinite duration: either it is possible or it is not. Should not some decisive account have laid the matter to rest long ago? Or are there certain characteristics which have made this debate one for the ages? I think that we can identify certain conflicting intuitions about the concept of infinity which lead to the disagreement over past time and which remain unreconciled even after the mathematics of infinity has reached a high level of clarity. The nature of infinity has held a prominent place in this discussion since Aristotle, but this aspect of the debate became all the more important after the work of Georg Cantor during the 19th century in transfinite mathematics. Set theory, which posits infinite sets, supported the intuition in the minds of some that past time is possibly infinite. Other mathematicians, while they grudgingly acknowledged a place for the actually infinite in mathematics, thought that actually infinite sequences existed nowhere but in the mathematical realm and, thus, that analogies could not be drawn between such mathematical quantities and quantities of non-mathematical objects. I devote Chapter 1 to examining these puzzles about infinity at greater length while also providing an introduction to the technical terminology which regularly occurs in the discussion of infinite past time.

Chapters 2-4 are the heart of the dissertation in which I evaluate the contributions of Philip the Chancellor (1160? – 1236), Bonaventure of Bagnoregio (1221-1274), and Thomas Aquinas (1225-1274). But why am I writing about these three figures in particular? In Chapter 2, I look at Philip the Chancellor, who taught in Paris at the beginning of the 13th century when

Aristotle's writings, which greatly influenced the medieval discussion of the eternity of the world, were entering the Latin West.² Philip is thus important because he stands at the head of a tradition of Catholic thinkers reading and interpreting Aristotle. The Philosopher, as he was often known, had burst onto the philosophical scene, eclipsing in his writings on natural philosophy the earlier tradition in which Plato and the *Timaeus* had figured prominently. Because of the power of his thought, Aristotle posed a challenge to the Catholic Church, which, unlike Aristotle, taught that the world had begun a finite number of years ago. Thus, Philip's reading of Aristotle which attempts to reconcile the Catholic belief in the finitude of past time with Aristotle's arguments for beginningless past time is of particular interest. We shall also want to examine why Philip thinks that nothing created can be either eternal or beginningless, where "beginningless" means infinite in past temporal duration. As a final point for our consideration, he also attempts to explain the relation of time to eternity, though he does not take a position on the possibility of beginningless past time in an uncreated world.

This is not, however, to say that no one else was thinking of Aristotle in the same way at the same time as or even earlier than Philip. For instance, though it is uncertain whether Philip ever directly read Maimonides, the greatest of Jewish philosophers had made points about Aristotle and the beginning of the world in his *Dux dubitantium* which would be repeated by Philip. In the Latin West, William of Durham (died 1249) had anticipated some aspects of Philip's approach to the eternity of the world. Yet Philip is still worthy of our attention for three reasons. First, his presentation of these ideas was, in many cases, superior to that of his antecedents. Second, the treatise in which his position was presented to the philosophical public,

² Dales (1990): "One of the most able and original thinkers of the early scholastic period at Paris was Philip the Chancellor, who died in 1236. Still, his works are little known, probably because many of his most original ideas were appropriated by later better known masters, especially the great Mendicant theologians Alexander of Hales and Albert the Great" (57).

the *Summa de bono*, “seems to have been much more influential and widely disseminated than was William [of Durham’s] question on eternity, of which only a single MS copy remains” (Dales 1990, 64). Third, Philip does not really belong to either camp of the later 13th century. His views on Aristotle were adopted by “pro-Aristotelians and independent philosophers” while “his contentions that what has its being from another cannot have been without a temporal beginning . . . became [a] characteristic [doctrine] of the conservative party during the 1260s and 1270s” (Dales 65).³ Finally, Philip’s *Summa de bono* comes before the ecclesiastical condemnations and frequent personal animosity which plagued the discussion of the eternity of the world in the latter half of the 13th century. In juxtaposition with Philip, we can better understand the arguments of Bonaventure and Aquinas by seeing the philosophical tradition from which these mid-13th century philosophers drew.

The writings of Bonaventure and Thomas Aquinas are the high point of the debate in the 13th century and, especially in the case of Aquinas, may not have been surpassed since. What makes Bonaventure a high point in the debate and part of my reason for selecting him is a small section of his commentary on Peter Lombard’s *Sentences* to which subsequent authors recur again and again as the source for the best – or, at least, the standard – arguments against the possibility of the infinite past duration of the world. Bonaventure is thus a *locus classicus* for the debate over the eternity of the world, but his rôle as such has been, I think, often misunderstood. Part of my focus in Chapter 3 is on extricating Bonaventure from the misinterpretations to which

³ The “conservative party” can refer to those who maintained that *no* possible world is infinite in past duration or to those who maintained, as Bonaventure did, that no *created* world is infinite in past duration. Of the “independent philosophers, Dales writes: “the modern tendency to dub them Latin Averroists or heterodox Aristotelians, or any other term which implies that they intended anything contrary to Christianity, must be resisted. The most acceptable term I have found to describe them is ‘independent philosophers’, that is, men who claimed the right and competence of philosophy to investigate any question which is amenable to human reason in a way which is consistent with the categories and procedures of philosophy. Since faith is a kind of knowledge superior to reason, and since God can do things outside the course of nature if he chooses, the conclusions of reason may sometimes lead to different, but not contradictory, conclusions to the articles of faith” (109).

he has too often been subject on the question of infinite past time. Some have regarded him as the leader of those who claim to prove the impossibility of infinite past time. I explain why this misunderstanding may have come about and what, in fact, Bonaventure's position is. While he rejects the possibility of a created world with an infinite past duration, he endorses the conceptual possibility of infinite past time in an uncreated world, such as Aristotle may have conceived the world to be. But even as he accepts the conceptual possibility of infinite past time, he does not abandon his commitment to the principle that it is conceptually impossible for an infinite number of things to exist simultaneously. Indeed, he says that whoever accepts infinite past time will have to forego any positions which entail the simultaneous existence of an infinite number of things, e.g. souls. What is missing in Bonaventure is an explicit defense of the conceptual possibility of infinite past time and it is Aquinas who nicely supplies this lack.

In Chapter 4 we see how Aquinas moves beyond Bonaventure in a couple ways. First, he provides an argument for the conceptual possibility of beginningless past time. I examine Aquinas' defense of this position in what I have called the Traversal Argument. I have not, however, made it my aim to examine each one of his replies to the other arguments which purport to show that infinite past time is impossible. Part of the reason is that this is work which I do in Chapter 3 in explaining why Bonaventure (and we) should find the arguments he collects (and which Aquinas also addresses) against infinite past time unconvincing. Thus, I have largely ignored Aquinas' treatise *De aeternitate mundi*, except for the very end. I have also left untouched his oft-treated point of disagreement with Bonaventure, the argument over whether a created world is possibly beginningless. Instead, I have focused on what seems to be a position of sure agreement, that it is impossible for an actually infinite number of things to exist simultaneously. This is the second way in which Aquinas ultimately moves beyond

Bonaventure. For Aquinas wrestles with the principle that it is conceptually impossible for an infinite number of things to exist simultaneously, and comes to the conclusion, only at the very end of his career, that, at least in the case of non-physical objects, the principle has been often defended but not proven. In this way he lays to rest an argument against infinite past time which had dogged him throughout his career and about which he changed his mind in writing at least once.

My work, therefore, is mainly exegetical: to show what some of the interesting positions of Philip, Bonaventure, and Aquinas were, by what arguments they supported them, and to what extent these arguments are successful. In so doing I hope to remove misconceptions about the positions they supported; Aquinas and Bonaventure, each in their own way, have more liberal views on beginningless past time than have often been attributed to them. Knowledge of their true positions may go a long way in helping us reflect about these questions today.⁴

⁴ Those who claim that infinite past time is a metaphysical impossibility are wont to cite notable figures in the philosophical tradition who maintained the same position, not as a means of overawing the opposition, but by way of showing that their view, today unpopular, was once quite fashionable. Among other things, I hope to show that Bonaventure cannot be used in this way. Lists of authorities do not amount to philosophical arguments, but we may be interested in the number and especially the quality of the thinkers who leant one way rather than another on the intuitions which become some of the premises of the arguments in question.

CHAPTER 1
CONCEPTIONS OF TIME AND ETERNITY

Introduction

In this chapter my purpose is two-fold. First, I unpack the terminology often employed in discussions of the “eternity of the world”, itself an expression in need of explanation. In the second section, I survey a couple areas in which disagreement, often at the level of intuitions, seems to have given rise to different views about the conceptual possibility of the infinite duration of past time.

Section I: Terminological Considerations

Before I present the positions of Philip the Chancellor, Bonaventure, and Aquinas, I think that their work can be most helpfully introduced by an examination of the terminology which occurs frequently in their writing on this topic. Indeed, the language I look at here is relevant when considering this topic across the centuries. The terms “eternity” and “everlasting”, the distinction between time and the world, and the precise import of the proposition which I below call PPI come up again and again in the literature, but their meaning can often be mistaken owing to the terminological vagaries of a particular author. I want to establish what these ideas are so that I can refer back to them in evaluating various authors’ arguments that may be couched in slightly different language.

Aeternitas (Eternity)

The debate I consider in this dissertation is commonly said to be over the “eternity of the world”. Such language is ubiquitous in medieval treatises on the subject. A section of Philip the Chancellor’s *Summa de bono*, “Utrum mundus sit eternus” (“Is the world eternal?”), Bonaventure’s question “utrum mundus productus fuerit ex tempore an ab aeterno” (“was the world produced temporally or from eternity?”) and the title of Aquinas’ opusculum, *De aeternitate mundi* (*On the eternity of the world*) are hardly unique. Yet to refer to the debate as though it were concerned with the *eternity* of the world is rather unhelpful. The reason is that many philosophers, whether in the medieval period or today, make special use of the term “eternal”, often along the lines of Boethius’ definition:

Eternity is the complete and perfect possession, all at once, of an unending life.⁵

With Boethius’ definition on the table, some problems in speaking of the “eternity of the world” appear. It sounds odd to say that the world is alive or that it has a life. Most obviously, no one would suggest that the world lives its life, whatever that might be, all at once. As Boethius goes on to say, “whatever lives in time moves as present from the past into the future and there is nothing constituted temporally which can embrace at once the whole space of its life: not yet having hold of tomorrow it has already let go of yesterday” (V.6.5).⁶ Even if the world exists for an infinite amount of time, Boethius insists on the mode of existence as the crucial distinction between time and eternity, not the duration:

Certain people wrongly suppose, when they hear that it seemed to Plato that this world did not have a beginning in time and is to have no end, that the created world is thus made co-eternal with its Creator. But it is one thing to be carried through an endless life,

⁵ “Aeternitas igitur est interminabilis vitae tota simul et perfecta possessio” (V.6.4).

⁶ “quicquid vivit in tempore, id praesens a praeteritis in futura procedit nihilque est in tempore constitutum quod totum vitae suae spatium pariter possit amplecti, sed crastinum quidem nondum apprehendit hesternum vero iam perdidit”.

which is what Plato attributed to the world, and another to embrace the whole presence of endless life in all its parts, which is manifestly proper to the divine mind.⁷

Thus Boethius unambiguously rejects the idea that what is temporal might also be eternal.

So why did the medievals so often speak of the “eternity of the world”? They certainly did not do so out of ignorance of Boethius’ famous definition. To cite a few instances, Philip the Chancellor discusses its terminology at *Summa de bono* 1.4.9, Bonaventure in his commentary on the Gospel of Luke 18.30, and Aquinas at *Summa Theologiae* 1.10.1.⁸ Partly, I think, the issue was one of style, such as we see in the expression “in aeternum”, which means “forever” and which is not necessarily intended to make a philosophical statement. Such phrases were suggested by the Latin versions of the Old and New Testaments, in which there occur 221 instances of “aeternum” (to cite just one inflection of the Latin word), many of which do not relate to God himself, and which mean “forever” or “a very long time”.⁹ This usage is unmistakable in Aquinas’ writings. Deferrari, in his lexicon of Aquinas, speaks of “*eternal* in the true sense of the word, without succession of past, present, and future” and “*eternal* in the false sense of the word, i.e. endless, unceasing” (36). While I would not call the one sense true and the other false, confusion is likely to arise if the reader is not careful to distinguish between the non-philosophical and the full Boethian significations of the term.

Thus far I have suggested that a certain degree of looseness was responsible for the expression “the eternity of the world”, but I also think that philosophical reasons may not always have been wholly absent from this choice of words. As we shall see in Chapters 2 and 3, Philip

⁷ *De consolazione philosophiae*, V, pr. 6: “Unde non recte quidam, qui cum audiunt uisum Platoni mundum hunc nec habuisse initium temporis nec habiturum esse defectum hoc modo conditori mundum fieri coaeternum putant. Aliud est enim per interminabilem duci uitam, quod mundo Plato tribuit, aliud interminabilis uitae totam pariter complexum esse praesentiam, quod diuinae mentis proprium esse manifestum est.”

⁸ Cited in Fox 299-300.

⁹ E.g., Exodus 12:24, “custodi uerbum istud legitimum tibi et filiis tuis usque in aeternum” (“Thou shalt keep this thing as a law for thee and thy children forever”); 1 Corinthians 8:13, “quapropter si esca scandalizat fratrem meum non manducabo carnem in aeternum ne fratrem meum scandalizem” (“Wherefore, if meat scandalize my brother, I will never eat flesh, lest I should scandalize my brother”).

and Bonaventure are of the view that nothing created can be beginningless. Bonaventure also thinks that beginningless past time is a conceptual possibility, provided that the world is uncreated. This position suggests that there is a certain ontological parity between God and the world, if the two, in fact, are really distinct at all. The “eternity of the world”, then, may have been a phrase recommended by the idea that if the world was beginningless, it was uncreated, and so not dependent for its existence on God, and in this respect very similar to God himself, who is uncaused and beginningless. In this case, to speak of the “eternity” of the world does not seem so far-fetched, where to be “eternal” means being uncaused and infinite in past duration, albeit while remaining a temporal entity; the Boethian definition is still not an exact fit.

As may be expected, these questions preoccupied the medievals more than they do contemporary authors, but confusion over “eternal” tends to slip into the writing of both periods. In many cases, the harm is not great, but if left ambiguous, such language can make it seem that the debate is about whether the world has a mode of existence like Boethius’ conception of God’s. It is therefore important to be clear just what this debate is about, even when it is said to be over the “eternity of the world” – it is a debate over the possibility of the infinite past duration of time. Except for the well-worn expression “eternity of the world”, I will reserve “eternity” and the adjective “eternal” for instances in which I intend the full Boethian signification of the terms.

Everlasting (Perpetuum)

There is a term akin to “eternity” and its adjective which also occurs frequently in the literature and should therefore be distinguished from it. In order to avoid the metaphysical

tangles of eternity “everlasting” (*perpetuum*) is often employed. I define “everlasting” as follows:

x is everlasting iff for every time t , x exists at t and x is not eternal.

In so doing I follow Boethius (following Plato): “if we want to put appropriate names to things, following Plato we will say that God is eternal, but that the world is everlasting.”¹⁰ It should be observed that on this definition time itself is necessarily everlasting. Boethius thinks that time stretches itself to infinity in a vain imitation of the eternal, but this is not the only way for time to be everlasting. For whether time is infinite in duration or finite, it is correctly described as everlasting, since time exists at all and only those times when it exists. Philip the Chancellor will make use of this sense of everlasting in trying to reconcile Aristotle with the Catholic faith on the beginning of the world. Thus “everlasting” serves two purposes. It provides a way of talking about something which exists for all the time there is without prejudging the question of time’s possible infinity. Second, as a possible description of things which have a temporal existence, it provides a way to speak about things which are beginningless but temporal – and so not eternal.

Time and the World

As I have said, the debate over the infinite past duration of time is often referred to as one over the “eternity of the world”. Having explained the use of “eternity” in that expression, I should also say something about “the world”. In speaking of “the eternity of the world”, a philosopher engaged in this debate means not the planet Earth, but the entire cosmos.

Sometimes, especially in the medieval period, “the world” refers to everything except God, that

¹⁰ Ibid. “Itaque si digna rebus nomina uelimus imponere, Platonem sequentes deum quidem aeternum, mundum uero dicamus esse perpetuum.”, where Boethius understands both God and the world to be, in their different ways, without beginning or end.

is, to all of the created order, such as to incorporeal substances like angels, to all corporeal substances, and perhaps to time itself.¹¹ Thus, among the reasons for the use of the adjective “eternal” as applied to the world, another is that it would sound strange to speak of “the infinity of the world”, a locution which suggests a spatial magnitude rather than a temporal duration.

Since the origin of time and the origin of the world might be two different things, the confusion between the “world” and “time” can be doubly problematic. For an instance of a separation between the two, there is the infamous question Augustine relates in Book XI of his *Confessions*: “What was God doing before he made the heaven and the earth?” (init. Chap. 10).¹² In order to say that God was doing something *before* he made the heaven and the earth, this action must be related in a temporal series with the making of the heaven and the earth. If it is, then time, or at least *some* temporal frame of reference, predates the creation of the heaven and the earth, i.e. of the world.¹³ Yet if this were the case, there would be a question about why God created at one time rather than another.¹⁴ As Augustine’s interlocutor puts it, “If God was idle and doing nothing, why not always thus?”

¹¹ “World” is never in this context, I do not think, used in the sense of a *possible world*, which would include God besides, and about which the question of duration would not arise.

¹² “Nonne ecce pleni sunt vetustatis suae qui nobis dicunt: Quid faciebat Deus antequam faceret caelum et terram? Si enim vacabat, inquit, et non operabatur aliquid, cur non sic semper et deinceps, quemadmodum retro semper cessavit ab opere? Si enim ullus motus in Deo novus extitit et voluntas nova, ut creaturam conderet, quam numquam ante condiderat, quomodo iam vera aeternitas, ubi oritur voluntas, quae non erat? Neque enim voluntas Dei creatura est, sed ante creaturam, quia non crearetur aliquid, nisi creatoris voluntas praecederet. Ad ipsam ergo Dei substantiam pertinent voluntas eius. Quod si exortum est aliquid in Dei substantia, quod prius non erat, non veraciter dicitur aeterna illa substantia; si autem Dei voluntas sempiterna erat, ut esset creatura, cur non sempiterna et creatura?” (Liber XI, Capitulum X, Augustini *Confessiones*).

¹³ There is another possibility in this neighborhood, that of different temporal series. In this rather unusual picture, God would occupy his own temporal series and the cosmos another. Philip the Chancellor, William of Baglione, and Eustace of Arras attempt proposals in this vein. Cf. Dales (1990) 62-63, 112-113, and 118-119. I wonder if a proposal of this sort does not seem more plausible in light of the Theory of Special Relativity with its intimation that time is pluriform rather than absolute.

¹⁴ “There are innumerable questions to which the inquisitive mind can in this state receive no answer: Why do you and I exist? Why was this world created? Since it was to be created, why was it not created sooner?” (Boswell’s *Life of Johnson*).

Augustine answers these questions by indirectly remonstrating with his interlocutor for asking a question in temporally conditioned language of an event or events when time did not exist. Augustine says to God: “Time could not elapse before you made time. But if time did not exist before heaven and earth, why do people ask what you were doing then? There was no ‘then’ when there was no time.”¹⁵ Whereas his interlocutor had suggested that the cosmos and time are independent of each other, Augustine’s solution is to include time among those things produced with or through the existence of the cosmos.¹⁶ Yet the interlocutor ought easily to be forgiven some of the mischief imputed by Augustine to this line of questioning for the reason that Augustine’s language belies, to a degree, his solution of the puzzle. Whether because of the word “when” or because of the tenses of the verbs, there readily arises the idea of a sort of time before time. Augustine saw that it was ludicrous to speak in this way,

If we are referring to different individuals, we can rightly say, ‘There was a man when that man did not exist’, and so we can say, ‘There was a time when this time did not exist’; but to say, ‘There was a time when there was no time’ is beyond the capability of the veriest idiot (*City of God* XII.16).

Yet such language occurs fairly often, and so the philosopher, at least, must tread delicately. We do so by acknowledging that the constraints of our ordinary language often require us to talk *as though* there were virtual time before time even when we do not mean to commit ourselves to such a thing. In the same way, our language might imply a virtual space outside of the universe. Of course, there cannot be something physical outside of what is, by definition, everything physical. But if the universe is finite, we may still end up talking as though it were contained in

¹⁵ *Confessions* XI.15 (trans. H. Chadwick).

¹⁶ “Aut quae tempora fuissent, quae abs te condita non essent? . . . Si autem ante caelum et terram nullum erat tempus, cur quaeritur, quid tunc faciebas? Non enim erat tunc, ubi non erat tempus” (*Confessiones* XI.13). This passage points to the questions about the nature of time, such as whether motion is necessary for time and, thus, the first movement of the heavens and earth are the first moment of time.

something larger, for this is the implication of our language about objects, of any size, *within* the world.¹⁷

When the physicist says that time is but one axis of the space-time fabric, then there is no question whether time existed before the universe existed, which just is the space-time fabric and everything in it; time clearly could not exist before it existed. Similarly, if there is no motion in God and time derives from motion, as Aristotle and Augustine maintain, there could not be time before the creation.¹⁸ It is the need to account for God, who exists outside of time (apparently), yet who lives and acts, which drives the need to speak of a “before” before there were any before. On the face of it, this seems an exclusively theistic concern. But the contemporary cosmologist might find himself with a not altogether different need. Stephen Hawking’s “wave function of the universe” and the so-called “quantum tunneling from nothing” also suggest something prior to the beginning of the universe.¹⁹ The physicist, like the theist without a good account of God’s relation to time, should worry that he is committing himself, perhaps incoherently, to a time before time. As for the debate over the possibility of the infinite past duration of time, the important thing is to recognize that “the world” generally refers to the whole reality of the cosmos, including time, though as *Confessions* XI shows, this need not always be the case.

¹⁷ For instance, if I were to say, “The space within which our world exists seems so small”, an image may occur to our minds of a sphere set within a larger space. This sort of relationship holds good for any object we encounter within the cosmos, but it is wrong to think thus of the cosmos itself, even though the cosmos as a whole could be larger than it is or is even now expanding (but without diminishing the space outside of itself, for there is none).

¹⁸ For instance Augustine says in *The City of God*, “For when there was no created thing whose change and movement could be the condition of time’s passage, time could not exist” (xii.16, trans. Bettenson).

¹⁹ Hartle, J. and Stephen W. Hawking, “Wave Function of the Universe,” *Physical Review D* 28 (1983): 2960-75. See also Carroll, William E., “Aquinas and the Big Bang,” *First Things* 97 (November 1999): 18-20.

The Meaning of PPI

Having laid down some definitions and remarked some of the difficulties in terminology, I want now to clarify the claim which I have said is at the heart of the debate over the eternity of the world:

(PPI) It is possible that past time is infinite in duration.²⁰

This is the proposition I intend to refer back to while wading through various philosophers trying to speak to the same issue but using slightly different language as they do so. PPI more or less speaks for itself, but there are a couple of propositions in the ballpark which we might mistake for PPI and which turn out to be trifling or which miss the substantive issue at stake. I want to make clear that I do not understand PPI as equivalent to these other propositions.

First, PPI may be readily confused with:

(A) It is possible that past time is beginningless.

PPI and (A) are superficially similar, but come apart in light of an important distinction. We may think of a beginning as an event occurring some definite number of equal moments of time in the past. But it is also possible to understand “beginning” in the sense of “origin”. Thus understood, *pace* Bonaventure and others, the world might have had a beginning in virtue of having a cause even though it lacks a first temporal moment.²¹ If we understand “beginning” in the former sense, PPI and (A) are equivalent, but if in the latter, then they are not. Both ways of understanding “beginning” are relevant to the medieval discussion of this topic, and so I favor the formulation of PPI because it does not contain this ambiguity. Contemporary interest in this literature tends to focus on “beginning” only as understood in the first sense. This is because entry into the discussion of the second sense presupposes a metaphysics of creation, a topic

²⁰ “PPI” is for “the past is possibly infinite” (in duration).

²¹ Cp. Boethius’ *De consolazione philosophiae* (V.6.11): “God must not be seen as prior to created things by a quantity of time, but rather by the unique quality of his simple nature.”

which the medievals often closely joined with the eternity of the world debate; the discussion in terms of the first sense is not thus restricted.

Second, we might think that PPI is equivalent to:

(B) It is possible that the moments of time which have elapsed before the present moment of time are infinite in number.

A keen reader will see immediately that (B) is very likely true; the debate is at an end! He will, perhaps, recall Zeno's paradoxes and the puzzles over continua.²² It is commonly accepted that a discrete block of time, such as a minute, can be divided, at least conceptually, *ad infinitum* in the following fashion: $\frac{1}{2}$ of a minute, $\frac{1}{4}$ of a minute, $\frac{1}{8}$ of a minute, and so on. If the "moment" of time becomes progressively shorter, it is possible to divide even a single minute into an infinity of moments. But this is not what the one who maintains the truth of PPI is interested in saying. Instead, even if time is *potentially* divisible *ad infinitum*, the assumption with PPI is that time can be measured in equal discrete portions, such as in seconds, minutes, hours, or revolutions of the sun. So we should state proposition (B), if it is to come to the same thing as PPI, as follows:

(B') It is possible that an infinite number of (e.g.) minutes have elapsed before the present minute.

Though we might substitute some other measure of time, such as hours or revolutions of the sun – the latter was a favorite of the medievals – we can take "minute" as a rigid designator and use the term to explain "infinite in duration" as a duration which consists of an infinite number of minutes.

Thus far I have tried to clarify some of the terminological issues involved in the debate over PPI in the hope that this will both make clear what is at stake in the discussion as well as give a common background against which to assess Philip, Bonaventure and Aquinas. I turn

²² *Physics* 239b5 and following.

now to an introduction of what I take to be the sources of disagreement in this debate: the concept of infinity and the question of whether an infinite number of things can exist simultaneously.

Section II: The Problems and Puzzles of Infinity

Since at least the time of Aristotle, it has been uncontroversial that it is impossible to complete an infinite sequence on the assumptions that (1) the rate of completion, however fast, remains constant and (2) the items in the sequence are distinct and non-overlapping. For example, it is impossible to begin counting the positive integers, 1, 2, 3, ... and to reach the end.²³ In the case of the positive integers, the impossibility of completing the counting of all of them follows from the fact that there is no highest positive integer; for any positive integer n , there is yet another greater than it, $n + 1$. No less than at any other time, during the medieval period the impossibility of reaching the end of an infinite sequence, given the two assumptions I have mentioned, was a *locus communis* among the philosophers engaged in the debate over past time. But why should we think that it is so difficult to complete an infinite sequence? Aristotle resolves the paradox Zeno makes of traversing (e.g.) one meter by noting that just as one meter can be divided, at least conceptually, an infinite number of times, so that the sequence of distances to be covered is $\frac{1}{2}$ meter, $\frac{1}{4}$ meter, $\frac{1}{8}$ meter, and so on (the sum of which sequence is 1 meter), so also the time required to cover the distance of 1 meter, say 1 second, can be infinitely apportioned as follows: a $\frac{1}{2}$ second for a $\frac{1}{2}$ meter, a $\frac{1}{4}$ second for a $\frac{1}{4}$ meter, $\frac{1}{8}$ second for $\frac{1}{8}$ meter, and so on. In this illustration, since the time required to cover the distance grows progressively shorter, it is possible successively to pass through to the end of the infinite

²³ This point is, of course, distinct from the fact that the positive integers form an enumerable or countable set which, being infinite, is said to be “enumerably infinite or denumerable” (Boolos, Burgess, Jeffrey 2002, 3-4).

sequence: $\frac{1}{2}$ meter, $\frac{1}{4}$ meter, $\frac{1}{8}$ meter, and so on. Similarly, we could complete the counting of the positive integers, if the rate at which we were counting them were growing exponentially faster. As Aristotle says in *Physics V*:

For there are two ways in which length and time and generally anything continuous are called infinite: they are called so either in respect of divisibility or in respect of their extremities. So while a thing in a finite time cannot come in contact with things quantitatively infinite, it can come in contact with things infinite in respect of divisibility; for in this sense the time itself is also infinite: and so we find that the time occupied by the passage over the infinite is not a finite but an infinite time, and the contact with the infinities is made by means of moments not finite but infinite in number” (233a24-31).²⁴

So the impossibility of completing an infinite sequence hangs upon the assumptions already mentioned. Significantly, these assumptions are built into the case of infinite past time. We cannot apply the above Aristotelian solution to infinite past time because the rate of traversal does not and, indeed, it seems safe to say, cannot increase with the passage of time, for time passes at the fixed rate of (e.g.) one second per second.

With these considerations in mind, let us consider an argument based on the representation of time as a timeline. The formulation of this argument is mine, but it is characteristic of arguments advanced by philosophers denying the possibility of an infinite past. The Argument from the Impossibility of Completing an Infinite Sequence:

- (1) It is impossible to complete, at a fixed rate, an infinite sequence (e.g., an infinite sequence of 24 hour days). (Premise)
- (2) If the number of days before the present day is infinite, then an infinite sequence of days was completed before the present day. (Premise)
- (3) Past time is infinite in duration. (Assumption for *reductio*)
- (4) The number of days elapsed before the present day is infinite. (From 3)
- (5) An infinite sequence has been completed. (From (2) and (4))

²⁴ Trans. Hardie and Gaye in Barnes (1995).

(6) It is possible to complete, at a fixed rate, an infinite sequence. (From (5))

(7) It is both possible and impossible to complete, at a fixed rate, an infinite sequence.

((1) and (6)).

∴ It is not the case that past time is infinite in duration.

As will become clear in Chapters 3 and 4, in response to this argument, the primary mode of attack is to reject the conclusion reached at (5), that an infinite sequence (e.g., an infinite number of days) must have been completed in order to reach the present day, where that is understood to mean that the sequence was begun at some determinate point and subsequently completed. But before coming to those responses, it will be helpful to consider another, though related, way of thinking about infinite sequences in order to have a better position from which to assess the premises of this argument and subsequent iterations.

Georg Cantor's work in transfinite mathematics provided a revolutionary way of thinking about infinite sequences.²⁵ His innovation was to offer a way of understanding the sequence of positive integers, for instance, as a determinate whole which could be handled, logically speaking, as a single set. He assigned \aleph_0 to represent the cardinal number of this sequence: "This [symbol] represented the number of all the numbers in the series 1, 2, 3, . . . and was the first infinite or transfinite number, coming after all the finite numbers", Craig (1993) explains (7). Cantor's first transfinite number thus appeared to be a completion of the impossible task of counting all the natural numbers. Further, the *set* of all natural numbers was said to have an actually infinite number of members. Whereas previous views considered infinite sequences as never completed and only (potentially) infinite because there was always one more element to add to the sequence, the set of all natural numbers was a determinate whole to which nothing

²⁵ David Hilbert (1964): "Cantor's . . . theory of *transfinite* numbers . . . is, I think, the finest product of mathematical genius and one of the supreme achievements of purely intellectual human activity. . . . No one shall drive us out of the paradise which Cantor has created for us" (139,141).

more remained to be added. David Hilbert describes the difference between a potentially and an actually infinite sequence in a way illuminating for our purposes:

Someone who wished to characterize briefly the new conception of the infinite which Cantor introduced might say that in analysis we deal with the infinitely large and the infinitely small only as limiting concepts, as something becoming, happening, i.e., with the *potential infinite*. But this is not the true infinite. We meet the true infinite when we regard the totality of numbers 1, 2, 3, 4, . . . itself as a completed unity, or when we regard the points of an interval as a totality of things which exists all at once. This kind of infinity is known as an *actual infinity* (139).²⁶

Thus, it belongs to the definition of a potential infinity that it is never complete; whether of numbers or of points in a line segment, there is always at least one more. Cantor's innovation, however, was to see all of, e.g., the positive integers as a completed whole, as members of a single set. The members of this set are characterized as definite and distinct:

That the members of a set are distinct means that each is different from the other. To say that they are definite means that given a set S , it should be intrinsically settled for any possible object x whether x is a member of S or not. This does not imply actual decidability with the present or even future resources of experience; rather a definition could settle the matter sufficiently . . . (Craig 1993, 8).

So on the one hand, just as I could never count all of the points in a line segment, it would be equally foolish to undertake counting at a fixed rate all of the positive integers (while hoping to finish). On the other hand, Cantor provided a way to put infinitely many things into a package of manageable size. The question is what bearing, if any, this mathematical breakthrough has on the non-mathematical realm. Does it show, for instance, the conceptual possibility of the world traversing an infinite number of moments of time? Or, to take another question from an argument which some medievals will use against PPI, does it show the conceptual possibility that an infinite number of things can exist simultaneously?

²⁶ Hilbert (1964).

The Metaphysical Status of the Infinite

The question of completing an infinite sequence pertains to the argument outlined above (“The Argument from the Impossibility of Completing an Infinite Sequence”) and to which, in subsequent iterations, I will refer as the Traversal Argument. There is, however, another and related puzzle about infinity which Bonaventure and Aquinas will make much of. We might wonder whether it is possible for an infinite number of things to exist simultaneously. In the opening essay of *Theism, Atheism, and Big Bang Cosmology*, Craig lists a number of mathematicians and philosophers who have in common a skepticism about the possibility of an infinite number of objects existing simultaneously in concrete reality (5-11). I want to survey some of these views for two reasons. First, we should see that skepticism about infinities outside the realm of mere mathematical consistency is not restricted to the ancient and medieval periods, prior to the genius of Cantor. Second, I would like to provide a perspective from (more) modern mathematics against which to assess, in Chapters 3 and 4, the sorts of the things the medievals were saying against the possibility of the simultaneous existence of an infinite number of the things.

Aristotle was among the earliest to express skepticism about the simultaneous existence of an infinite number of things. In *Physics* III Aristotle writes:

. . . clearly there is a sense in which the infinite exists and another in which it does not. Now things are said to exist both potentially and in fulfillment. Further, a thing is infinite either by addition or by division. Now, as we have seen, magnitude is not actually infinite. But by division it is infinite. . . . The alternative then remains that the infinite has a potential existence. *But we must not construe potential existence in the way we do when we say that it is possible for this to be a statue – this will be a statue, but something infinite will not be in actuality* (206a12-21).²⁷

²⁷ Cf. David Bostock, “Aristotle, Zeno, and the Potential Infinite”, *Proceedings of the Aristotelian Society* 73 (1972-3), 37-57. My emphasis.

“Further, a thing is infinite either by addition or by division”: at least conceptually, I can take some measure, e.g. one yard, and divide it in half, then the remainder in half again, and then half of that remainder, and so on; or, I can add one finite quantity to another without end, |, ||, |||, But, at least as far as Aristotle is concerned, what we call the potentially infinite does not imply that the infinite might be actual in the way that a piece of marble, which is potentially a statue, may be made into an actual statue. Aristotle goes on to say:

Our account does not rob the mathematicians of their science, by disproving the actual existence of the infinite in the direction of increase, in the sense of the untraversable. In point of fact they do not need the infinite and do not use it. They postulate only that a finite straight line may be produced as far as they wish. It is possible to have divided into the same ratio as the largest quantity another magnitude of any size you like. Hence, for the purposes of proof, it will make no difference to them whether the infinite is found among existent magnitudes.²⁸

Centuries after Aristotle, mathematicians still did not think that they were robbed: Newton and Leibniz affirmed the existence only of a potential infinite.²⁹ Georg Friedrich Gauss, a 19th century mathematician, wrote thus of the actual infinite:

I protest . . . against the use of infinite magnitude as if it were something finished; this use is not admissible in mathematics. The infinite is only a *façon de parler*: one has in mind limits approached by certain ratios as closely as desirable while other ratios may increase indefinitely.³⁰

Bernard Bolzano’s “primary examples of infinite sets,” reports Craig, “were admittedly in the ‘realm of things which do not claim actuality, and do not even claim possibility.’”³¹ Craig goes on: “When it came to an instance of an actual infinite in the real world, Bolzano was reduced to pointing to God as an infinite being” (9-10). Abraham Robinson says of Cantor’s transfinite

²⁸ *Physics* III, 7, 207b28-35.

²⁹ Abraham Robinson, “The Metaphysics of Calculus”, in Jaako Hintikka (ed.), *The Philosophy of Mathematics*, Oxford Readings in Philosophy (London: Oxford University Press, 1969), pp. 156, 159. As for Leibniz’s view, cf. John Earman, “Infinities, Infinitesimals, and Indivisibles: The Leibnizian Labyrinth”, *Studia Leibniana* 7 (1975), pp. 236-251.

³⁰ Karl Friedrich Gauss and Heinrich Christian Schumacher, *Briefwechsel*, ed. C.A.F. Peters, 6 vols (Altona: Esch, 1860-5), ii. 269.

³¹ Bernard Bolzano, *Paradoxes of the Infinite*, trans. Fr. Prihonsky, intro. Donald A Steele (London: Routledge & Kegan Paul, 1950), p. 84.

numbers that they are “abstract and divorced from the physical world” (163). In short, there is a decent intellectual pedigree for skepticism about the applicability of the actually infinite to things beyond the realm of mere mathematical consistency. Even more so is this true if the question were to arise about an actually infinite number of physical objects; even if all of the natural numbers could be stacked on a pinhead, what should we say about more bulky objects?

Some who deny the possibility of the simultaneous existence of an infinite number of things claim that the onus is on those who affirm it to give at least one instance of an actually infinite quantity of objects in the physical world. Yet the physical world does not abound with examples of such infinities. Hilbert goes even further:

a homogenous continuum which admits of the sort of divisibility needed to realize the infinitely small is nowhere to be found in reality. The infinite divisibility of a continuum is an operation which exists only in thought. It is merely an idea which is in fact impugned by the results of our observations of nature and of our physical and chemical experiments (186).

I understand Hilbert thus: while space, as a mental abstraction, is infinitely divisible, there is nothing that inhabits space which exemplifies infinite division. Benacerraff and Putnam endorse Hilbert’s position to this extent: the mathematician ought not deduce the existence of “infinite structures” on the basis of physical reality. They write:

Suppose, however, that we assume that statements about infinite structures “make sense.” Are there in fact such structures to talk about? Hilbert argues convincingly that physics provides no clear evidence for the existence of such structures: in fact, the progress of physics has, as he points out, introduced finiteness and discontinuity in area after area in which the infinite and the continuous once reigned supreme. Today even the possibility of a beginning (and an end) to “physical time” is under discussion among physicists. Thus we must agree with Hilbert that if mathematics is to be independent of dubious empirical assumptions, it must not base assertions concerning the existence of infinite structures on physical considerations (6-7).

On the other hand, the defender of the possibility of the simultaneous existence of an infinite number of things is entitled to the claim that, though contingently speaking, there are no ready

examples, mathematics sufficiently supports the possibility. As Benaceraff and Putnam go on to say, it was Russell's view "that mathematics is concerned not with (physical) existence, but only with the *possibility* of existence" (7). Here we can begin to see the intuitive split between the two sides of the debate: "Russell and his followers apparently regard the *possible*, if not actual, existence of infinitely many objects as self-evident, whereas for Hilbert and the formalists the consistency of this assumption must be *proved*" (Benaceraff and Putnam 7). This demand illustrates the extent to which Hilbert considered that the connection between the actually infinite and physical reality had yet to be established. If someone is worried about the consistency of the existence of infinite objects in the case of abstract objects (sets and numbers), how much more so would he hesitate in the case of physical objects!

What about moments of time? The defender of the conceptual possibility of infinite past time answers that, granted there are some strange, counter-intuitive results if the mathematics is taken as a guide of possibility in the concrete realm, but such are the facts. The paradoxes of naïve set theory are one case wherein our intuitions led us astray; Kurt Gödel writing of Bertrand Russell says: "By analyzing the paradoxes to which Cantor's set theory had led, he freed them from all mathematical technicalities, thus bringing to light the amazing fact that our logical intuitions (i.e., intuitions concerning such notions as: truth, concept, being, class, etc.) are self-contradictory" (452).³² Are our naïve intuitions about the concrete realm of existence – or, possible existence in the concrete realm – any better?

³² "Russell's Mathematical Logic", first printed in Paul A. Schlipp, ed., *The Philosophy of Bertrand Russell*, The Library of Living Philosophers, Evanston, Ill. (Evanston & Chicago: Northwestern University Press, 1944), pp. 125-153. Reprinted in Benaceraff and Putnam (1964), pp. 447-469.

Conclusion

I have tried to show in this chapter both what the relevant conceptual issues are in the debate over the eternity of the world as well as some of the areas in which our intuitive judgments are likely to affect the evaluation of the premises used in these types of arguments. In the chapters which follow I will explain the ways in which the concerns of more recent literature canvassed in this chapter preoccupy Philip, Bonaventure, and Aquinas. The questions of infinite sequences and actual infinities greatly concern them, but not quite in the way we might expect. As it turns out, the possibility of infinite past time, seemingly a question of completing an infinite sequence, will make Bonaventure and Aquinas worry more about the simultaneous existence of an actually infinite number of things.

CHAPTER 2

PHILIP THE CHANCELLOR ON TIME AND ETERNITY

Introduction

Philip the Chancellor (1160? – 1236) stands out among a series of medieval philosophers who wrestled with the question of whether the world could have lacked a temporal beginning. Although medieval philosophers prior to Philip had engaged this question, they were working primarily within a Platonic tradition about time, eternity, and the origin of the world.³³ By the 1230s in Paris, Philip had in hand Aristotle’s works on natural philosophy, commentaries on the same by Averroes, and perhaps even the *Guide of the Perplexed* by Moses Maimonides.³⁴ Influenced by these sources, Philip’s *Summa de bono* discusses the beginning of the world in Questions III and IV of the section concerned with the good of nature in general.³⁵ In surveying Questions III and IV, I have in mind two objectives. First, I will examine how Philip handles the Aristotelian material which seems to prove that time is beginningless. Second, though Philip himself believed that past time was finite, I will show how those who would defend the conceptual possibility of beginningless time can readily adapt Philip’s discussion of the concepts of time and eternity.

³³ Notable authors in this tradition are Augustine and Boethius. Augustine’s *Confessiones* and *De Civitate Dei* were standard sources for those dealing with the question of the world’s beginning; Boethius’ *De trinitate* and *De consolazione philosophiae* are cited by Richard Dales as used by Philip the Chancellor (63). Dales, Richard C. *Medieval Discussions of the Eternity of the World*. E.J. Brill: Leiden, 1990.

³⁴ Specifically, Philip cites Averroes’ commentary on the *Metaphysica*. As to whether Philip knew Maimonides’ work, Dales writes: “The translation of the *Dux dubitantium* was just making its appearance (ca. 1230-1235) while Philip was composing [the *Summa de bono*], so an influence is possible. . . . On the other hand, Philip uses no tell-tale phrasing echoing the Latin version of Maimonides, nor does he mention him by name” (64).

³⁵ Cf. MacDonald, Scott. “Goodness as Transcendental: The Early Thirteenth-Century Recovery of an Aristotelian Idea.” *Topoi* 11: 173-186, 1992. “In a now classic article, D. H. Pouillon established the seminal significance for the development of the medieval doctrine of the transcendentals of the opening questions of Philip the Chancellor’s *Summa de bono*.”

Philip's Forebears (I): the Platonic Tradition at the Dawn of the High Middle Ages

Before diving into the arguments for and against beginningless past time, Philip mentions earlier philosophers to whom his discussion of the world's origin is indebted. He remarks the similarities between Plato and Aristotle as though their views in this matter were nearly the same. Thus Question III opens:

Now let us go on to show that the world is not eternal in its duration (as the opinion of certain philosophers would have it). Plato posited three principles [*principia*]: God, the exemplar, and matter; Aristotle posited two principles, matter and form, where *form* is understood as synonymous with the *exemplar*; and a third he posited which is called the efficient or active principle. The scope of *form* is more general, however, than the scope of *exemplar*; for *form* encompasses a form existing in matter, self-subsisting forms, and exemplar-forms (if there are any such things). Further, Aristotle understands God to be the active cause, and on account of this cause, he seems to maintain that the world is eternal.³⁶

The mention of Plato dates Philip's writing: it indicates that this treatise did not originate at a time later in the 13th century when the works of Aristotle had come to dominate the discussion and Plato's *Timaeus* had faded into the background. Prior to Philip's time, treatises on the works of the six days of creation were the literature most pertinent to discussions of the world's beginning. Hexaemeral literature, which examined the six days of Biblical creation, was heavily influenced by the Platonic tradition and thus it is unsurprising to find Philip referencing Plato at the beginning of his own discussion. Authors such as Ambrose, Augustine, Boethius, and later, Calcidius, Thierry of Chartres (died post 1156), William of Conches (*ca.* 1085 – after 1154), Bernard of Sylvester (*ca.* 1100 – *ca.* 1160) and Anselm (1033 – 1109) are all forebears in the tradition of examining the origin of the world through, at least in part, a Platonic lens. Winthrop

³⁶ Nunc accedamus ad ostendum mundum non esse eternum in quo eliditur, ut videtur, quorundam philosophorum opinio. Posuit enim Plato tria principia Deum, exemplar et materiam, Aristoteles duo materiam et speciem et tertium quod dicitur efficiens sive operans, et per speciem comprehenditur illud quod dicitur exemplar. Intentio tamen speciei communior est quam intentio exemplaris; species enim comprehendit formam existentem in materia, formas etiam per se subsistentes, formas exemplares si aliquae sunt. Operantem autem causam intelligit Aristoteles Deum et per operantem videtur intendere quod mundus eternus (47). Hereinafter, I will give page references for the first volume of Nicolas Wicki, ed., *Philippi Cancellarii Parisiensis Summa de Bono*. Corpus Philosophorum Medii Aevi. Opera Philosophiae Mediae Aetatis Selecta (2 vols., Bern, Switzerland, 1985).

Wetherbee writes of the members of this group from the 12th century: “The cosmologists of the early twelfth century, Bernard and Thierry of Chartres, William of Conches, and a host of anonymous commentators, exhibit a Platonism which is not just the ingrained idealism of the Augustinian tradition, but reflects a new interest in Plato himself ‘Plato’ meant the cosmology of the *Timaeus*, and study of this central text as a way of explaining the relationship of God, the eternal ideas of things, and the material expression of these ideas was the chief project of these Platonists” (25).³⁷

Philip’s Forebears (II): Influences on an Interpretation of Aristotle

Although he has not neglected to mention Plato, Philip’s dominant concern in Question III is the newly available material from the Aristotelian corpus which pertains to the world’s origin. Before coming to these writings, I note two factors which are not explicitly mentioned by Philip but which must have conditioned his interpretation of these Aristotelian texts. The first is the Fourth Lateran Council (1215), which had stated in its opening document, *De fide catholica*, that God is the creator of all things, visible and invisible, “who by his almighty power at once from the beginning of time [ab initio temporis] made from nothing both creatures, spiritual and corporeal, angelic and terrestrial . . .” (981-982).³⁸

³⁷ “Philosophy, Cosmology, and the Twelfth-Century Renaissance” in *A History of Twelfth-Century Western Philosophy*, ed. Peter Dronke, Cambridge: Cambridge University Press, 1988. Also cf. Winthrop Wetherbee’s *Platonism and Poetry in the 12th Century*, Princeton: Princeton University Press, 1972.

³⁸ The whole of the first paragraph of this document reads: “Firmiter credimus, et simpliciter confitemur, quod unus solus est verus Deus, aeternus, et immensus, omnipotens, incommutabilis, incomprehensibilis et ineffabilis, Pater, et Filius, et Spiritus Sanctus; tres quidem personae, sed una essentia, substantia, seu natura simplex omnino. Pater a nullo, Filius autem a solo Patre, ac Spiritus Sanctus ab utroque pariter, absque initio semper et fine. Pater generans, Filius nascens, et Spiritus Sanctus procedens; consubstantiales et coaequales, coomnipotentes et coaeterni, unum universorum principum, creator omnium invisibilium et visibilium, spiritualium et corporalium, **qui sua omnipotenti virtute simul ab initio temporis utramque de nihilo condidit creaturam**, spiritualem et corporalem, angelicam videlicet et mundanam, ac deinde humanam quasi communem ex spiritu et corpore constitutam. Diabolus enim et daemones alii, a Deo quidem natura creati sunt boni, sed ipsi per se facti sunt mali: homo vero diaboli suggestionem peccavit” (*Sacrorum Conciliorum Nova et Amplissima Collectio*. Tomus Vigésimus secundus. Ed. Ioannes Dominicus Mansi. H. Welter: Paris, 1903).

The philosopher is likely to have a number of questions about the interpretation of this article. Is one to think that creation and the beginning of time are simultaneous? Or does time pre-date, as it were, the *ex nihilo* origin of creatures? The statement clearly recognizes a beginning of time, but this “beginning” might amount to a number of things. It might mean that the past is of finite duration. It might mean that a particular finite duration called “time” began after or in another duration, such as in the duration called eternity. It might mean that, though the past is of infinite duration, the Creator is, if not temporally, then at least causally antecedent to the world, and thus the world can be said to have a beginning. These possibilities will be considered at greater length later, and so for now it is sufficient to note two things. First, the words of the Fourth Lateran Council appear consistent with a variety of more precise metaphysical accounts. Second, the Council was generally interpreted as stating that the past was of finite duration.³⁹ This second point is of particular interest as we consider the development of views about the world’s origin from Philip to Thomas Aquinas.

The second factor which influenced Philip’s (and others’) interpretation of the Aristotelian texts on the origin of the world is a passage from one of the most influential works of the Middle Ages, the *Sentences* of Peter Lombard. He writes:

Scripture when introducing the creation of things in its first pages shows that God is the creator and that there is a beginning of time and of every creature, visible and invisible, stating in Genesis 1: *In the beginning God created the heaven and the earth.* And Moses,

³⁹ Dales (1990): “Regardless of ambiguities about the eternity of the world in the writings of some thinkers during the earlier Middle Ages, the Fourth Lateran Council in 1215 had declared the temporal beginning of the world to be an article of faith, thus limiting the scope of disputations on the eternity of the world. There was only one permissible solution to the question” (50). Potter (1993): “Concerning the eternity of the world, therefore, St. Thomas and the Dominicans, along with St. Bonaventure and the Franciscans, held that revelation teaches creation in time. The *locus classicus* for this position is the text of the Fourth Lateran Council (November 30, 1215) which, against the Albigensian heresy, defined as belonging to the Christian Faith that God alone has no beginning but always is and always will be; that the eternal God is the one and only principle of all things, ‘creator of all things visible and invisible, spiritual and corporeal; by His almighty power, at the beginning of time He created both orders of creation alike out of nothing, the spiritual and the corporeal world, the angelic and the material.’ Thomas, however, denied that it could be demonstrated by reason alone that this creation had a ‘beginning’ in the sense of a first member of the temporal series” (xiii).

inspired by the Spirit of God with these words, relates that the world was made by God the creator at a unique beginning, erasing the error of certain fellows who allege that there were many principles [*principia*] without a beginning. For Plato thought that there were three primal sources [*initia*], namely God, the exemplar, and matter, and the last uncreated, without a beginning, and that God is a sort of builder, not a creator. For a creator is one who makes something from nothing. And properly speaking, to create is to make something from nothing; but “to make” applies not only to effecting something from nothing, but from matter as well. . . . Aristotle posited principles [*principia*], namely matter and form, and a third called the efficient principle [*operatorium*]; he also posited that the world ever did and does exist.⁴⁰

This passage makes plain that harmony with the *Sentences* would be one incentive to interpret Aristotle as having held that the world was beginningless. Further, by its rejection of Aristotle’s position, the *Sentences* encouraged the Catholic philosopher to maintain that the past was finite in duration.

An Interpretation of Aristotle Consistent with Faith and Philosophy

In light of the Fourth Lateran Council and the *Sentences*, one possible position looks like a dead-end for the orthodox medieval philosopher: the view that past time is infinite in duration. So how was a philosopher to reconcile the teaching of the Church with that of Aristotle, who “seems to maintain that the world is eternal”?

The condemnations by the church hierarchy at Paris in 1277 targeted one unacceptable solution to the tension between the Church and the Philosopher. This solution belonged to those who “say that these things [about a beginningless world] are true according to philosophy but not

⁴⁰ Peter Lombard, *Libri Sententiarum* 2, d. 1: Creationem rerum insinuans Scriptura, Deum esse creatorem initiumque temporis atque omnium visibilium vel invisibilium creaturarum in primordio sui ostendit, dicens Gen. 1: *In principio creavit Deus coelum et terram*. His etenim verbis Moyses Spiritu Dei efflatus, in uno principio a Deo creatore mundum factum refert, elidens errorem quorundam plura sine principio fuisse principia opinantium. Plato namque tria initia existimavit, Deum scilicet, exemplar, et materiam, et ipsam increatam sine principio, et Deum quasi artificem non creatorem. Creator enim est qui de nihilo aliquid facit. Et creare proprie est de nihilo aliquid facere; facere vero non modo de nihilo aliquid operari; sed etiam de materia. . . . Aristoteles vero posuit principia, scilicet materiam et speciem, et tertium operatorium dictum; mundum quoque semper esse et fuisse.

according to the Catholic faith, as though there were two contrary truths.”⁴¹ In the marginalia of the condemnations, a scribe alleges that Bishop Étienne Tempier had in mind the scholarship of Boethius of Dacia and Siger of Brabant, both of whom were members of the Faculty of Arts at the University of Paris.⁴² Yet such was not the view of Boethius of Dacia and Siger of Brabant. Rather, Boethius and Siger were heirs to a position first expounded by William of Conches, Moses Maimonides and, in the early 13th century, by Philip the Chancellor, which was far from denying the law of non-contradiction or positing a two-tiered schema of truth. Their position represented a subtle interpretation of Aristotle’s work as well as a refined view of the respective roles of divine and natural science.

Richard Dales writes that “by far the most important of Philip’s positions was his interpretation of Aristotle’s teaching on the eternity of the world and the distinction he made between those things which are proper to theology and those which are proper to natural philosophy” (64). Dales is commenting on these words of Philip:

I answer that the arguments which Aristotle advances are to be understood as proving that the world is everlasting and not that it is eternal. Now I call that thing everlasting which is measured by time and the mobile.⁴³ Indeed, this is the extent of the argument in Aristotle’s philosophy, properly understood, to show that the mobile and motion and time are coeval, nor can the arguments taken from the principles of his philosophy show something further.⁴⁴

One interpretation of Aristotle’s arguments is that they prove that time cannot have a beginning; we have already seen this interpretation espoused in Peter Lombard’s *Sentences*. By the beginning of the 14th century, moreover, philosophers at Oxford dealing with this question

⁴¹ *Chartularium Universitatis Parisiensis*, ed. H. Denifle and E. Chatelain, 1 (Paris 1889) 543.

⁴² Dales, Richard C. “The Origin of the Doctrine of the Double Truth.” *Viator* 15 (1984) 169-179.

⁴³ I discuss the term “mobile” at the beginning of the section, “Arguments for and against the Eternity of the World”.

⁴⁴ “Respondeo ad hec intelligendum quod rationes quas ponit Aristoteles non sunt nisi ad probandum mundum esse perpetuum et non eternum. Illud autem dico perpetuum quod commetitur se tempori et mobili. Hec enim est intentio secundum proprietatem illius philosophie ut ostendatur mobile et motum et tempus esse coequeva, neque in amplius possunt rationes que ibi sumuntur ex principiis illius philosophie” (49).

concluded that Aristotle did argue that the world is beginningless.⁴⁵ But in the early days of the investigation of the Aristotelian corpus at Paris, a nuanced interpretation of Aristotle suggested itself as a way to avoid conflict between the Philosopher and the Church. If it could be shown that Aristotle had proven only that time and motion (change) have existed as long as the world has existed, then his position could be made consistent with the view that the past is finite in duration. As a defender of this interpretation, Philip claims that those who would use Aristotle to prove the eternity of the world have mistaken the aim of Aristotle's arguments, for the arguments prove that the world is everlasting (*perpetuum*), not that it is eternal (*aeternum*). To claim that the world is everlasting (*perpetuum*) is to say that the world has existed for all past time (and will exist for all future time). More formally, if the world is everlasting (*perpetuum*), then for every moment of time t , the world exists at t . This position is agnostic with respect to the question of the number of equal, discrete moments of time which preceded the present. I have already suggested that there may be ulterior motives for this interpretation of Aristotle, but Philip also has philosophical reasons for interpreting Aristotle as he does:

For if the mobile were eternal, motion as well as time would be eternal. But it did not belong to the original intent of Aristotle's philosophy to investigate the going forth of the first mobile into existence . . . but Aristotle did try to show that motion is from the immobile.⁴⁶

⁴⁵ For instance, Henry of Harclay, Thomas of Wylton, and William of Alnwick all hold that the eternity of the world is the teaching of Aristotle. Dales writes that "there were few if any masters by 1316 who would maintain that Aristotle had not taught the eternity of the world; indeed the most recent author Alnwick cites as holding this view is Aquinas, and as we will see, even Aquinas changed his mind in his last works" (218-219).

⁴⁶ "Quod si ipsum mobile esset eternum, motus esset eternus et tempus. Non fuit autem de proprietate illius philosophie investigare exitum primi mobilis in esse et sic separare mobile ab immobili, ut in planetis, sed quod motus sit ab immobili. Nec determinat quod motor ille sit prima causa. Sed supra XI Metaphysice determinat Commentator quod, sicut minorum corporum circularium motus est ab intelligentia, ita primi corporis a prima intelligentia. Et secundum theologum non videtur dicendum hoc esse primum mobile, sed nubeculam quandam vel lucem confusam moveri super faciem abyssi. Sed de hoc infra in tractatu de operibus sex dierum" (49). The last words of this passage refer to his subsequent discussion of the opinion of the Venerable Bede about the six days of creation: "Cum prima dies mane non habeat et mane de quo dicitur: 'Factum est vespere et mane, dies unus' non sit de prima die, quomodo istud recte dici potest? Et Beda de luce corporali respondet quod nubecula lucida secundum rotationem fecit ab initio diem et noctem, diem cum apparebat, noctem cum erat abscondita, et descendens ad occasum fecit vespere, revocata ad ortum mane" (134).

Philip here makes several claims. First, says Philip, Aristotle *did* mean to establish that motion has its cause in some unmoved thing (“motion is from the immobile” [motus sit ab immobili]). Second, according to Philip, Aristotle *did not* investigate creation itself (“the going forth of the first mobile into existence” [exitum primi mobilis in esse]). But third, Aristotle *did* investigate motion as it now exists. Philip’s reading of Aristotle depends on the view that there are two qualitatively different types of motion: the motion of the first mobile coming into existence and the motion of the world as observable at present.⁴⁷ From the present state of motion in the world, we can conclude that there has been motion for as long as there has been a world: “if the mobile itself were eternal, motion and time would be eternal” (*si ipsum mobile esset eternum, motus esset eternus et tempus*). But we cannot correctly conclude from the present state of motion and time that there has always been a mobile.

This interpretation, as I have mentioned, had support in the Latin medieval tradition, specifically in the work of William of Conches (c. 1090 - c. 1154).⁴⁸ Working with Augustine, the *Timaeus*, Boethius, and Aristotle as related through Boethius, William attempts to answer the question, “When was the world made?” William explains his position as follows:

For time could not have existed *before* because that out of which it came was the rest and the motion of moveable things, and thus there was time. Both the rest of moveable things and their motion could not have existed without the world. Neither therefore did time precede the world nor did the world precede time. With time, therefore, was the world made. If therefore one should come upon the phrase, “the world never began,” let it be understood thus: “the world never began” means that the world never began *in time*. . . . It does not, therefore, follow: “if the world never began, therefore it lacks a beginning,” because although it did not have a beginning ever, that is, in time, nevertheless it had a beginning with time. In short, *Time is coeval with the heavens*, that is, with the world.⁴⁹

⁴⁷ Of the first type of motion, Aquinas says that it is not properly called a motion or change, but creation.

⁴⁸ The influence of William of Conches is discussed in Dales 27-31. Also cf. “William of Conches” by Dorothy Elford in *A History of Twelfth-Century Western Philosophy*, ed. Peter Dronke, Cambridge: Cambridge University Press, 1988.

⁴⁹ Non enim ante tempus potuit esse quia ex quo fuit, fuit mora et motus rerum mutabilium, et ita tempus. Et illa mutabilium mora et ille motus sine mundo esse non potuit. Ergo nec tempus precessit mundum nec mundus tempus. Cum tempore ergo factus est mundus. Si ergo inveniatur “mundus non incepit unquam,” ita intelligatur: non incepit unquam id est non incepit in tempore. Nec negat mundum incepisse qui hoc dicit sed in tempore incepisse. Non

William's solution is to say that the world was not "ever" made, that is, at no *time* was it made. Instead, using Plato's phrase from the *Timaeus*, William says that "time, then, came into existence along with the Heaven" (38b7).⁵⁰ William's subtle reading of the phrase, "the world never began", which Philip takes up, provides one way to reconcile the purported arguments of Aristotle with the faith of the Church. With Aristotle, Philip can say that the world never began, while with the theologian, Philip can say that the world did have a beginning, albeit a non-temporal beginning.

In the *Guide of the Perplexed* (12th century), Moses Maimonides takes a similar though more developed view of Aristotle on the eternity of the world. Like William, Maimonides argues for a world with a beginning. Yet unlike William, Maimonides offers an explanation of why Aristotle's arguments are so successful on their own terms while they ultimately fall short of the truth. Maimonides writes:

No inference can be drawn in any respect from the nature of a thing after it has been generated, has attained its final state, and has achieved stability in its most perfect state, to the state of that thing while it moved toward being generated. . . . For we . . . believe that the world was generated in such and such manner and came to be in a certain state from another state and was created in a certain state, which came after another state. Aristotle, on the other hand, begins to contradict us and to bring forward against us proofs based on the nature of what exists, a nature that has attained stability, is perfect, and has achieved actuality. As for us, we declare against him that this nature, after it has achieved stability and perfection, does not resemble in anything the state it was in while in the state of being generated, and that it was brought into existence from absolute nonexistence. Now what argument from among all that he advances holds good against us? For these arguments necessarily concern only those who claim that the stable nature

ergo sequitur: si non incepit unquam, ergo caret principio, quia etsi non habuit principium unquam, id est in tempore, habuit tamen principium cum tempore. Et hoc est: *Tempus coequevum celo*, id est mundo.

⁵⁰ p. 76. *Timaeus, Critias, Cleitophon, Menexenus, Epistles*, trans. R. G. Bury, Cambridge, Massachusetts: Harvard University Press, 1961.

of that which exists, gives an indication of its having been created in time.⁵¹ I have already made it known to you that I do not claim this (295-296).⁵²

The substance of Maimonides' argument is that, if something like the Judaeo-Christian account of creation is true, there is, first of all, nothing in the present state of the world that would betray this fact. Consequently, Aristotle could be right about past time, as far as knowledge of the present state of the world and reason can take a philosopher. Yet he would ultimately be mistaken if he had meant to claim that any beginning of the world was impossible, given the present state of things. For a beginning is possible for such a world as the actual one, Maimonides argues, provided that the change of creation is radically different from the changes or motions observable in the world subsequent to its inception. Thus, those who were inclined to defend Aristotle's importance while maintaining a commitment to Judaeo-Christian orthodoxy on creation also tended to believe that Aristotle's arguments about beginningless past time were meant by him as non-demonstrative, that is, Aristotle did not offer them as arguments from necessary premises to a necessary conclusions.

I note these proposals as precursors to the more radical possibility which Aquinas will defend concerning the origin of the world, namely that it might be both beginningless and created. In William of Conches, Moses Maimonides, and Philip the Chancellor, the idea remains in germ. The concepts involved were only loosely defined and so could accommodate a variety of interpretations when pushed upon. On the one hand, there is the position of William,

⁵¹ By "created in time" Maimonides refers to that position, which I have already discussed in connection with William of Conches, that denies that time and the world came into existence simultaneously.

⁵² I have quoted from *The Guide of the Perplexed*, Volume II. Moses Maimonides. Trans. Shlomo Pines. The University of Chicago Press: Chicago, 1963. Maimonides wrote the *Guide* in Arabic. Dales supplies the Latin translation as found in *Rabbi Mossei Aegyptii Dux seu director dubitantium aut perplexorum* (Paris, 1520): "Nos qui credimus . . . quod mundus creatus fuit secundum talem et talem formam, et quiddam fuit factum ex alio, et quaedam creata post alia. Aristoteles vero volens destruere fidem nostram, inducit probationes contra nos de natura entis perfecti in actu; de quo concedimus quod post statum suum atque perfectionem non assimilatur in aliquo ei quod erat in hora creationis, quia est post privationem absolutam. Quae autem ratio de universitate rationum suarum firmabitur contra nos; illa vero sequerentur concedenti quod natura huius esse quod modo est, demonstrat super esse suae renovationis" (46).

Maimonides and Philip: the world's past is finite, though the world is everlasting, that is, it exists at every time. William and Philip apply the term "everlasting" (*perpetuum*) to those things whose existence has a beginning but no end. William writes: "Since indeed the world ought not to be called eternal, therefore let us explain how it ought to be described, namely as everlasting, though the creator is eternal; and something is everlasting which has a beginning and lacks an end" (136).⁵³ On the other hand, Aquinas will argue that the world might have been infinite in its past duration, and yet still rightly described as everlasting (and not "eternal") because only God is eternal.

I turn now to consider both the particular arguments which Philip understood as coming from Aristotle as well as his responses to them.

The Arguments from Aristotle (I)

Drawn from Aristotle, the following arguments from Question III are concerned with motion, change, and the conclusions which seem to follow from the motion and change observed in the world. Philip presents these arguments as reasons one might have for thinking that the world is eternal. His own arguments to the contrary come in response to these.

The first argument is taken from change [*mutatio*]; we speak about a change, moreover, which is from non-existence into existence.

[Assumption for *reductio*:] On the assumption that the motion of the first mobile [*primum mobile*] did not always exist, whenever the mobile was changed, either there existed some new disposition in the mover or in the moved.

[Dilemma:] For newness in motion either comes from an alteration in the mobile or in the motive agent.

⁵³ "Quoniam quidem mundus non debet dici eternus, itaque ostendamus qualiter debeat vocari, scilicet perpetuus, creator vero eternus; et est perpetuum quod habet principium et caret fine" (*In consolationem philosophiae commentarius*, ed. J. M. Parent, in *La doctrine de la creation dans l'école de Chartres* (Ottawa, 1938), p. 133-135.)

[1] But it cannot come from the motive agent, because the same thing, as long as it is disposed in the same way, naturally produces always the same thing. Since a motive substance is the first cause, therefore, it is natural that it always produces the same thing. No more *now* than *before*, therefore, is motion from that substance.

Likewise, [2] neither is this motion because of some new disposition in the mobile; for the mobile is a uniform body not now more disposed to motion than before. Indeed, since a spherical body is not imbalanced, it is always ordered towards circular motion. So to the degree that motion comes from the mobile there will always be motion as long as the mobile exists. Once motion exists, generation and corruption are continual, since motion is continual and matter is everlasting [*indeficiens*].⁵⁴ Therefore, the world is everlasting [*perpetuus*].

[Proof of the minor premise:] It seems to be proven that a mobile body always exists and that matter is everlasting [*indeficiens*]. For if it were posited at some time not to exist—this claim would contradict the aforesaid proposition, that the same thing, when disposed in the same way, etc. Therefore, both the first mobile and matter are eternal [*ab aeterno*].⁵⁵

This is a neatly structured argument, and it actually represents an expansion of a more compressed argument that Aristotle gives in *Physics* 8.1. He writes: “Now if there was a becoming of every movable thing, it follows that before the motion in question another change or motion must have taken place in which that which was capable of being moved or of causing motion had its becoming” (Hardie & Gaye in Barnes 419).⁵⁶ Philip’s expansion (or the source

⁵⁴ I am not entirely satisfied with the translation of *indeficiens* as “everlasting”, but I think that the word gets the general idea right. Another possibility is that *indeficiens* be translated as “unfailing” as though matter (*materia*) were a source or supply. But while this might be true besides, such an interpretation does not seem relevant to Philip’s summary of the argument, for which it suffices that there be *some* matter (and the same matter) always in existence, whether there be a finite amount of it or an endless supply.

⁵⁵ Prima autem ratio sumitur a mutatione; loquimur autem de mutatione quae est de non esse in esse. Posito quod non semper esset motus primi mobilis, aliquando mutatum esset mobile vel aliqua esset nova dispositio aut ex parte motoris aut moti. Innovatio enim in motu vel est ex parte innovationis in mobili aut in motivo. [1] Sed ex parte motivi non potest esse; idem enim semper similiter se habens innatum est semper facere idem. Cum ergo substantia motiva sit prima causa, ergo innata est semper facere idem. Ergo non magis nunc quam prius est ab ipsa motus. Item [2] nec hoc est propter aliquam dispositionem novam ex parte mobilis; mobile enim est corpus uniforme non magis se habens nunc ad motum quam prius. Cum enim sit corpus sphericum non habet contrarium, sed semper ordinatum est in motum circularum. Quantum ergo est ex parte mobilis semper quamdiu erit mobile erit motus. Motu autem existente erit generatio et corruptio continua, cum motus sit continuus et materia indeficiens. Ergo mundus perpetuus. [*Argumentum pro propositione minori:*] Quod autem corpus mobile sit semper et materia indeficiens probari videtur. Si enim ponatur aliquando non esse, non videtur per propositionem supradictam: idem similiter se habens, etc. Ergo primum mobile ab eterno et materia ab eterno (47-48).

⁵⁶ “εἰ μὲν τοίνυν ἐγένετο τῶν κινητῶν ἕκαστον, ἀναγκαῖον πρότερον τῆς ληφθείσης ἄλλην γενέσθαι μεταβολὴν καὶ κίνησιν, καθ’ ἣν ἐγένετο τὸ δυνατὸν κινηθῆναι ἢ κινήσai” (*Physica* 251a17-20).

from which Philip draws this expansion) does shed some light on what Aristotle is up to, but a word about the terminology of the argument is in order before we consider its steps. First of all, the *primum mobile* or first mobile is the outermost sphere of the created world, that is, of the whole cosmos. The movement of the *primum mobile* moves, in turn, the other spheres which are concentrically nested within the *primum mobile*. The motive agent or substance (*substantia motiva*) is that which sets the *primum mobile* or outermost sphere in motion; the motive agent is not itself in motion, rather it elicits the motion of the *primum mobile*. The argument need not be any more specific about the nature of the motive agent. To say that “generation and corruption are continual” means that the cycles of nature, through birth, maturity, and death, are perpetual.

As should be clear from the labels I have added to Philip’s text, the first argument proceeds by a *reductio ad absurdum* and reaches the conclusion that the motion of the first mobile always existed, via the elimination of possibilities in the dilemma (labeled numerically in the quoted text). The assumption for the *reductio* is as follows:

On the assumption that the motion of the first mobile did not always exist, whenever the mobile was changed, either there existed some new disposition in the mover or in the moved.

The dilemma begins with the horn: the newness of motion cannot be from the motive agent (*innovatio . . . non ex parte motivi non potest esse*). By “newness of motion”, I understand Philip to mean a change from non-motion to motion. The principle which grounds this claim about newness of motion not coming from the motive agent is that “the same thing, as long as it is disposed in the same way, naturally produces always the same thing” (*idem semper similiter se habens innatum est semper facere idem*). This principle comes from Aristotle’s *De Generatione et Corruptione* 336a27: “. . . [N]ature by the same cause, provided it remain in the same

condition, always produces the same effect . . .” (551).⁵⁷ There is no worry that the motive substance or agent may be any differently disposed than it ever was, for “the motive agent” refers to Aristotle’s prime mover which, by definition, is ever the same. The reasoning of the statement following the citation from Aristotle is clear: either the motive substance was always eliciting motion from the substances outside itself or else it never was and is not now. But since it is clear that it is now eliciting motion (because the world exists and is in motion), the first substance must always have been doing so. In short, it is impossible that it was idle at one time and active in eliciting motion at another.

The second horn reaches a similar conclusion about the mobile: because of the mobile’s composition (it is spherical and so arranged as to continue in circular motion), once it begins to move, its movement will not cease. Yet the content of the second horn as stated is inadequate: it could be used to establish that the world is endless in the direction of the future, but it says nothing about how the ball, so to speak, got rolling. So a proof of the minor premise for the syllogism of the second horn is subjoined. The proof amounts to hardly more than a statement that to assume that the mobile did not always exist would contradict the principle already cited from *De Generatione et Corruptione* 336a27. But this “proof” seems only to beg the question by assuming the mobile and then reiterating that it would ever continue as it was.⁵⁸

The Arguments from Aristotle (II)

The next argument Philip puts down as follows:

⁵⁷ *The Complete Works of Aristotle: Volume One*. Ed. Jonathan Barnes. Princeton University Press: Princeton, New Jersey, 1995. The Greek text: “τὸ γὰρ αὐτὸ καὶ ὡσαύτως ἔχον ἀεὶ τὸ αὐτὸ πέφυκε ποιεῖν.”

⁵⁸ Or perhaps the argument works because it assumes, though does not state explicitly, that something precedes the mobile and it is this preceding thing which always produces the same effect, namely the mobile, which has a relation to this preceding thing like to that between the footprint and the eternal foot in the sand. In any case, the construal of this argument is not overly important as Philip responds to it and the one that follows more by saying that they are *non ad rem* rather than that their claims or reasoning are mistaken.

The second argument is that change does not precede change *ad infinitum*. If a change, therefore, were posited before the motion of the first mobile, there would be a change of that mobile from non-existence into existence. This change [*mutatio*], however, does not occur without some change [*mutatio*] in the agent effecting it.⁵⁹ For if there is one acting who was not acting before, it follows that there is some new disposition. But it, too, had not that disposition at a prior time; therefore a change happened, in turn, with regard to *that* agent and one that was not happening before; accordingly, there is some new disposition; therefore *some* change preceded *that* change and so on *ad infinitum*—or motion is everlasting (48).⁶⁰

This argument takes the same initial condition as the last: if change/motion had a beginning (call it C_0), there would have to be a prior change (C_{-1}) to bring about C_0 – and so on, beginninglessly.⁶¹ But now the focus shifts to a new and equally untenable conclusion: if we wish to reject the claim that motion is everlasting, we must also be prepared to live with an infinite regress. Further, the force of this argument is that accepting such an infinite regress is untenable; the untenability is not argued for explicitly, but is stated in the first line of the quoted passage. One way of unpacking the supposed problem of change preceding change *ad infinitum* is to say that the initial agent is never found and so there would be, *per impossibile*, an essentially ordered series without a first element. The alternative we are forced to accept, if the argument works, is that there never was a first change from non-motion to motion: motion is everlasting.⁶²

⁵⁹ Is this “change” the same as the “change” Philip speaks of in the first argument from Aristotle? There he had said that, the first argument “is taken from change; we speak about a change, moreover, which is from non-existence into existence.” I think that the second clause in the quotation is meant to qualify “change” in that passage: Philip is there speaking about a particular type of change, the change from non-being to being. So he is not speaking about all change, simpliciter, such as the change in a substance when it gains an accidental property.

⁶⁰ Item, non precedit mutationem mutatio in infinitum. Si ergo poneretur mutatio precedere motum primi mobilis, esset mutatio de non esse in esse ipsius mobilis. Hec autem mutatio non fit sine alia mutatione ipsius agentis; si enim est agens et non prius erat, secundum aliquam dispositionem est novam. Sed iterum illam prius non habuit; ergo facta est iterum mutatio circa ipsum et non prius fiebat; ergo secundum aliquam dispositionem novam etc.; ergo prederet illam mutationem et sic in infinitum aut motus est perpetuus (48).

⁶¹ Thus this argument draws upon the same text in *Physics* 8.1: “Now if there was a becoming of every movable thing, it follows that before the motion in question another change or motion must have taken place in which that which was capable of being moved or of causing motion had its becoming” (Hardie & Gaye in Barnes 419).

⁶² This is not necessarily the way in which Philip was thinking of the problem, but I offer it as an explanation of how this argument may be made to look plausible.

Some – I cite William Rowe below – have used a distinction between essentially and accidentally ordered series to explain the claim, as for example in Aristotle’s Prime Mover argument, that an infinite regress of the relevant type is impossible. The claim is not that any infinite series is impossible, only that an essentially ordered infinite series is impossible. Of the accidentally ordered series which are possible, one example (in an Aristotelian world) is the type in a biological species. There is no first member of a species; rather, the species is beginningless, realized in an unending sequence of births and deaths. If Aristotle had meant to oppose any type of infinite regress, he could not have consistently maintained the beginninglessness of species. An essentially ordered series, however, is one in which the existence of a given member of the series depends upon the simultaneous existence of every preceding member. For example, the stone does not move if the stick is removed, and the stick does not move if the muscles of the arm cease to flex, and the muscles do not flex if neurons in the brain cease to fire, and so on (where these processes are understood as simultaneous). On the other hand, in an accidentally ordered series, the members of the series may stand in some loose relation to each other, sometimes connected only by relational properties, such as the property of being the 399th and 400th hammer made by the same smithy. If the 399th hammer goes out of existence, the existence of the 400th remains unimpaired. Likewise, in a species, there is an accidental ordering: the child may be alive and well even if its parents and grandparents are dead.

There are two reasonable arguments (as it appears to me) by which the existence essentially ordered series may be shown to be impossible. The first is given by William Rowe:

Now if C is causing B to be causing A to exist, then since we are operating within an essentially ordered series it also will be true that C is now causing A to exist. C, therefore, will be exhibiting that very sort of causal activity we are trying to explain. And if C is the first member of the series, we might be able to explain why the causal activity

causing-A-to-be-now existing is now going on by reference to C. However, if C is an intermediate cause, if some other thing is now causing C to be causing A to exist, then we cannot find the explanation for the fact that this activity is going on by reference to C. What then if the series progresses to infinity? Each member of the series will be right now exhibiting the causal activity we are trying to explain. It will be true that every member of the series is exhibiting the causal activity in question and also true that the fact that the causal activity is going on cannot be explained by any member of the series. For any member we select, it will be true that it is caused to exhibit the activity in question by some other member and, therefore, true that we cannot explain the fact that this sort of causal activity is going on in the universe by reference to that member. . . . [I]f the series proceeds to infinity there will be no explanation of the fact that a certain sort of causal activity [- causing A to be now existing -] . . . is going on in the world (34-35).⁶³

Norman Kretzmann appends this conclusion to Rowe's explanation: "And, therefore, I would add, there could not in that case be a philosophically satisfactory, metaphysical explanation of the fact that A – or S – is now continuing to exist. A's – and, therefore, S's – existing now would be a brute fact, theoretically inexplicable" (65). Philip and Aquinas were two medievals who were not inclined to take the "brute fact" approach to the existence of the universe.

There is also a second way one might push against the plausibility of the existence of an essentially ordered series. For the existence of an essentially ordered and infinite series, an infinite number of things would have to be actual. But this runs contrary to the notion, embraced by some, that the simultaneous existence of an actually infinite number of things is impossible. While no one makes difficulties about the existence of *potential* infinities, the impossibility of an actual infinity was a common place of philosophical and mathematical thought up until the work of Georg Cantor. In assessing this notion, a position on the metaphysical status of mathematical objects is important. Though there is nothing mathematically inconsistent in the concept of an infinity of, say, natural numbers, this conceptual consistency does not decide the question of their metaphysical status. If these numbers exist as extra-mental objects, then this second option for objecting to essentially ordered infinite series may have to be rethought because at least one

⁶³ Rowe, William L. *The Cosmological Argument*. Princeton, N.J.: Princeton University Press, 1975. Cited in Norman Kretzmann's *The Metaphysics of Creation*, New York: Oxford University Press, 1999, pages 64-65.

instance, the natural numbers, contradicts it. But if the natural numbers are not extra-mental realities, it is not clear where we should look to find another instance of an extra-mental collection of things which is actually infinite. If this is the case, there is at least no obvious counter-example by which to deny the view that an infinite collection of extra-mental things – and relevant to this case, causes or agents – cannot be instantiated in the world.⁶⁴

It is this kind of thinking about essentially and accidentally ordered series by which the argument is most plausibly defended, nor would Philip have disagreed with the principle itself, i.e. that there cannot be an infinite regress among agents in a causal series. Thus the argument does well to use this area of common ground as almost the sole basis for a conclusion which Philip does not want to accept.

The Arguments from Aristotle (III)

After the second follows a third and related argument:

Moreover, if before every motion there is a motion [*motus*] or a change [*mutatio*] (as seems proven), it is better to posit one infinity which is a unicity [*secundum individuum*] rather than a multiplicity [*secundum numerum*], seeing that nature prefers fewer means. For this reason, we both exhale, inhale, and spit with the same organ. Therefore, motion is infinite.⁶⁵

This argument builds on the one which had preceded it by starting from the dilemma which the first argument posits: motion is everlasting *or* there is a change – somewhere, somehow – which first brought about motion. I take the strength of the argument to lie in an appeal to an inductive

⁶⁴ But even if the natural numbers are an instance of an actually infinite, extra-mental group of things, someone who wanted to use this principle in the present case might simply retrench and say that an actually infinite collection of *extended* objects is impossible, though perhaps there might be such a collection of non-extended things.

⁶⁵ Item, si ante omnem motum est motus vel mutatio, ut probatum videtur, melius est ponere unum infinitum secundum individuum quam secundum numerum, quia natura per pauciora se expedit. Ideo eodem organo exspiramus et inspiramus et spuimus. Ergo motus est infinitus (48).

principle observed in Nature: she prefers fewer means.⁶⁶ As the example illustrates, rather than multiplying means, Nature accomplishes multiple tasks by a single instrument. Invoking the same principle applied at a more elemental level, the argument speculates that even though the motion of an everlasting world is infinite, it remains, as it were, one thing. In quantity, the motion of an everlasting world is infinite or unending, but it is qualitatively identical.

The distinction on which the argument relies seems to be between the motion of a globe as it spins continuously and the motions or changes preceding the globe's being set in motion. As the globe spins continuously, I can mark the number of rotations completed; yet while each of these rotations is a whole in itself and unique, the completion of a rotation is really an artificial boundary or unit, just as a line segment may be divided endlessly though the line segment itself is some finite distance in length. Just as we would refer to a line segment of three inches as *one* line segment, though it is susceptible of infinite division, so the motion of the globe as it spins continuously is one, though the rotations it has completed may be infinite. On the other hand, the existence of new dispositions preceding each other *ad infinitum* is a multiplicity, like the changes, motions or new dispositions which precede the globe's being set in motion by my hand. Of course, when I spin a globe on its stand, there is not an infinity of prior dispositions or motions in me, but it is these unique instances of motion, regardless of their quantity, which the argument maintains we must take as a multiplicity.

Apparently, this argument is aimed at the person who thinks that, though the distinction between accidentally and essentially ordered series may be interesting, an essentially ordered series with an infinite number of members is logically possible. Since this person will think that both an infinite number of new motions and, *a fortiori*, an infinite motion is logically possible,

⁶⁶ Wicki suggests that this principle may come from Boethius' *De Consolatione Philosophiae* II, prosa 5, versus 16: "Paucis enim minimisque natura contenta est . . ."

this argument supplies a non-logical principle for thinking that motion is everlasting rather than the putative alternative, that a finite motion was preceded by an infinite number of different changes or new dispositions.

The Arguments from Aristotle (IV)

A final argument runs as follows:

Further, from that point, one can prove the same thing. If that motion came about, it went from non-existence into existence. But going from non-existence into existence is measured by time. The time of the motion of the first mobile, therefore, would precede another time measuring the change; about both the motion and the time [involved] one wonders: if time came about, it went from non-existence into existence; moreover, a transition of this sort occurs in time; one time, therefore, would precede another time and so on *ad infinitum*. Therefore, time is everlasting; wherefore motion is also, since the measurement of motion is “before and after.”⁶⁷

The course of this argument tends to suggest, I think, that Philip had an indirect access to Aristotle and was not reading the very words of the *Physics*. The argument seems to be suggested by a single question in *Physics* 8.1, “How can there be any before and after without the existence of time?”⁶⁸ But from there, Aristotle builds an argument for beginningless motion/change on the basis that everyone, except for Plato, maintains that time is uncreated; and since time entails or requires motion, motion itself must be beginningless. This is also the point at which Aristotle introduces the argument that the “now” is the end of the past and the beginning of the future, and so there cannot be a first “now” because the “now” entails some

⁶⁷ Item, ex ipso nunc idem probatur. Si motus ille factus est, exiit de non esse in esse. Sed exitus de non esse in esse mensuratur secundum tempus. Ergo tempus motus primi mobilis precederet aliud tempus mensurans mutationem et de ipso et de tempore queritur: si tempus factum est, exiit de non esse in esse; exitus autem huiusmodi est in tempore; ergo tempus precederet tempus et ita in infinitum. Tempus ergo perpetuum; quare et motus, cum sit numerus motus secundum prius et posterius.

⁶⁸ “πρὸς δὲ τούτοις τὸ πρότερον καὶ ὕστερον πῶς ἔσται χρόνου μὴ ὄντος;” (*Physica* 251b10-11).

previous moment of time.⁶⁹ This Aristotelian argument seems to be latent in what Philip cites, but the approach is slightly different.

Philip's version takes the tack of granting the assumption that motion came about – it went from non-existence into existence. Yet such a transition, such a change, by definition, requires time to measure that change, a before and an after. As long as changes are assumed to occur, such as a change from non-existence into existence, time must also be assumed to exist by which to measure those changes. So if new movements precede each other *ad infinitum*, there will also be time *ad infinitum*, at least into the past.

Thus far we have the arguments which Philip sees as coming from Aristotle's works of natural philosophy. I have already explained Philip's overarching response to these arguments. Philip thinks that the principles endorsed by Aristotle have been taken to prove more than was the intention of their author. The Philosopher did not prove or claim to prove that the world was eternal. Instead, he offered conjectures about past time based on observations of motion/change in the world as it now is. It is another question altogether, claims Philip, how the motion of the world first came to be.

How the Arguments from Aristotle are Rightly Understood

Although Philip's primary response to the arguments taken from Aristotle is to explain how these arguments may be taken to say more than Aristotle meant, Philip does undertake a limited point by point rebuttal. I turn now to an examination of Philip's individual response to the arguments to illustrate how Philip put his interpretation of Aristotle into practice.

⁶⁹ "Now since time cannot exist and is unthinkable apart from the now, and the now is a kind of middle-point, uniting as it does in itself both a beginning and an end, a beginning of future time and an end of past time, it follows that there must always be time; for the extremity of the last period of time that we take must be found in some now, since in time we can take nothing but nows" (Hardie & Gaye in Barnes 420).

Philip begins by addressing the principle taken from *De Generatione et Corruptione* used in “The Arguments from Aristotle, Part I”.

We say that the proposition, “the same thing is disposed similarly, etc.”, is not true, except when understood of creatures; and in this way it is understood by Aristotle (rightly interpreted) in his teaching about natural (not voluntary) motion in the book, *De Generatione et Corruptione*.

For if it were understood universally of the creator and the creature, then it ought to be said either that no multitude has come forth from the Prime Mover or that whatever has come forth has come forth beginninglessly.

From this it would follow that all souls have existed beginninglessly, souls which faith states to be created and infused at the same time. But if they had existed beginninglessly, what would effect their conjunction with bodies, unless the first essence, though similarly disposed, effected dissimilar things? The sun also illuminates that which was not before without a change in itself. So it seems to me that the proposition, “the same thing is disposed similarly, etc.”, is not true except of those things which, when they act, are changed.⁷⁰

Philip contends that the principle from *De Gen. et Corr.* must be interpreted in light of a distinction between the creator and the creation. He suggests that the creator is capable of different actions at different times without prejudice to the creator’s immutability. If God were incapable of doing one thing now and a different thing later, then everything done by God would be necessarily beginningless. Thus God would be incapable of creating and infusing into new human bodies new human souls as the exigencies of reproduction require. In other words, the theist is likely to think, God must be able to create at one time, cease to create at a second, and then to create again at a third.

⁷⁰ Et dicimus quod illa propositio: idem similiter se habens etc. non est vera nisi cum sumitur de creaturis et ita sumitur ab Aristotele secundum proprietatem doctrine in libro De generatione et corruptione de motu naturali, non voluntario. Si enim sumeretur universaliter ad creatorem et creaturam, oporteret dicere nullam multitudinem processisse a Primo aut quecumque processerunt ab eterno processisse. Ex quo sequeretur omnes animas ab eterno extitisse, quas ponit fides creari et infundi simul. Quod si ab eterno extitissent, quid faceret earum coniunctionem cum corporibus, nisi prima essentia similiter se habens dissimilia faceret? Sol etiam illuminat quod non prius sine sui mutatione. Unde mihi videtur quod non est vera illa propositio: idem similiter se habens etc. nisi in eis que cum agunt patiuntur.

Of course, it would be better if the theist could preserve this position without begging the question. There may also be a worry that Philip's reply implies a view of God too intimately entwined in the temporal order. Philip's reply seems to suggest that God is inside of time, so that God can be said to do different things at different times. Philip both addresses this worry and avoids begging the question with this further explanation: "The sun also illuminates that which was not before without a change in itself." Philip offers a metaphor in explanation of an eternal and unchanging God's actions within time. From a temporal perspective, God's actions appear plural and diverse. But just as the sun is not changed when the buildings and trees illumined throughout the day are changed, so God remains unchanged in eternity even while God's unique will and action produces multiple effects at various locations on the temporal spectrum. Thus, Philip is with those who say that God is not the type of thing which when it acts – that is, when diverse effects follow from its power – is changed.

Philip continues his rebuttal:

So what's the point? That on this understanding, the argument of Aristotle does not go through. For if the Prime Mover is something changing [other things] without changing itself (which agrees with the saying of James 1[17]); if that thing under the Prime Mover is changeable [i.e., the first mobile], [the Prime Mover] could change [other things] at some time and at another not; therefore, motion and the mobile are not equal in past duration.⁷¹

I answer: it *could* have changed [other things] at one time and not another, but it did not turn out this way. For there would be no reason why it should change [other things] *now* rather than *then*; in these matters, indeed, there is not a choice [to act] beyond that given by reason. In truth, the will of every creature is subject and does that which either it was doing previously or willed previously unless there is some newness, which is not a cause but an incitement; for [creature's will] receives impressions from the body, from exterior things, from heavenly things, and from divine inspiration. But the divine will is above, not subject, without newness, because what it wills, it effects without any incitement.⁷²

⁷¹ James 1:17: "omne datum optimum et omne donum perfectum desursum est descendens a Patre luminum *apud quem non est transmutatio nec vicissitudinis obumbratio.*" Douay-Rheims: "Every best gift, and every perfect gift, is from above, coming down from the Father of lights, with whom there is no change, nor shadow of alteration."

⁷² Sed quid? Secundum hanc solutionem non procedit ratio Aristotelis. Si enim Primum est movens sine sui mutatione est iuxta quod dicitur Iac. I; si sub primo illud est mutabile, ergo potuit aliquando movere et aliquando

The conclusion reached at the end of the first paragraph is insufficiently defended. The right thing to say, given the premises, is that the past duration of motion and the mobile are *possibly* unequal. This is the point onto which Philip latches when he begins “I answer, etc.” Philip rejects an account of the world’s origin in which the stuff of the world (the mobile) comes into existence but is not immediately set in motion by the Prime Mover. The reason he gives for rejecting this account is that the time chosen for the beginning of the world’s motion, if it were not to be simultaneous with the coming into existence of the mobile, could not be sufficiently explained. And since God does not act without a (good) reason, the mobile and motion are equal in past duration. A few paragraphs later, Philip offers this conclusion:

And so it must be said that the mobile is not eternal but created without a change in the one creating it, as we distinguished about the non-subject will, and as quickly as it was created it was moved, although it could have been otherwise if God had wished that it not be moved; but because that at rest does nothing, one assumes that it had motion immediately. Nevertheless, say as a theologian that the little cloud was moved over the face of the abyss.⁷³

How much simpler things are for the theologians!

Philip’s discussion here points to some of the abiding questions or puzzles in the metaphysics of creation. A view that motion and the mobile are equal in past duration at first appears to remove worries which would otherwise arise about why God created when he did rather than earlier or later. If, on the other hand, the existence of the mobile precedes the existence of motion, it would be arbitrary as to when the motion comes into existence; as Philip

non; ergo motus et mobile non sunt coequeva. Respondeo. Potuit quidem aliquando movere et aliquando non. Sed ita non fuit. Non enim esset ratio quare nunc moveret quam tunc; in his autem non est voluntas praeter rationem. Voluntas quidem omnium creaturae subiecta est et non est agens quod non prius egit vel voluit nisi secundum aliquam innovationem, non quae sit causa sed incitatio; suscipit enim impressiones a corpore, ab exterioribus, a supracelestibus, ab inspiratione divina. Sed divina voluntas supra est, non subiecta, sine innovatione, quia vult operatur absque incitatione quacumque.

⁷³ Unde dicendum mobile non esse eternum, sed creatum sine mutatione creantis, ut distinximus, de voluntate non subiecta, et quam cito creatum est, motum esse, licet aliter potuisset esse si Deus voluisset quod non moveretur; sed quia otiosum nihil agit, praesumitur quod motum habuit statim. Dic tamen secundum theologum nubeculam moveri super faciem abyssi.

says, “in these matters, indeed, there is not a will without reason.” Yet it still seems to be the case that an everlasting world, as Philip conceives of it, is possibly older or younger than it in fact is. If the world is finite in past duration, it is, say, 6 billion years old. Although there seems to be nothing which would prevent it from being the case that the world is 6.1 billion years old, yet how a situation different from the actual one would obtain is not clear. To say that such a situation would come about if God had created the world earlier is incoherent because, in the view under discussion, God did not create the world at any time; there was neither an earlier nor a later time at which God might have created it. One way to avoid this puzzle is to adopt a view which Philip would not have countenanced, i.e. to say that the world is everlasting in that there is no first moment of time. This move would not be a complete rejection of a Philip-like position, however, for one could still maintain a distinction between the eternal order, in which God lives, and the temporal order, in which the world exists.

Part II: Philip on Tempus, Aevum, and Aeternitas

Philip’s opposition to the “eternity” of the world is twofold. In the first place, as we have seen, Philip rejects the doctrine that the world is beginningless or infinite in past duration. In making his case against this doctrine, moreover, he explains why speaking of the “eternity of the world” is a phrase altogether misleading. He does this by making use of the following technical language. Philip distinguishes between that which is *perpetuum* or everlasting and that which is *aeternum* or exists in eternity (*aeternitas*). Second, he distinguishes between time (*tempus*) and the *aevum*. The *aevum* is the measure of those things which have a beginning but no end, while time is the measure of those things which have a beginning and an end.

“Nothing Created Can Be Eternal”

Philip prepares the ground for giving his definitions of time, *aevum*, and eternity by first remarking the following objection:

There is an eternal procession from something in the unity of essence; just as conversely there is a non-eternal procession in the diversity of essence; the middle ground between these is an eternal procession in the diversity of essence. (I call “eternal” that which does not have its existence after not existing.)

Since therefore the extremes have been posited and there is nothing incomplete in the order of the universe, there will be a middle procession, if it is at all possible.

If it should be said that it is not possible, one asks: “For what reason?” If it is possible and nothing is incomplete in the order of the universe, then it exists. But it is clear that it cannot exist except as a created essence. Therefore there will be some eternal, created essence.

For example, if brightness comes from a light, then an eternal brightness would come from an eternal light, and yet it would not be of the same essence with the light. It seems that Plato thought thus about matter, which he calls “wood” and supposes to be uncreated, so that there is an eternal procession of it from the Prime Mover in the diversity of essence.⁷⁴

What this objection tries to show is the appropriateness of the existence of a created, beginningless thing, based on a principle of plenitude. If there is an uncreated beginningless thing and a created, non-beginningless thing, why not a created, beginningless thing? A beginningless world would fit this description nicely, and so, the argument runs, it is reasonable, especially with addition of other, more demonstrative arguments, to conclude that this world is beginningless.

⁷⁴ “Sed obicitur. Est processio eterna ab aliquo in unitate essentie; quasi ex opposito est processio non eterna in diversitate essentie; medium inter hec processio eterna in diversitate essentie, et eternam dico que non est post non esse. Cum ergo extrema posita sint et nichil est incompletum in ordine universi, erit processio media, si possibile est eam esse. Si dicatur quod non est possibile, queratur propter quid; si possibile est et nichil est incompletum, ergo est. Sed constat quod non potest esse nisi essentia creata. Erit ergo aliqua essentia creata eterna. Verbi gratia si splendor procedit a luce, ex luce eterna splendor eternus et tamen non esset eiusdem essentie cum luce. Sic videtur Plato sentire de materia que ab ipso dicitur silva et ponitur ingenita, ut sit eius processio eterna a Primo in diversitate essentie” (51).

The example given by Philip of an eternal light shining from an eternal light source recalls *The City of God* Book X, Chapter 31.⁷⁵ In X.31 Augustine is wrestling with an interpretation of the *Timaeus*. On the one hand, “Plato distinctly affirms that [certain gods have] come into being and have a beginning” (419).⁷⁶ On the other hand, the Platonists, Augustine reports, “have discovered a way of interpreting this statement, by asserting that this refers not to a beginning in time, but to a relation of dependence.”⁷⁷ The distinction is brilliant and has lost none of its relevance:

“If a foot,” they say, “had been from all eternity planted on the dust, the print of it would always be underneath; but for all that no one would doubt that the footprint was made by the pressure of the foot; and yet there would be no temporal priority, although one was made by the other. Similarly,” they say, “the universe and the created gods in it have always existed, while their maker always exists; and yet they have been made.”⁷⁸

If the metaphor succeeds, it is a way of explaining how God might be the cause of and exist prior (in a non-temporal sense) to some beginningless, created thing. This illustration fascinated and puzzled the medievals, though many of their responses to it were of the lame variety: what about the dust? when was it created? Yet Philip is not worried about the ground trod upon; rather, he has a different response based on his definition of *aeternitas*. Philip responds to the objector thus:

⁷⁵ I am quoting from Augustine, *City of God*, trans. Henry Bettenson, London: Penguin, 1984.

⁷⁶ Perhaps references to the following passages: “Thus, then, in accordance with the likely account, we must declare that this Cosmos has verily come into existence as a Living Creature endowed with soul and reason owing to the providence of God” (30b7-c1) and “Such, then, was the sum of the reasoning of the ever-existing God concerning the god which was one day to be existent, whereby He made it smooth and even and equal on all sides from the centre, a whole and perfect body compounded of perfect bodies. . . . He established one sole and solitary Heaven, able of itself because of its excellence to company with itself and needing none other beside, sufficing unto itself as acquaintance and friend. And because of all this He generated it to be a blessed God” (34a9-b11).

⁷⁷ “. . . quamquam et de mundo et de his, quos in mundo deos a Deo factos scribit Plato, apertissime dicat eos esse coepisse et habere initium, finem tamen non habituros, sed per conditoris potentissimam voluntatem in aeternum mansuros esse perhibeat. Verum id quo modo intellegant invenerunt, non esse hoc videlicet temporis, sed substitutionis initium” (309) *Corpus Christianorum*, Series Latina, Volume XLVII, Turnholti: Brepols, 1955.

⁷⁸ The passage continues: “‘Sicut enim,’ inquit, ‘si pes ex aeternitate semper fuisset in pulvere, semper ei subesset vestigium, quod tamen vestigium a calcante factum nemo dubitaret, nec alterum altero prius esset, quamvis alterum ab altero factum esset: sic,’ inquit, ‘et mundus atque in illo dii creati et semper fuerunt semper existente qui fecit, et tamen facti sunt.’”

But it ought to be said that, although the extremes are posited in nature, as was said, the mean does not, however, fit the arrangement of things. *Indeed, to be from something and not of something is to go from non-existence into existence. But no such thing is eternal.*

For to have a beginning of non-existence and to have a beginning of duration are convertible; for the measure is made not from the part of the beginning which is in existence, but in the way that the existence is between two periods of non-existence. For which reason its measure is simply time, but that which has non-being at the start and never at some later point is measured by the *aevum*; that which has non-being on neither end is without measure, but in it being and its duration are the same thing, and it is called eternity.

But it is not condign with any created thing to be without measure; for which reason also eternity does not pertain to it. Therefore, there is, first of all, eternity, then the *aevum*, and finally, time. A fourth differentia is not found to which another measure would correspond, namely a differentia which has not a beginning and has an end, because it follows that if a thing does not have a beginning, it does not have an end, and it is more noble not to have a beginning than not to have an end.⁷⁹

The objection had said that nothing is incomplete in the order of nature and so, if it is at all possible, some being will also exist, beginningless and yet created. Philip's response claims that this is not possible: it does not fit the arrangement of things. By "does not fit the arrangement of things" he seems to mean that such a beginningless, created being is not conceptually consistent with any way the world *could* have been, not just with the way that the world actually is. For he goes on to say that "to be from something [*ab ipso*] and not of something [*de ipso*] is to go from non-existence into existence. But no such thing is eternal."

⁷⁹ "Sed dicendum est quod, licet extrema ponantur in rerum natura, ut dictum est, medium tamen illud non convenit secundum ordinationem rerum. Esse enim ab aliquo, non de ipso, est exire de non esse in esse. Sed nullum tale eternum est. Habere enim principium non esse et habere principium durationis convertibilia sunt; mensura enim accipitur non ex parte principii quod est ens, sed secundum quod esse est inter duplex non esse. Unde eius mensura simpliciter est tempus, eius autem quod habet non esse ex parte ante et non ex parte post mensura est evum; eius autem quod ex neutra parte non est mensura, sed idem est in eo esse et sua duratio et dicitur eternitas. Sed non convenit alicui creato esse sine mensura; unde nec eternitas ei convenit. Est ergo eternitas primum, evum sequens, deinceps tempus. Quarta differentia non reperitur quibus alia mensura respondeat, scilicet ut non habeant principium et habeant finem, quia ad non habere principium consequitur non habere finem, et est non habere principium nobilius quam non habere finem" (51). As to this second to last point, "ad non habere principium consequitur non habere finem", the Platonists, as reported by Augustine in *De Civitate Dei* X, Chapter 31 seem to have had another, related intuition: "why do we not trust instead in the divine power which tells us that the soul itself is, like other things, created out of non-existence? The Platonists are evidently satisfied with justifying their refusal to believe this by the argument that nothing can have an eternal future which has not had an eternal past" (419).

The position that nothing which comes into existence from another (*ab aliquo*) can be eternal is ubiquitous in the medieval discussion of the eternity of the world; Bonaventure is one of many who champion the principle. Unfortunately, it is more of a stipulation than an argument. It is related, of course, to the medieval puzzlement over the beginningless footprint in the sand. The proponents of this position simply deny that the eternal footprint example is coherent because, by definition, there are not eternal footprints, nor eternal sand, nor any other eternal created thing.

Philip's distinction between *ab aliquo* ("from another") and *de aliquo* ("of another") is not likely to bowl us over. For his contemporaries, however, the distinction would have been far more compelling. Any Latin philosopher of the period would have been familiar with the phrases from the Nicene Creed, "*Credo in . . . Iesum Christum . . . Deum de Deo, lumen de lumine, Deum verum de Deo vero; genitum non factum . . .*" which phrasings are meant to convey, among other things, that God the Son was neither created nor made. The Second Person of the Trinity is *de Deo sed non a Deo factus* (of God, not made by God). Yet there remains a distinction between God the Father and the Son, the one proceeding from the other from all eternity. As Philip thought, the *de aliquo* relation allows for an eternal procession whereas the *ab aliquo* does not.

If we leave aside the complexities of Trinitarian theology, we can simplify the definition to state that anything not existing of itself, that is, anything which must have a cause of its existence, cannot be beginningless. Since everything created requires a cause for its existence (by definition), nothing created is beginningless. In other words, the *de aliquo/ab aliquo* distinction need not obscure a simple though controversial claim. The proposition that, "only those things which exist of themselves are beginningless" would be a slightly more intuitive

proposition upon which to base an argument. Be that as it may, Philip offers little independent reason to accept this definition and thereby address the worries of Philip's objector and the Platonists in *De Civitate Dei* X.31.

Philip's Definitions of Time, Aevum, and Eternity

While Philip's response to the objector may be half-convincing, Philip has provided some clear-cut definitions of time, *aevum*, and eternity which may prove to be useful terminology in unraveling the often tricky semantics of this metaphysical topic. One of the enduring difficulties in deciphering philosophical work on this question, whether of the medieval or contemporary period, is the lack of consensus about the meaning of "eternity." The meaning one assigns to this word will, in turn, affect how one understands time, and the relation of time to eternity (another vexed question of both the medieval and contemporary debates).⁸⁰

Philip attempts an answer to this latter question even as he concludes his response to the arguments for the world's beginninglessness. He begins by defining *time* as the measure of that which has a beginning as well as an end of its existence. The *aevum* measures that which has a beginning of existence and no end. Finally, that which has neither beginning nor end is called eternity, which is, properly speaking, measureless. Philip stipulates that there is not a measure of the fourth possibility, since it is actualized by nothing, namely a measure of something with no beginning though possessed of an end. These definitions do not address the question of their relation to each other; for instance, are they something like three different timelines or do they all occupy the same temporal space, as it were, simply describing different durations of existence?

⁸⁰ Many if not most philosophers writing on the subject today regard the notion of an atemporal God as incoherent or at least fraught with enough difficulties as to encourage the acceptance of the position that the Deity is temporal. Notable defenses of God's eternity are Stump, Eleonore and Kretzmann, Norman, "Eternity," *Journal of Philosophy* 84 (1987), 214-219 and Leftow, Brian, *Time and Eternity*, Ithaca, NY: Cornell University Press, 1991.

This latter possibility recommends itself because by adopting it, it is possible to avoid the difficulty of harmonizing events which seem to belong both to the temporal and eternal time frames (such as when God performs a miracle).

The downside of these definitions is that eternity looks rather like sempiternity.⁸¹ In other words, what is described as eternal could just as well be described as perpetual: it exists for all the time that there is. It also seems to mean that even eternal entities would exist or live one moment at a time, just as temporal entities do. This interpretation would bring Philip's definitions into conflict with Boethius' famous definition of God's eternity: the possession of an illimitable life all at once. Of course, Philip is not bound by Boethius' definition of eternity, but if Philip were to think of adopting the sempiternity concept, he would also have to accept two unpalatable (to him) consequences. First, to say that God is inside of time and that God lives moment to moment seems to derogate from God's perfections, especially God's simplicity. Second, granted that God never began to exist and will never cease to exist, time would also have to be without a beginning and an end to accommodate such a long-lived being. Since the latter is the very thing against which Philip has argued in Question III, there is no reason to think that he would accept this interpretation of his definitions. But how do we make sense of the definitions Philip has given? Philip's Question IV is the one place to look for answers.

⁸¹ The medieval authors are consistent in describing God as "eternal", but on many occasions this attribution looks like shorthand for "x is eternal iff x lacks a beginning and an end", for some of them seems to understand God as filling all of time rather than as something outside of time altogether. One can see this in Philip's definition of "eternal" already quoted: eternity is that which has non-being on neither end. Yet this is a strange thing to say, if, *pace* Philip, time might have non-being on neither end. If God's being is necessary, and God's endless life is one of His essential attributes, then it looks as though God can in no way be involved in time since time is possibly bounded at one or both ends. Philip is not claiming, however, that God's duration or life are contingent, but that he stands in relation to moments of time in the same way that finite, bounded things do. But if this is his claim, he seems to have endorsed a confused idea. Unless God exists in time, there is no way for God to stand in the same relation to moments of time as finite, temporal things do.

Question IV: A Consideration of the Relation of Time to Eternity

Just what Philip thought about the relation of time to eternity is complicated, and the matter becomes only slightly less so after reading his discussion of it in Question IV. While Question IV makes clear that Philip does not think of eternity simply as a glorified sempiternity, yet in the end, it appears that Philip wants to have all the advantages of eternity as an unique mode of being without the necessary effort of harmonizing the concurrence of eternal/temporal events. Though Question IV is ostensibly about the beginning of time (*de exitu temporis in esse*), the initial words of Question IV reveal that the substantive issue is the relation of time to eternity and the nature of both. Philip begins as though there had been no interruption in the discussion from the end of Question III:

But one asks about the egress of time into existence, whether it goes out in time or immediately. It does not seem to go out immediately because it is successive. If it goes out in time, either it is in [this time] or in some [other time]. It does not go out in itself, because the same thing does not contain while being contained by itself. But if it goes out in another [time], there would be two times at once, namely the time coming into existence and the time measuring that event. Further, it will contain both equally and will be contained by another, which is not fitting.

I answer that if we should like to posit a higher measure, as time is the higher measure of the things which happen in a certain part of time, so also here we can say that, since the egress of time into existence is a measure having a beginning and an end, just as also do the things which are properly measured by time, there will be an egress of it into existence in that duration which has neither beginning nor end, as in a transcendent measure. But if we should like to posit a proper measure, not one higher than it, there will not be an egress of it in something else. For a measure does not have a measure according to the same genus. Moreover, its going forth is its existence; for in successive things existence and becoming are the same thing.⁸²

⁸² Sed quaeritur de exitu temporis in esse, an exeat in tempore an subito. Subito non videtur quia est successivum. Si in tempore, aut in se aut in alio. Non in se, quia non idem continet et continetur a se ipso. Si vero in alio, essent duo tempora simul, scilicet quod exit in esse et in quo exit. Praeterea utrumque equaliter continebit et continebitur ab altero, quod est inconueniens. Respondeo. Si velimus ponere mensuram excellentem, sicut tempus est mensura excellens rerum quae fiunt in quadam parte temporis, ita et hic possumus dicere quod, cum exitus temporis in esse sit mensura habentis principium et finem, sicut et res quae proprie tempore mesurantur, erit exitus eius in esse in illa duratione quae nec habet principium nec finem tamquam in mensura transcendentem. Si autem velimus mensuram propriam ponere, non excedentem, non erit exitus eius in aliquo. Mensura enim mensuram non habet secundum idem genus. Suum autem exire est suum esse; in rebus enim successivis idem est esse et fieri.

The problem Philip is seeking to address is a sharp one: if time begins, it seems that there is some succession from the state of things prior to time's existence to the state of things after time has come into existence. Yet this succession, this "before and after" cannot be in time itself, for time is the very thing which is said not to exist "before". The thrust of this objection is aimed at moving the discussion in the direction of the view that there could not have been a first moment of time. This is the very conclusion Philip wants to avoid and so he must give some answer to the puzzle.

Philip offers two solutions, though he does not explicitly state his preference for one or the other. The first solution is to posit some higher measure, a super-time, as it were, which has the curious feature of lacking a beginning and an end (*quae nec habet principium nec finem*). The idea works by taking the same relation which obtains between a certain part of time and time itself and then mirroring this relation in a higher dimension between time and super-time. The curious stipulation about super-time having neither beginning nor end is due, presumably, to a desire to avoid an infinite regress of durations which come into existence and require a higher duration (e.g., super-super-time) in which to do so. For instance, just as the last year came to exist in a "higher" period of time, the last decade, the last ten years came to exist in a still higher period. The infinite regress of "higher" periods of time renders this solution none too promising. Are there really such things as these "higher" periods and are there so many of them? Even if there were, it does not seem that an infinite number of them, with no ultimate one, would address the present concern.

But there is another problem with Philip's first solution. Super-time would be rather un-time-like. A duration higher than time which necessarily lacks a beginning and an end is more similar to Philip's conception of eternity than to time. Or is there a more helpful, already

recognized label for this new duration than super-time? Perhaps Philip is trying to put real meat on virtual bones: other philosophers and cosmologists who insist upon a finite past encounter a similar difficulty when the language seems to constrain them to speak of a “before” in relation to the existence of time. Strictly speaking, however, there is no “before” in relation to the first moment of time. Yet for ease of expression, philosophers and cosmologists often speak as though there were some duration prior to the first moment of time, though this duration is imaginary, a sort of mental crutch, just like the “space” outside of a universe of finite physical dimensions. Or Philip may be wrestling with an even more intractable problem in the philosophy of time: how do we measure the passage of time? Other points of time are no less in need of measurement (i.e., at what rate do they pass away?) than the first moment of time.

In any case, Philip seems to see enough of these difficulties to offer a second solution to the puzzle. Though he speaks of positing a proper measure (*mensuram propriam ponere*), the merit of his second solution comes in avoiding the multiplication of higher temporal measures. Instead, he proposes to think of time as coming with a built-in measure, one of a different genus (*mensura enim mensuram non habet secundum idem genus*). According to the terms of the second solution, the first solution has missed the mark in positing a time-like measure as the measure of time; time cannot be measured by something of the same sort. The crux of the proposal comes in the sentence, “its going forth is its existence; for in successive things existence and becoming are the same thing” (*suum autem exire est suum esse; in rebus enim successivis idem est esse et fieri*). Philip is responding to the objector by saying that the objector’s point about the “going out” of time being successive does not have the implication that the objector would like. Philip claims that when a “successive” thing comes into existence, even though “comes into existence” sounds like a process requiring duration, in reality, successive things do

not exist 10% and then 26% and so on. They either exist or they do not. Thus Philip has bluntly dealt with the objection by denying the assumption upon which the objection rested, namely that the beginning of time is an event with an extended duration.

Having considered the beginning of time and not having found much help in that area for unlocking the relation between time and eternity, the investigation of the relation between the two continues.⁸³ Philip uses the following concern as a segue to his own views:

Still someone will wonder whether a part of the duration which is eternity is the same thing as something equal to a part of time or to the whole of time. [1] For if it is not the same thing, two durations would seem to exist at once [i.e., eternity and time]. [2] Likewise, if a part of eternity were equal to time itself or to a part of it, either time itself is finite or multiplied an infinite number of times, it will render a measure equal to eternity. But from times nothing will come forth except time. Therefore, it would be possible for time to become equal to eternity.⁸⁴

If it is not the same thing— [3] Augustine denies this: “What eternity is to the eternal, this is time to the temporal and the *aevum* to the aeviternal.” Therefore, the substance of eternity, the *aevum*, and time will be the same. Again, Plato: “Time is a part of eternity.”⁸⁵

⁸³ There is one intervening exchange which runs to this effect: “A question is raised: Time is to eternity as a point to a line, and so there is no proportion [between the two], and thus neither a measure equal nor a measure unequal [to them both].” Sed quaeritur. Tempus se habet ad aeternitatem sicut punctus ad lineam, et sic nulla est proportio et ita nec mensura aequalis nec inaequalis. I answer that in one way there is a comparison [between these two cases] because in each case there is no proportion [between a point and a line nor between time and eternity], but in another way there is no comparison because time and eternity are of the same genus, since both are a duration, while a point and a line are not of the same genus; on the contrary, the latter has division while the former does not. Hence the fact that there is no proportion between time and eternity is not because they belong to different genres but because of the difference between the finite and the infinite. So the objection is not dismissed because there is not an inequality, but because there is not a certain [type of] inequality . . . Respondeo. In hoc est simile in eo quod inducitur quod utrobique non est proportio, in hoc autem dissimile quod tempus et aeternitas sunt eiusdem generis, quia utrumque duratio est, punctus autem et linea non sunt, immo hoc divisionem habens, illud non habens. Unde quod non est proportio temporis ad aeternitatem non est ratione diversi generis, sed diversitatis per finitum et infinitum. Unde non removetur quod non sit ibi inaequalitas, sed quod non sit ibi inaequalitas certa, et ita est ibi mensura transcendens.

⁸⁴ Sed adhuc dubitabit aliquis utrum pars durationis quae est aeternitas sit eadem vel aequalis parti temporis vel toti tempori. Quod si non est eadem, videntur duae durationes simul; similiter si fuerit aequalis pars aeternitatis ipsi tempori vel parti eius, vel ipsum tempus finitum vel infinities sumptum reddet mensuram aequalem aeternitati. Sed ex temporibus non producet nisi tempus. Ergo possibile esset tempus aequale fieri aeternitati.

⁸⁵ Si non est eadem, contradicit Augustinus: “Quod est aeternitas aeterno, hoc tempus temporali et aevum aeviterno.” Ergo erit eadem substantia aeternitatis, aevi et temporis. Item, Plato: “Tempus est pars aeternitatis.”

The inquirer is inclined to think that time and eternity are made of the same sort of stuff, i.e. that eternity is nothing more than boundless time. In support of this position, the inquirer says (at [1]) that if they are not the same sort of thing, two durations would exist at once. This is presumably meant as a *reductio* against the view that time and eternity are not of the same genus. Although no specific reason is offered why the idea of two durations should serve as a *reductio*, the inquirer may have in mind the trouble of explaining how some events occur simultaneously in time and eternity, as miracles seem to do.⁸⁶

At [3] Philip adds two quotations to make the objection even weightier. The first quotation he attributes to Augustine, though both Alexander of Hales (who was writing after Philip) and Albert the Great attribute the saying to Aristotle; this attribution, too, is incorrect.⁸⁷ The second quotation is attributed by Philip to Plato, but as Wicki notes, it in fact comes from Cicero's *De inventione*, c. 26, n. 38. Like Philip, Alexander has also used the first quotation in a passage in which he is trying to explicate the differences between time, *aevum*, and eternity.

⁸⁶ The next part of the passage is rather confusing. I think that some more sense can be made of some of its sentences if recourse is had to Wicki's critical apparatus in light of what the argument seems to require. The first place to improve the clarity is where Wicki's text reads, "either time itself is *finite* or multiplied an infinite number of times, it will render a measure equal to eternity." The second argument (at [2]) for time and eternity being of the same genus is that, though finite time does not look like much in comparison with boundless eternity, yet in principle, finite portions of time or all of time could be multiplied infinitely, and thus a quantity could be reached equal to eternity. Yet if this is the argument, it does not make sense to say "either time itself is finite or . . ." Instead, the statement should read: "either time itself is infinite or if time is finite, multiplied infinitely it will render a measure equal to eternity." I am also motivated in this conjecture because Wicki cites one manuscript as reading *infinitum* rather than *finitum*. The concluding sentence of the second argument harmonizes with this interpretation: "Therefore, it would be possible for time to become equal to eternity." There is another, as it seems, textual problem in the sentence just before the conclusion. How does one fit the claim that, "from times nothing will come forth except time," with the rest of the argument, and especially with the concluding sentence which immediately follows it? I am tempted to think, both on account of the oddity of the claim's placement and its abbreviated language that it is a piece of marginal or parenthetical commentary which found its way into the text. Another explanation may be found if we read with Manuscript E *si* instead of *sed*. The corrected passage would read: "If from times nothing will come forth except time." *Si* makes the claim read more like a parenthetical or cautionary remark which the original author might have used to qualify his exposition of this second argument. I am thinking of something along the following lines: Time could be multiplied infinitely and so made equal to eternity, *if time would still be time in that case*. After all, the point of the first and second arguments is to suggest that time and eternity are of the same genus. And if this is the case, the proponent of these arguments would probably have to say that eternity just is time infinitely expanded.

⁸⁷ The editors of the *Glossa* of Alexander of Hales refer us to *Liber de causis*, sections 29-30.

Unlike Philip, Alexander of Hales reports the text in an objection which reaches a different conclusion, namely that the substance of eternity, the *aevum*, and time are not the same.

Boethius says: “Thou art the one who orders time to go forth from the *aevum*”;⁸⁸ therefore eternity and the *aevum* are not the same thing. And Aristotle says: “That which is eternity to the eternal, this is the *aevum* to the aeviternal and time to the temporal.” Again, eternity is a duration having neither a beginning nor an end; the *aevum* has a beginning and no end, as in a soul and an angel; therefore eternity and the *aevum* are not the same thing. Time moreover belongs to those things which have a beginning and an end.⁸⁹

In his own response, Alexander concurs that the substance (*substantia*) of time, the *aevum*, and eternity are not the same thing. Yet he also maintains that the “now” of eternity is nothing other than the “now” of both time and the *aevum*:

The ‘now’ of eternity, however, is no other ‘now’ than the ‘now’ of time or of the *aevum*; but the ‘now’ of time can be taken in two ways: either as static, which is eternity; or as flowing, which is properly the ‘now’ of time and is called an ‘instant.’... Moreover, the ‘now’ of eternity is in time not like a part of or from the substance of time, as time comes from times, but as an exemplar of it.

It is interesting to note the way in which Alexander follows Philip’s definitions of time, *aevum*, and eternity, though he departs from Philip with the addition that the “now” of eternity is an exemplar for the “now” time.⁹⁰ There is also a worry that Alexander is trying to have his cake

⁸⁸ *De consolazione philosophiae*, III, metr. 9 (PL 63, 758).

⁸⁹ Quod autem aevum idem quod aeternum, videtur per litteram, quia dicit coaequaeum et coaeternam esse generationem. Contra: Boethius: “Qui tempus ab aevo ire iubet”; ergo non est idem. Et Aristoteles: “Quod est aeternitas aeterno, hoc est aevum aeviterno et tempus temporalis”. Item, aeternitas est duratio non habens principium nec finem; aevum habet principium et non finem, ut in anima et angelo; ergo non idem. Tempus autem est eorum quae habent principium et finem.

⁹⁰ The whole of Alexander’s response is intriguing. I have translated it as follows: “I answer that the substances of time, *aevum*, and eternity are not the same thing. The “now” of eternity, however, is no other “now” than the “now” of time or of the *aevum*; but the “now” of time can be taken in two ways: either as static, which is eternity; or as flowing, which is properly the “now” of time and is called an “instant.” Moreover when it is said “when there is motion, there is the *aevum*” etc., the “when” does not express the “now” of time, but the “now” of the eternal, since eternity is the measure of aeviternal and temporal things, but the opposite is not the case; and the *aevum* is the measure of temporal things and not the other way around, because the higher measures the lower and not the other way around. And therefore one says that time is “part of eternity”, and time is defined by Cicero as “a fixed measure of a yearly, daily, and monthly period.” And when one says, “when there is motion, there is soul” the “when” signifies the “now” of the aeviternal. Moreover, the “now” of eternity is in time not like a part of or from the substance of time, as time comes from times, but as an exemplar of it. For just as God is in eternity, so that motion is in its own time. Herein lies the difference: that God is eternity, but motion is not time. And this is the reason why Boethius says that time flows from the *aevum*, on account of a similitude of likeness. Therefore it is

and eat it, too: he affirms that the “now” of eternity is the same as the “now” of time, but then piles on qualifications until it is no longer clear how the two can be the same. It does not seem possible, for instance, that the “now” of eternity is both the “now” of time and an exemplar of it(self).

Philip replies to all of these arguments thus:

I answer that the measure which is time is not the same thing for eternity, nor does it render by multiplication eternity or a measure equal to that. And that which is said, “a time taken an infinite number of times, etc.” ought to be denied, because time of itself is a measure of the things having a beginning and an end and if it were stretched to infinity, it would not equal eternity, because it has a beginning and eternity has none. And if time were infinite in both directions, still it would not be the same thing as eternity, although it would perhaps be equal to eternity; for time would still be successive in pieces, just like motion, because time is inseparable from motion, just as if an ell were inseparable from a quantity of cloth; eternity however is a static duration. Nor is it inconsistent that there exist two durations at once, but it is inconsistent that there exist two successive things at once, neither of which is contained by the other.⁹¹

In this passage comes the reaffirmation that time is not of the same genus as eternity, even if time were stretched to infinity. Interestingly, Philip claims that time would still not be eternity, though it might be equal to it, even if it were infinite in both the future and the past. This claim

clear that the *aevum* is not eternity, just as the Creator is not the creature.” The Latin text: Respondeo: non est eadem substantia horum. Nunc tamen aeternitatis non est aliud nunc quam nunc temporis vel aevi; sed nunc temporis dupliciter sumi potest: vel stans, quod est aeternitas; vel fluens, quod proprie temporis est, et hoc dicitur instans. Cum autem dicitur “quando est motus, est aevum”, etc., “quando” non dicit nunc temporis, sed nunc aeterni, quia aeternitas est mensura aeviternorum et temporalium, sed non convertitur; et aevum est mensura temporalium et non e converso, eo quod superius mensurat inferius et non e converso. Et ideo dicitur tempus esse “pars aeternitatis”, et definitur tempus a Tullio “annui, diurni, mensurni temporis certa dimensio”. Et cum dicitur “quando est motus, est anima”, “quando” notat nunc aeviterni. Nunc autem aeternitatis est in tempore non sicut pars vel de substantia temporis, ut tempus ex temporibus, sed sicut eius exemplar. Sicut enim Deus in aeternitate, ita iste motus in suo tempore. In hoc autem est differentia, quia Deus est aeternitas, motus autem non est tempus. Et haec est ratio quare Boethius dicit tempus fluere ab aevo, propter similitudinem imitationis. Patet ergo quod aevum non est aeternitas, sicut nec Creator creatura. The quotation from Cicero comes from *De Rhetorica*, I, c. 26: “Tempus est id quo nunc utimur . . . pars quaedam aeternitatis, cum alicuius annui, mensurni, diurni nocturnive spatii certa significatione.”

⁹¹ Respondeo quod mensura quae est tempus non est eadem aeternitati, nec ipsa reddit multiplicatione aeternitatem vel mensuram aequalem illi. Et quod dicitur: tempus infinities etc. dicendum quod non, quia tempus de se est mensura habentium principium et finem et si protenderetur in infinitum non aequaretur aeternitati, quia non est sine initio, sed aeternitas sine. Et si utrobique esset infinitum, adhuc non esset idem quod aeternitas, etsi fortassis aequale; nam tempus esset succedens in partibus sicut et motus quia inseparabile est a motu, sicut si ulna esset inseparabilis a quantitate panni, aeternitas autem est duratio stans. Neque inconueniens est duas durationes esse simul, sed duo successiva esse simul quorum neutrum ab altero continetur.

is striking because it indicates a conception of eternity which is something more than endless temporal duration. Instead, succession and motion are reserved for time; these things set time apart from eternity which, as Philip says, is a “static duration.”

This distinction between time and eternity is important in the evolution of the medieval understanding of the metaphysics of the origin of the world. For many medieval philosophers are concerned to preserve eternity as the exclusive domain of God’s existence. If time, however, is beginningless and endless, it might seem to be the same thing as eternity. Conversely, eternity might seem to be nothing but endless time, thus derogating from the perfection and simplicity of God’s non-successive mode of existence. According to Boethius’ definition, however, God is possessed of an illimitable life which he lives all at once, that is, God lives his life without succession. Thus, time and eternity must be two very different things, if time is necessarily characterized by change (motion) and succession. Once this distinction between time and eternity has been made, the way is open for considering the possibility of a beginningless (though created) world.

Philip’s Work Prepares the Way

Despite the fact that Philip does not go as far as recognizing the possibility of a beginningless and created world, we can find in his distinctions between time, *aevum*, and eternity the component materials of such a possibility. Thus Philip the Chancellor’s discussion of time and eternity prepares the way for later philosophical work which will defend the possibility of a beginningless, created world. In what follows, I will briefly explain how the elements found in Philip’s work may be taken to reach a conclusion different than Philip’s own.

As mentioned earlier, Philip thought that Aristotle's arguments ought to be taken as showing that the world is everlasting (*perpetuus*), not eternal (*aeternus*). It becomes clear in Questions III and IV that by "everlasting", Philip means something like "for as much time as there is." Now if the quantity of past time were infinite, *pace* the concern over the conceptual possibility of infinite time debated by later writers, the world would still be everlasting and not eternal. For as we have just seen, Philip thinks that even if time were infinite in both directions, it would still not be the same thing as eternity. There is thus good reason to think that the important distinction between God and the world is not limitlessness, but their respective modes of existence: either, as in God's case, the possession of an illimitable life all at once, or a successive existence, as in the case of temporal things.

To see that the elements of Philip's position are consistent with a universe infinite in past duration, we must look again at the definitions which Philip presents at the end of Question III. Philip distinguishes between time (*tempus*), *aevum*, and eternity (*aeternitas*). He writes of the being with a beginning and an end that "its measure is simply time (*tempus*), but that which has non-existence at the origin and never at some later point is measured by the *aevum*; that which has non-existence on neither end is without measure, and in it, being and its duration are the same thing, and it is called eternity" (51). At first glance, it looks as though Philip is distinguishing between finite beings, beings finite only in past duration, and eternal beings. These distinctions capture Philip's thought to some extent, but not entirely, for the contrast which Philip makes between the first and third categories does not involve infinity so much as it involves succession. Time is characterized by before and after, whereas eternity (understood, as Philip does, according to Boethius' definition) lacks this succession. Later in Question IV, Philip says:

Also that which is said that “time is a part of eternity” is said by reason of the “now”, which, if it is considered apart from a “before” and an “after”, is a part of the eternal or eternity. For “before” and “after” do not exist in time except by the change of changeable things. “Now”, however, is in essence a measure of unchangeable things.⁹²

And so Philip goes on to say that the “now” of time and eternity are the same thing; he does not go so far as Alexander of Hales’ subtle distinction – perhaps too subtle – of the “now” of the eternity as the exemplar for the “now” of the *aevum* and of time. Instead, he explains the passage “what eternity is to the eternal” thus:

And that which is said, “what eternity is to the eternal etc.”, this is said by reason of the “now”, because remaining one in itself the “now” produces eternity. But the “now” with “before” and “after” produces time, so that just as in change there is that which is changed, so also in time there is the “now”, and as time corresponds to change, the “now” corresponds to that which is changed precisely as a beginning of the future and an end of the past. Because if that which is changed is considered apart from the change, its “now” would be held to exist without respect to the past or the future. And so in eternity nothing is successive nor does anything admit the division of parts in itself. And so when it is said: “Eternity is the perfect and wholly at once possession of an interminable life”, that “at once” removes succession, that “perfect and wholly” removes the division of parts. So an eternity is not a part of eternity in the way that a time is a part of time. And thus there are three differentia between eternity and time.⁹³

These last passages should make it clearer that when Philip rejects the application of the eternal to the created order, he is not insisting exclusively on the point that time is finite in past duration.

⁹² He continues: And we say that eternity, in regard to being, is the same thing as the divine essence, but they differ in account; for eternity is an unfailing duration or continuation. Whence just as being is said of God to be the same thing, but differing in scope, so also when it is said indirectly about eternity. Whence it is not the same thing to speak of being in God and being in eternity; about nothing is being said in rightness except about God. The Latin text: *Illud etiam quod dicitur: tempus est pars aeternitatis dicitur ratione ipsius “nunc”, quod si attenditur absque prius et posterius est pars aeterni vel aeternitas. Prius enim et post non est in tempore nisi ex motu mutabilium, nunc autem in essentia mensura est immutabilium. Et dicimus quod aeternitas secundum esse idem est quod divina essentia, sed ratione differunt; aeternitas enim est duratio sive continuatio indeficiens. Unde sicut esse dictum de Deo idem est, sed intentione differens, ita est de aeternitate cum oblique dicitur. Unde non idem est dicere esse in Deo et esse in aeternitate; de nullo tamen dicitur in recitudine nisi de Deo.*

⁹³ Et quod dicitur: quod est aeternitas aeterno etc. hoc dicitur ratione ipsius nunc, quod manens in se unum aeternitatem producit. Ipsum vero nunc cum prius et posterius producit tempus, ita quod sicut in motu est id quod mutatur sic in tempore est ipsum nunc, et respondet tempus motui, nunc vero ei quod transmutatur respondet prout est principium futuri et finis praeteriti. Quod si id quod mutatur sine mutatione acciperetur, acciperetur esse ipsius nunc sine respectu ad praeteritum et futurum. Unde in aeternitate nihil est succedens neque partium in se divisionem recipiens. Unde cum dicitur: “aeternitas est interminabilis vitae tota simul ac perfecta possessio”, quod dicitur “simul” removet successionem, quod dicitur “tota et perfecta” removet partium divisionem. Unde non est aeternitatis pars aeternitas sicut temporis tempus, et ita tres differentiae aeternitatis ad tempus.

It may well be the case that time is, in fact, finite in past duration, but given the distinction about the static nature of eternity, there is no danger of confusion between the created world and eternity. For even if the world is temporally beginningless, time is certainly not a static duration.

It only remains to sketch a picture of the alternative to Philip's created world with a finite past. This alternative world would begin to exist, as Philip insists it must, though at no temporal point would it begin to do so and, further, it would be infinite in past duration. This world would be like the footprint from a foot which is pressing into the sand but never began to do so. This is where we can see that the possibilities of Philip's definitions exceed the claims he is willing to make. Though Philip claims that, by definition, there is no such thing in nature as, for example, a beginningless light proceeding from an beginningless lamp, such a situation may well be one way that the world *could* have been, even respecting the proper distinctions between time and eternity. To recognize this possibility is far from giving an argument that such is the case. Yet it is even the conceptual possibility of such a world against which Philip and other medieval philosophers turn. It is Aquinas who, some thirty years after Philip, will strenuously maintain the possibility of a world infinite in past duration.

Conclusion

Philip's Questions III and IV from the *Summa de Bono* about the eternity of the world and the beginning of time have shown two things. First, they have given us a picture of the state of the discussion on these topics at a period when the Aristotelian works on natural philosophy were coming into use in Europe. This is of interest because Aristotle is commonly understood as having argued that time necessarily lacks a beginning. This view has the implication that time is infinite in past duration, a state of affairs of which the conceptual possibility has often been

questioned. Philip shows us one way of handling Aristotle's claims while also arguing that the finitude or infinitude of time is not so central to his contemporaries' notion of time as its successive nature. Finally, because Philip does not offer arguments against the conceptual possibility of beginningless time, he is closer to Bonaventure and Aquinas' way of thinking about this issue than many of his contemporaries who remained committed to poor arguments for the proposition that past time is necessarily finite.

CHAPTER 3

BONAVENTURE RECONSIDERED

Introduction

When philosophers discuss Bonaventure's views on the eternity of the world, they generally have three questions in mind. According to Bonaventure,

- (1) Is a *created* world with an infinite past duration possible?⁹⁴
- (2) Is *any* world with an infinite past duration possible?⁹⁵ and
- (3) If the answer to (A) or (B) is “no”, why not?

Disagreement about how Bonaventure answers these questions has, in part, motivated this chapter. The disagreement goes back to Bonaventure's commentary on the *Sentences* of Peter Lombard, Book II, division 1, article 1, question 2, “Was the world produced beginninglessly or temporally?”⁹⁶ One approach claims that Bonaventure thought it impossible for *any* world to have an infinite past duration.⁹⁷ This position rests on the supposedly decisive character of six arguments based on *per se* known propositions against a beginningless world found in II *Sent.*, d. 1, art. 1, q. 2. Others argue that Bonaventure only thought it impossible for a *created* world to

⁹⁴ A created world is a world which God has made *ex nihilo*, that is, God gave such a world the whole of its existence and God did not make the world from any previously existing matter. Bonaventure says simply: “To create is properly speaking to make something from nothing” (II *Sent.*, d. I, p. I, cap. I).⁹⁴ Coccia (1974) notes the difference between “creation”, on the one hand, and “conception” or even “artistic creation” on the other: “Creation is distinguished from the actions of creatures and even from poetic activity or poetic creation, which always requires some material that will undergo transformation, while creation presupposes nothing other than the power of God” (283).

⁹⁵ A world with an infinite past duration is one in which the series of equal, discrete moments of time is beginningless. This is to say nothing of whether the temporal series in such a world will have an end. The medievals used the language of *ex parte ante* and *ex parte post* to refer to, respectively, the past and future directions of the temporal series. So here we are asking Bonaventure only whether time *ex parte ante* is possibly infinite.

⁹⁶ Peter Lombard (c. 1100-1160 A.D.) Bonaventure's *Sentences* commentary, not unlike Thomas Aquinas' *Summa Theologica*, is reflective of the breadth and depth of Bonaventure's theological and philosophical thought. Robinson (1907) notes that the *Sentences* commentary “was written, *superiorum praecepto* (at the command of his superiors) when he was only twenty-seven.” Though it is not the work of mature years, his position on the question of the eternity of the world did not substantially change in his later published works. What did change was his view on what Aristotle had thought about creation; in Bonaventure's early years, he thought it was possible that Aristotle had believed in a creation. He eventually came to reject this admittedly bizarre view (though not uncommon at the time).

⁹⁷ Bonansea (1974), Davis (1996), and Brown (2005) are three instances of this approach.

have an infinite past duration.⁹⁸ They claim that the aforementioned six arguments against a beginningless world do not represent Bonaventure's own position, but merely present some arguments that philosophers were using (or might have used) against the possibility of any world with an infinite past duration. Bonaventure expresses his own views about the eternity of the world, according to this latter camp, in another section of Question 2, called the *Respondeo*, "I answer".

II *Sent.*, d. 1, art. 1, q. 2 is undoubtedly the best place to find Bonaventure's views on the eternity of the world, and the main task of this chapter is an analysis of that question. This analysis proceeds in three stages. First, I present the structure of a disputed question; a failure of sensitivity to this structure has led some to miss Bonaventure's view altogether. Second, in my reading of this question, I will argue that Bonaventure denied the possibility of a *created* world with an infinite past duration, while he allowed the possibility of an *uncreated* world with an infinite past duration. Third, I offer some reasons why Bonaventure (and we) ought to find at least five of the arguments against a beginningless world unconvincing.

What did Bonaventure say?

The Structure of a Disputed Question

Let us begin by looking at what Bonaventure says in II *Sent.*, d. 1, art. 1, q. 2, "Was the world produced beginninglessly or temporally?" In answering this question, Bonaventure uses the format of a disputed question (*quaestio*) commonly employed in mid and late 13th century philosophy and theology. I think that a failure of sensitivity to the structure of a disputed question is responsible for the misunderstanding that some philosophers have about Bonaventure's views. So I want to start by establishing precisely what this structure is. In

⁹⁸ Kovach (1974), Baldner (1989 & 1997), and Marenbon (2007) are three instances of the other approach.

Marenbon (1987) we find a helpful outline of a disputed question's structure. In this outline as I present it below, the philosopher is arguing for p ; p is called the "preferred position" while not- p is called the "contrary position" (28).

Section I: Statement of the question, e.g. "Was the world produced beginninglessly or temporally?"

Section II: Statement of the contrary position (not- p), followed by individual arguments from authority and/or reason in support of not- p .

Section III: Argument(s) from authority or reason for the preferred position (p).

Section IV: The *Respondeo*. The philosopher's own answer to the question and an explanation of why it is the case that p .

Section V: A refutation, one by one, of the arguments for the contrary position (not- p).⁹⁹

Marenbon offers these remarks on the structure of a disputed question:

Modern commentators will often ignore every part of a thirteenth-century *quaestio* except for the 'body', the writer's own reply to the initial question. They are not without some justification. The body of the *quaestio* gave the medieval thinker a chance to develop *his own arguments in the direction he thought fit* and to arrive at *an individual position far subtler than a simple positive or negative reply* to the question (30).¹⁰⁰

Thus, it is curious that many scholars look exclusively at Bonaventure's Section III, arguments for the preferred position, where we find the six arguments based on *per se* known propositions against the possibility of an infinite past, while they brush past the material in his *Respondeo*. This is a mistake and a careful investigation of Bonaventure's Sections III and IV will bear this claim out.

⁹⁹ I have taken this outline almost verbatim from page 28 of Marenbon (1987) with a few alterations.

¹⁰⁰ Marenbon (1987). The emphases are mine.

Are the arguments of Section III Bonaventure's?

According to Marenbon's disputed question outline, the most crucial section for discovering Bonaventure's own view is Section IV, the *Respondeo*. (I here refer the reader to Appendix A where I have translated the whole of Bonaventure's disputed question.) Yet many commentators have largely ignored the *Respondeo* and have focused instead on Section III's six arguments for the preferred position. This approach is adopted, naturally enough, by those whose interest in Bonaventure stems from their support for the claim that infinite past time is incoherent (regardless of whether the world is created). Whitrow (1978) and Craig (1979) are two examples of this approach to Bonaventure. Bonaventure's own words in the *Respondeo* are these: "when you presuppose that matter is beginningless, it seems reasonable and understandable to suppose that the world is beginningless. This is clear from two examples." Craig betrays little knowledge of what Bonaventure has said in the *Respondeo* when he writes: "Bonaventure argued that the existence of God is incompatible with the eternity of the universe and marshaled several arguments to demonstrate that the universe had a beginning" (55). Yet Bonaventure's two examples that explain how the world might have been beginningless both make use of God as the principle character. The first begins: "The production of the world by God is like the making of a footprint." And the second begins: "A creature comes from God the Father like a shadow, while God the Son comes from God the Father like the brightness of light." The situation is almost exactly opposite to what Craig has described.

What is more, there is no *prima facie* reason to think that the arguments for the preferred position of Section III were Bonaventure's own, either in an original or in an adopted sense – at

least not all of them.¹⁰¹ If Bonaventure's disputed question follows the customary format for a disputed question, it would be unlikely that he introduced wholly original arguments in Section II (arguments against the preferred position) and Section III (arguments for the preferred position). When a disputed question was argued aloud in the presence of a Master, these were the sections that the graduate students were responsible for presenting!¹⁰² Tavad (1951) corroborates this point:

A detailed study of the *Commentary* shows . . . that the several series of arguments which open the question have been put there for their *documentary value*: they form the 'status quaestionis' of our manuals. From the fact that one series seems favourable to Bonaventure's solution, it does not follow that its arguments are endorsed by St. Bonaventure himself. . . . In all fairness, one should consider its contents as St. Bonaventure's own arguments only provided that they are taken up in the course of his solution or in his refutation of the objections (281-282).¹⁰³

Baldner (1989), who does not cite Tavad (1951), despite the substantial agreement between their views on Bonaventure, seems independently to have reached the same conclusion: "the fact that Bonaventure has given these arguments [in Section III for the preferred position] as initial arguments in a scholastic *quaestio* says nothing about whether he holds that the arguments are sound. The initial arguments of a scholastic *quaestio* merely serve to give the *status quaestionis* before the master gives his own response" (209).

The structure of a disputed question is not the only reason that we should doubt Bonaventure's commitment to the arguments in Section III for the preferred position. Besides structure, there is also the fact that these arguments are not original to Bonaventure. Sorabji (1983) complains about some "leading scholars of the medieval West [who] have created the

¹⁰¹ In Section IV he does explicitly endorse the argument in III.f. As we shall see, however, this argument is in important respects different from the first five arguments in that it restricts the claim about the impossibility of infinite past time to worlds created *ex nihilo*.

¹⁰² Marebon (1987): "The first session of a disputation – more an exercise for pupils than an opportunity for a master to develop doctrine – was not usually recorded; but a few reportations survive, from which a picture of these has emerged. The second session of a disputation, however, where the master summarized and determined, was very often recorded, revised and published by the master as the expression of his views" (25).

¹⁰³ The emphasis is mine.

impression that the ‘infinity’ arguments in favour of a beginning were invented by Bonaventure. But in fact Bonaventure was simply repeating Philoponus’ arguments and even using the same illustrations” (202).¹⁰⁴ Dales (1990), however, adds a note of caution about Sorabji’s claim: “It seems . . . that Philoponus’s work was not translated into Latin during the Middle Ages. There remains the possibility that Bonaventure may have read an account of Philoponus’s arguments in some Arabic or Jewish work, but if so, I have not been able to discover the avenue of transmission” (91). Teske (1995) makes a similar point about William of Auvergne whose *De universo* (written between the years 1231-1236) appears no less indebted to Philoponus in its sections on the eternity of the world: “though the evidence that William knew Philoponus’s arguments through some Islamic or Jewish source is, I believe, strong, it does not seem possible to identify his source or sources with any more precision” (147-148).

Although the precise path of transmission from Philoponus to 13th century Paris is hard to identify, there is plenty of evidence that Bonaventure did not fortuitously reinvent the arguments of Section III on his own. Baldner (1989) takes up Sorabji’s line that the arguments are not original to Bonaventure and identifies some authors in whose writings they appear. Besides Moses Maimonides (1135-1204), they “can also be found in many other thinkers in the 13th century” and Baldner cites William of Auvergne, Albert the Great, Thomas Aquinas, and Matthew of Aquasparta.¹⁰⁵ Bonaventure’s III.a and III.e do appear in Moses Maimonides’ *Guide of the Perplexed*, which was translated in the 1220s in France.¹⁰⁶ In Part I, Chapter 74,

¹⁰⁴ Sorabji fingers the guilty in a footnote: Gilson (1924), Murdoch (1982), and Whitrow (1978).

¹⁰⁵ I would note that the appearance of arguments such as Bonaventure’s in Thomas Aquinas and Matthew of Aquasparta does not tell against Dales’ caution. Aquinas is writing his commentary on the *Sentences* some five years after Bonaventure’s and Matthew of Aquasparta had studied under Bonaventure, so it is just possible that they took these arguments as fresh from Bonaventure’s work.

¹⁰⁶ This “quite free translation” of the *Guide of the Perplexed* “is anonymous, probably a collaboration between a Jew and a Christian, and it is based on the second, looser translation by Jehudah al-Harisi of the original Arabic into Hebrew. As well as its importance in its own right, Maimonides’ book would have been the only source through which a Latin reader could have learned about the kalam tradition” (212, Marenbon 2007).

Maimonides is reporting arguments against infinite past time used by the Mutakallimūn.¹⁰⁷ The following argument corresponds to Bonaventure's III.a:

Now from the belief that the world is eternal, it follows necessarily that all the individuals going back from a given time in the past to the preceding time are infinite in number. And similarly, all the individuals of that same species from a date posterior by one thousand years, for example, to the preceding time are likewise infinite in number. Now the latter group of individuals is greater than the former by the number of those who were born during the thousand years. Accordingly they conclude from this consideration - necessarily, as they believe - that an infinite may be greater in number than another infinite. They do the same thing also with regard to the revolutions of the heavenly sphere . . . (Pines 222).

Here is the argument that corresponds to Bonaventure's III.e:

He says: if the world is eternal, the number of the men who died in the limitless past is infinite. There would therefore be an infinite number of souls simultaneously existing. Now this is a thing of which it has been indubitably demonstrated that it is false - I mean the simultaneous existence of an infinite number of numberable things (Pines 220).

It is not known, however, whether a copy of the *Guide of the Perplexed* ever came into Bonaventure's hands. A far more likely (and direct) source is William of Auvergne, who was a master of theology in Paris by 1225 and was bishop of Paris from 1228-1249.¹⁰⁸ Teske (1995) presents William's arguments for the "newness of the world" and concludes that "one could very well claim that William anticipated Bonaventure in the recovery of the concept of the infinite as a decisive instrument in the controversy concerning the duration of the world" (159). Teske continues by saying that though "Bonaventure's use of these arguments . . . was to have the more lasting impact on the history of philosophy . . . it is surely likely that he read them in William" (footnote 60, 159). One piece of evidence for a direct connection is that Bonaventure appears to have borrowed the second example used in his *Respondeo* from William's *De universo*.

¹⁰⁷ "In this chapter I shall include for your benefit a narration of the proofs of the Mutakallimūn showing that the world is created in time. . . . I shall inform you of what every one of them intends and of the method he uses in order to adduce proof establishing the creation of the world in time or refuting its eternity" (215). The mutakallimūn are the practitioners of *kalam*, a name given in Islamic philosophy to the "process of adducing philosophical proofs to justify elements of religious doctrine" (Blackburn 205).

¹⁰⁸ Bonaventure began his university studies in Paris in the Arts faculty in 1235 and finally took up the study of theology in the years 1243-1248 (Noone and Houser 2005).

Curiously, if William of Auvergne is to be regarded as Bonaventure's main source for the arguments of Section III, it is odd that "William does not have the argument found in al-Ghazali and Maimonides that an infinite past time would entail an actual infinity of immortal souls" (Teske 159). It is thus reasonable to conclude that Bonaventure is indebted to a number of authors and yet to none in particular for the arguments Section III. As we shall see, Bonaventure himself is most interested in argument III.f, which Houser and Noone (2005) call "an elegant synthesis and restatement of the position of Parisian theologians since the time of William of Auxerre" and one that "is especially indebted to the *Quaestiones* of Alexander of Hales." One version of this argument appears in Albert the Great's commentary on the *Sentences* (II.1.B.10), where, like Bonaventure, Albert endorses it as stronger than the other arguments for the world's finite past duration. That the arguments of Section III have come to be so closely associated with Bonaventure's name is partly due to an ignorance of the nature of a disputed question, partly to an accident of history.

Bonaventure's own position

So what does Bonaventure say for his own part in Section IV, the *Respondeo*? First, he emphatically states that on the supposition that the world has been created *ex nihilo*, it is contrary to truth and reason to hold that the world is infinite in past duration:

We must say that to talk of a beginningless world or of a world produced beginninglessly while also supposing that this world has been produced *ex nihilo* is altogether contrary to truth and reason, as the sixth argument [III.f.] proves. This claim is so contrary to reason that I do not believe that any philosopher, no matter how slight his comprehension, has made this claim, for it contains in itself a manifest contradiction.¹⁰⁹

¹⁰⁹ Dicendum, quod ponere mundum aeternum esse sive aeternaliter productum, ponendo res omnes ex nihilo productas, omnino est contra veritatem et rationem, sicut ultima ratio probat; et adeo contra rationem, ut nullum philosophorum quantumcumque parvi intellectus crediderim hoc posuisse. Hoc enim implicat in se manifestam contradictionem.

While referring to none of the other arguments for the preferred position in Section III, he says that Argument III.f proves this claim.¹¹⁰ Argument III.f runs as follows:

[III.f] The sixth proposition: it is impossible for that which has being after non-being to have existed beginninglessly, for this implies a contradiction. But the world has existence after non-existence; therefore it is impossible that it exists beginninglessly.¹¹¹

Since Argument III.f speaks specifically to past time in the case of a created world (being after non-being), there may be some temptation to think that Bonaventure regards the previous five arguments, which attack the coherence of infinite past time, as overdetermining the case which III.f is in itself sufficient to make. In other words, if every world is a created world, Argument III.f is sufficient to make the case against infinite past time, but it might still be interesting to note, via first five arguments, that if an uncreated world were possible, it could not be infinite in past duration. But what Bonaventure goes on to say undermines such an interpretation, for he states that if the eternity of matter is presupposed, to suppose that the world is infinite in past duration seems reasonable and understandable.¹¹² Thus, Bonaventure does not have any difficulty in conceiving of a beginningless world, at least up to a certain point. He does not object to beginninglessness nor to the way in which the maker would be only logically (and not temporally) prior to the made. His objection to the view arises, as we shall see, over what the notion of *ex nihilo* creation requires of the relation between creator and created.

I think that the bent of Bonaventure's remarks is sufficiently clear. But I also think that the language he uses in IV.b-c implies a curious dilemma. He writes there:

[IV.b] But when you presuppose that matter is beginningless, it seems reasonable and understandable to suppose that the world is beginningless. This is clear from two examples. . . .

¹¹⁰ "sicut ultima ratio probat" (22b).

¹¹¹ Ultima ratio ad hoc est: impossibile est, quod habet esse post non-esse habere esse aeternum, quoniam hic est implicatio contradictionis; sed mundus habet esse post non-esse: ergo impossibile est esse aeternum.

¹¹² "Ponere autem mundum aeternum, praesupposita aeternitate materiae, rationabile videtur et intelligibile" (22b).

[IV.c] The position expressed in IV.b is more reasonable than its opposite, namely that matter existed eternally [before creation] in an imperfect state, without form or divine influence, as certain philosophers have said. So much more reasonable is the view in IV.b that, according to the saints and the commentators and his own words, even that very excellent philosopher, Aristotle, made this (erroneous) position his own.

At first glance, it may look as though the presupposition in IV.b - matter is eternal (or beginningless) - is begging the question; of course the world is beginningless if the constituent elements of the world are beginningless. Those, therefore, who would want to use arguments III.a-e (or others similar) to attack the coherence of beginningless past time will hardly think that Bonaventure has considered their position fairly. So then suppose instead that we understand Bonaventure to mean matter as formless, motionless, changeless raw material which does not owe its existence to anything external to itself. On such an understanding, the existence of matter and the existence (and beginning of time) may be two distinct questions, if such matter may exist timelessly being in itself formless and changeless. So Bonaventure would be making the claim, justified by the two illustrations that he presents next, that if matter is like that, then there is nothing incoherent in beginningless time.

But is that the understanding of matter that Bonaventure has in mind? For he goes on in IV.c to say: “The position expressed in IV.b is more reasonable than its opposite, namely that matter existed eternally [before creation] in an imperfect state, without form or divine influence.”¹¹³ For this to be a contrast with the previous possibility, Bonaventure must be describing a scenario in which matter exists prior to the existence of time and the world (informed, changing matter). But how can matter exist “eternally” without time? Either Bonaventure means “eternally” in Boethius’ sense of the simultaneous possession of an unlimited existence, a sense which Bonaventure knew and which was reserved for God, or else

¹¹³ This view sounds like the one which Aristotle says is described by Anaxagoras “who says that all things were together and at rest for an infinite period of time, and that then Mind introduced motion and separated them” (Physics 250b25).

he means “eternally” in the sense of temporally beginningless. So if we reasonably take him to mean the latter, he is describing an incoherent scenario in which time both does and does not have a beginning. To call IV.b more reasonable than IV.c is then something of an understatement! The dilemma, therefore, is that Bonaventure is either begging the question against the proponents of III.a-e or else he is endorsing as a possibility something which is clearly not.

One way out of this dilemma is to interpret Bonaventure’s “eternally” as a temporary reversion to the unhelpful language of the early 13th century. Neglecting Boethius’ definition of “eternal”, the philosophers of that period are thinking of “eternal existence” as some non-temporal mode of existence which is not restricted to God, which is beginningless, and is prior to time (in some sense). I think that this is the best way to understand Bonaventure’s “eternally” in IV.c rather than force him to beg the question against the defenders of III.a-e. He thus avoids begging the question against them by understanding matter’s existence as possible apart from time, though at the cost of clarity in describing the alternative in IV.c. Unfortunately, in this instance, lack of clarity is not venial, for it is hard to say, without further elucidation, that there is a viable difference between IV.b and IV.c.

It remains then for Bonaventure to justify his claim that beginningless matter makes possible beginningless time, and he does so with two illustrations. The first is taken from Augustine’s *City of God*: the Platonists contend that an eternal foot could make an eternal footprint in eternal dust.

If a foot . . . had been from all eternity planted on dust, the print of it would always be underneath; but for all that no one would doubt that the footprint was made by the pressure of the foot: and yet there would be no temporal priority, although one was made by the other.¹¹⁴

¹¹⁴ Translation from Henry Bettenson (1972). *De civitate Dei* X, c. 31: “Sicut enim, inquit [Platonici], si pes ex aeternitate semper fuisset in pulvere, semper ei subesset vestigium, quod tamen vestigium a calcante factum nemo

The second illustration appears to come from William of Auvergne's *De universo*.¹¹⁵ God the Father is imagined to be a light source, God the Son, the brightness of that light (*splendor*), and eternal matter is an opaque object in front of the light source. As soon as there is light, there is the brightness of light, and as soon as the brightness of light encounters an opaque object, there is a shadow. God the Father (the light), though he is the cause of the material world (the shadow), is nevertheless codurational with the world.

So, Bonaventure thought, Aristotle could coherently maintain the beginninglessness of time in a world with uncreated matter. There is, however, an important proviso, as Bonaventure thinks that Aristotle must deny the possibility of eternal beatitude for the human soul in a world where time is beginningless. Bonaventure writes:

[IV.f] For Aristotle to avoid an actual infinity it was necessary for him to hold: either that [i] the rational soul is corruptible or [ii] the unity of the rational soul or [iii] metempsychosis.

[IV.g] Yet if any of [IV.f.i-iii] is the case, there is no everlasting happiness.

Aristotle would have to do this, on the supposition of the eternity of species, in order to avoid the simultaneous existence of an actually infinite number of disembodied human souls. Bonaventure saw three ways in which Aristotle could avoid an actual infinity of human souls in such a world; he could say that souls are mortal, or that there is really only one soul, or that a finite number of souls are occasionally recycled into new human bodies. Significantly, Bonaventure says nothing in his *Respondeo* about other putative problems related to infinity, the acuteness of which he has all too often been accused of feeling. He does *not* say, for example, that in such a world an

dubitaret, nec alterum altero prius esset, quamvis alterum ab altero factum esset; sic, inquit, et mundus atque in illo dii creati et semper fuerunt, semper existente qui fecit, et tamen facti sunt.”

¹¹⁵ Footnote 34 in Walz (1998) is helpful: “It was brought to my attention by an alert reviewer of this paper that Augustine’s analogy here, as well as the shadow analogy mentioned in St. Bonaventure’s text, can also be found in William of Auvergne’s work *De universo*. The reviewer also thinks that William, in turn, found the analogies in the works of Avicenna” (88).

infinity of moments of time would have elapsed, which is impossible, therefore, etc. He only calls attention to a principle, in connection with disembodied souls, which Aristotle and almost every medieval philosopher endorsed: the simultaneous existence of an actually infinite number of things is impossible.¹¹⁶

There is one interpretative puzzle, however, about Bonaventure's words in the *Respondeo* that threatens to undermine my reading. The puzzle is over these words: "But if Aristotle thought that the world did not begin in any way, he was manifestly mistaken, *just as the many arguments above have shown*."¹¹⁷ What are these "many arguments"? One natural candidate is the set of six arguments that Bonaventure gives in Section III. These arguments insist upon a beginning to time, for they argue that infinite past time is impossible. Tavad (1951) thinks that the "many arguments" are the six given in Section III. Consequently, in order to defend his view of Bonaventure as liberal on the possibility of infinite past time, Tavad bends over backward to claim that "ostensum est" only means "point out" or "show" and not "prove".¹¹⁸ Tavad writes:

By "manifeste erravit, sicut pluribus rationibus ostensum est supra", we understand that there is an obvious error: the eternity of the world asserted as a fact, and that this error is opposed by some previous arguments. On the value of these, St Bonaventure says nothing (282).

If Tavad's understanding of the identity of the "many arguments" is correct, it seems more natural to understand Bonaventure as indicating that in these arguments there is *some* ground for his view that Aristotle was seriously mistaken, even if they do not amount to demonstrative

¹¹⁶ Thus, for instance, Aquinas understands *Physics* 204b4-10: "Nor can number taken in abstraction be infinite; for number or that which has number is numberable. If then the numberable can be numbered, it would also be possible to go through the infinite", about which passage Aquinas comments: "[this] argument shows that there is no infinite in multitude" (*Physics* commentary 176).

¹¹⁷ "Si autem hoc sensit, quod nullo modo coeperit; manifeste erravit, sicut pluribus rationibus ostensum est supra."

¹¹⁸ "By 'manifeste erravit, sicut pluribus rationibus ostensum est supra', we understand that there is an obvious error: the eternity of the world asserted as a fact, and that this error is opposed by some previous arguments. On the value of these, St Bonaventure says nothing" (282). On this reading, while it might be true that Bonaventure is saying nothing explicitly, he certainly would seem to be saying something implicitly, namely, that there is some positive connection between what these arguments against the possibility of infinite past time show and our knowledge that Aristotle's position (past time is infinite) is gravely mistaken.

proofs.¹¹⁹ But instead of Tavad's interpretation, I think that Baldner's reading is more likely: the "many arguments" are those of the preceding disputed question, which asks whether both the matter and the form of the world were caused to exist or only the form (matter being self-subsisting). There Bonaventure says that faith establishes and reason confirms what reason could not independently prove, that the world, both matter and form, were created. Thus the previous disputed question would undermine someone who wanted to say that the world did not begin to exist, for in Bonaventure's mind, creation and a beginning of existence are linked. This reading is confirmed by what Bonaventure says in the sentence immediately following the one under discussion: "For Aristotle to avoid an actual infinity it was necessary for him to hold either [1] that the world was not made or [2] that it was not made *ex nihilo*." Recall that Bonaventure is unsure whether Aristotle subscribed to a doctrine of creation. Bonaventure is only pointing out that if Aristotle did, he could not have consistently maintained that past time is infinite in duration. On the other hand, as Bonaventure has already noted, if Aristotle wants to drop the doctrine of creation, he must say either that the world was not made or, at any rate, that it was not made *ex nihilo*, a way of being made that is unique to created things.

A created world must be finite in past duration

Besides Bonaventure's endorsement of a possibly beginningless (uncreated) world, I must also note Bonaventure's approbation in Section IV of Argument III.f. In Bonaventure's words:

¹¹⁹ Albert the Great and Thomas Aquinas take a similar approach to such arguments by saying that they are persuasive, though they do not amount to demonstrative proofs of the world's temporal beginning.

The sixth proposition: it is impossible for that which has being after non-being to have existed beginninglessly, for this implies a contradiction. But the world has existence after non-existence; therefore it is impossible that it exists beginninglessly.¹²⁰ That the world has existence after non-existence is proved thus. Everything which has the totality of its existence from *A* is produced *ex nihilo* by *A*. And the world has the whole of its existence from God; therefore the world was produced *ex nihilo*. But it was not produced *ex nihilo* as to its matter but as to its source.¹²¹ Moreover, it is clear that when *B* is produced in its totality by *A*, which differs in essence from *B*, *B* has its existence *ex nihilo*. For that which is produced in its totality, is produced both in its matter and form; but matter does not have something out of which it can be produced, because it is not out of God.¹²² It is clear, then, that it is produced *ex nihilo*. The truth of the minor premise – namely that the world is produced in its totality by God – is clear from another question.¹²³

The structure of the argument is this:

Major premise: It is impossible for that which has being after non-being to have beginningless existence because this implies a contradiction.

Minor: But the world has being after non-being.

Conclusion: Therefore it is impossible that it be beginningless.

Unfortunately, all the work in III.f goes towards justifying the minor premise and the major premise is accepted without comment as a *per se* known proposition. This is unfortunate because Aquinas rejected this premise, which seemed so obvious to Bonaventure. P. van Veldhuijsen (1990) argues that, for Bonaventure, “*ex nihilo* means necessarily and exclusively *in principio*” so that if Bonaventure has established the *ex nihilo* creation of the world in the preceding question in the *Sentences* commentary (“Does the world have a causal principle?”), he

¹²⁰ Ultima ratio ad hoc est: impossibile est, quod habet esse post non-esse habere esse aeternum, quoniam hic est implicatio contradictionis; sed mundus habet esse post non-esse: ergo impossibile est esse aeternum.

¹²¹ Materialiter versus originaliter. Deferrari says that, at least in Thomas Aquinas, originaliter can be synonymous with principaliter or primordialiter (884a).

¹²² Since God is not a material substance, it would be impossible for the matter of the world to come from God in the way that we might use timber (matter) for building a house (the world) from a great forest (God).

¹²³ Namely, from the immediately preceding question, Book II, Division 1, article 1, question 1, “Does the world have a cause of its existence?” The Latin text for this support: Quod autem habeat esse post non-esse, probatur sic: omne illud quod totaliter habet esse ab aliquo, producitur ab illo ex nihilo; sed mundus totaliter habet esse a Deo: ergo mundus ex nihilo; sed non ex nihilo materialiter: ergo originaliter. Quod autem omne quod totaliter producitur ab aliquo differente per essentiam, habeat esse ex nihilo, patens est. Nam quod totaliter producitur, producitur secundum materiam et formam; sed materia non habet ex quo producatur, quia non ex Deo: manifestum est igitur, quod ex nihilo. Minor autem, scilicet quod mundus a Deo totaliter producatur, patet ex alio problemate.

need adduce here no further arguments. The basis for van Veldhuijsen's claim for this equation between *ex nihilo* creation and finite past time is Bonaventure's statement in the preceding question that Scripture says that all things were created and produced according to their kinds. The Quaracchi editors and van Veldhuijsen not unreasonably identify this statement of Scripture as Genesis 1:1, which says that God created the heavens and the earth "in the beginning". But van Veldhuijsen's line of reasoning does not take us very far. It may be true that Bonaventure linked finite past time and creation *ex nihilo* on the basis of Scripture's testimony (or, in fact, on the Catholic Church's interpretation of that passage of Scripture), but the testimony of Scripture is the wrong sort of evidence to adduce on behalf of a putatively *per se* known proposition.¹²⁴

What we want to know instead is how Bonaventure analyzed the terms in the major premise. Bonansea (1974) sees Bonaventure as analyzing the terms in this way: "production as such is indifferent to time and eternity; production *ex nihilo* involves necessarily the notion of time and change, the beginning of something that did not exist before" (24).¹²⁵ Bonansea cites Bonaventure's example of a "production" that does not require time and change, the generation of God the Son by God the Father. But this does not advance the insight beyond what we could already see from the two examples Bonaventure finds convincing in Section IV: the beginningless footprint in the sand made by a beginningless foot and the beginningless shadow caused by a beginningless light source and a beginningless intervening object. Bonaventure accepts these instances of beginningless production because the material out of which the

¹²⁴ Part of what I say about *per se* known propositions below: a proposition is *per se* known if the predicate is contained in the subject. In other words, if a person has thoroughly cognized the subject, he cannot fail to know the predicate. For example, if the subject is "human being", a person who has intellectually grasped the essence of a human being knows that the predicate, "rational animal", necessarily holds of the subject. Thus, if "rational" and "animal" were essential properties of a human being, the proposition "a human being is a rational animal" would be *per se* known.

¹²⁵ Bonansea adds the caution that it "would be wrong to interpret Bonaventure's expression of 'being after non-being' (*esse post non-esse*) as meaning a sequence in time, as though creation would have taken place at a particular moment of time. . . . Thus when he says that being comes after non-being, he means simply that the world must have had a beginning" (22-23).

production occurs is beginningless. If the material itself must also be brought into existence at the point of creation, so that there is a beginning or origin of its existence, why does Bonaventure think that its beginning must also be temporal?

Bonaventure also discusses this question in Book I, section 44, article 1, question 4, “Could God have made the world older?” There he says:

When you ask whether God could have made the world older, this can be understood in two ways: (1) Could he have created it from eternity, although he produced it in time, and thereby it would be older? or (2) Could the world have lasted for a longer time, albeit a finite time? I believe that the first is simply impossible since it contains in itself a contradiction. For from the fact that we talk about *coming to be* we posit that the world has a beginning. But when the world is understood to be eternal, we posit that it does not have a beginning. So to ask whether God could have made the world earlier is like asking whether the world in having a beginning might not have had a beginning (I, 788).

He drills into the significance of a phrased used here, “coming to be”, in another place: “*to come to be* from nothing is to have being after nothing, and thus after non-being: so it exists in a way now in which it did not exist earlier” (II, 33). So at least part of the reason why Bonaventure thinks of *ex nihilo* creation as requiring finite past time is because he is thinking of creation as a change from one state into another. His thought is that there must be some point at which the world did not exist and another at which it does; otherwise, if it lacks the former, the state of affairs in virtue of which it is true that it has come from nothing is missing.

There is, of course, a difficulty with this way of talking about the world’s coming into existence. This language makes it sound as though the world had some sort of existence before it was created, something that Bonaventure does not, in fact, believe. This is a difficulty which generally besets discussions of creation. The trick is to propose an understanding of the change that creation *seems* to be without committing oneself to the ludicrous position that the world existed (in some way) before it existed. Not surprisingly, Bonaventure and his contemporaries had recourse to some subtle distinctions to explain so singular a change as creation.

Bonaventure's editors provide a summary of the different terms he uses in talking about creation *qua* change:

St. Bonaventure distinguishes between three types of change, namely *ad esse*, *ab esse*, and *in esse*, of which only the last is change in the proper sense as defined by Aristotle.¹²⁶ He grants that in this strict sense being created is not change; however he asserts that in a broader sense it is truly change. . . . St. Thomas, insisting on the Aristotelian definition, denies that creation is a change; he adds, however, that creation can be called a change in a lesser sense. Alexander of Hales agrees with Bonaventure along with Richard of Middleton who clearly explains this threefold manner of change and adds at the end: "So they err who say that creation must not be called change *ad esse*, if they understand thereby every type of change, because "to be produced not from another" includes the production of existence *de novo* or that existence begins." Perhaps he added this because of one of the propositions condemned by Bishop Étienne Tempier of Paris in 1276, "That creation must not be called a change *ad esse*." The censure against this proposition: "It is an error, if it is understood about every type of change." The disagreement [between Bonaventure and Aquinas] is more verbal than substantive; however, it is of some significance in answering the question of whether a created world could be beginningless.

It is surprising that Bonaventure's own editors would be so negligent in emphasizing a distinction which was clearly very important to Bonaventure's views in related areas. For these distinctions about creation *qua* change are not only of *some* moment in explaining Bonaventure's views, I think that they are most of the story. Mondreganes (1935) is of this view (cf. p. 564-65) as is Bonansea (1974) who writes:

Bonaventure therefore agrees with Aquinas in saying that creation does not involve a sequence in time or duration, but he parts company with him when he draws the conclusion that creation involves only a sequence in nature between nothing and being. There is, of course, a sequence in nature in the sense explained by Aquinas, namely, that a creature, left to itself, is nothing, and whatever of reality it has, comes to it from another being. But this sequence does not explain the actual emergence of being from nothing or, if I may speak so, the newness of being. As a matter of fact, if a mere sequence in nature in the sense explained above exists between being and non-being, the whole idea of creation as production from nothing seems to be ruled out. This apparently is what worries Bonaventure, who conceives creation as an event, and even a change or *mutatio* (23-24).

¹²⁶ Bonaventure's editors take this definition to be that in Physics VI.5: "For in a process of change we may distinguish three terms - that which changes, that in which it changes, and that to which it changes, e.g. the man, the time, and the pallor." From Hardie and Gaye's translation, Barnes (1984), vol. 1, page 399.

Bonansa is not, however, any more adept than his fellow Franciscan, Bonaventure, in demonstrating how a “mere sequence in nature” rules out creation from nothing. So I do not think that Bonansa is right to criticize Sertillanges (1945) by saying that he, “like many others, is . . . wrong when he presents Bonaventure’s notion of creation *ex nihilo* as implying the idea of duration prior to the actual existence of the world” (23). Though Bonaventure clearly did not want to suggest such a view, it is easy to see why Sertillanges and Van Steenberghen (1966) might be tempted to conclude that such is the implication of Bonaventure’s position.

Even if the explanation is not satisfying, we have seen the justification that Bonaventure brings forward on behalf of III.f.¹²⁷ Creation requires a transition from non-being to being, and this transition, Bonaventure thinks, is both one of duration (in some sense) as well as of nature. Bonaventure’s justification is all the more interesting because Aquinas takes the opposite view on the same question - he contends that creation is not a change - and this is the crux of Aquinas’ repudiation of Bonaventure’s view that a beginningless, created world is possible.

I conclude this section by noting a few other passages in which Bonaventure discusses the incompatibility between creatures and beginningless existence but in somewhat different terms than III.f. The first passage comes from the question under discussion in Bonaventure’s responses to the arguments against the preferred position. He writes at V.e.iii:

Since beginningless existence was not suited to the nature of the creature itself and it was not *fitting* that God give this most noble condition to some thing: therefore the divine will, which operates according to wisdom, did not produce [the world] beginninglessly, but in time.

What is curious here is the way in which he introduces the idea of “fittingness”. It is not, Bonaventure says, fitting that a creature should be beginningless. What content does this term

¹²⁷ Bonansa (1974) writes that “once the temporal nature of the world, any kind of world, has been established, it is no longer possible to identify it with God, an eternal and immutable being, as pantheism does” (8). Though Bonaventure is not in a position to use such a point on behalf of the argument in III.f., it is easy to see how such a concern may not have been far from the mind of Bonaventure and those who embraced the argument in III.f.

have? Is it only a matter of decorum that God should not have created a beginningless world? This passage, at first glance, seems to belie the strong nature of the argument that Bonaventure had endorsed in III.f; there, it is not only that a beginningless created world is not a good thing (in some sense), but rather that it is impossible.

There is similar language about fittingness in Book I, section 43, question 3 where Bonaventure explains why the divine power cannot make something actually infinite:

The reason is also this, because it is in no way fitting for a creature to be actually infinite. For the actually infinite is pure act; otherwise, if it had something of limitation or restriction, it would be finite; but because it is pure act, it is its own existence essentially, and no such thing receives its existence from another essence or *ex nihilo*. If, therefore, a creature, for the very reason that it is a creature, is from another and *ex nihilo*, it can in no way be pure act, in no way can it be infinite.¹²⁸

In this passage, unlike the first, we find a chain of reasoning that supports the statement about a lack of fittingness. Fittingness seems to be a fairly robust notion, perhaps even one which depends upon analytic truths. A creature cannot, so Bonaventure argues, be infinite because there is an incompatibility between being infinite and being a creature, since “creature” means, among other things, “being finite”.

Now this passage can shed light on V.e.iii only if it is correct to equate beginningless existence and being actually infinite. Although it stands to reason that an actually infinite entity would be beginningless, Bonaventure does not give any grounds for thinking that a beginningless entity must be actually infinite. So it seems not unreasonable to take his failure here to mention beginningless existence in connection with actual infinity as an acknowledgement of his own view that a beginningless existence does not entail an actual infinity. This will be a useful consideration to have in mind as we look at arguments III.a-e.

¹²⁸ Ratio est etiam, quia hoc nullo modo convenit creaturae. Infinitum enim in actu est actus purus, alioquin, si aliquid haberet de limitatione et arctatione, esset finitum; sed quod est actus purus, est suum esse per essentiam, et nihil tale accipit esse ab alia essentia nec ex nihilo. Si igitur creatura, eo ipso quod creatura, aliunde est et ex nihilo, nullo modo potest esse actus purus, nullo modo potest esse infinita.

Thus far in the examination of Book II, d.1, art.1, q.2 I have covered Bonaventure's own view of the question as he presents it in Section IV as well as in the argument of Section III.f. We have seen that Bonaventure does explicitly endorse the possibility of an uncreated, beginningless world. He also insists that a created, beginningless world is a conceptual impossibility. Now I want to consider Bonaventure's position vis-à-vis the five remaining arguments in Section III. Why should he have found them unconvincing?

The arguments of Section III against a World Infinite in Past Time

The five remaining arguments (a)-(e) of Section III are interesting for two reasons. First, we can gain insight into Bonaventure's views through an examination of those arguments which seem to favor his position but which he ultimately does not endorse. Second, these arguments, which were not original to Bonaventure, have often been repeated, in one form or another, up to the present day.¹²⁹ The defenders of arguments like (a)-(e) in Section III take such arguments to show that a beginningless world is a conceptual impossibility because the infinite past duration of the world implies the existence of an actual infinity, which is impossible.¹³⁰ Bonaventure himself says that arguments (a) – (f) are based on *per se* known propositions of reason and philosophy.¹³¹ The propositions are as follows: (a) It is impossible to add to the infinite; (b) It is impossible to order the infinite; (c) It is impossible to traverse the infinite; (d) It is impossible for the infinite to be grasped by a finite power; (e) It is impossible that the infinite exist simultaneously; (f) It is impossible for that which has being after non-being to be beginningless. Now a question arises: since argument III.f, which Bonaventure endorses as sound in the

¹²⁹ Some examples are Bentley (1692), Kant (1781/87), Huby (1971), Whitrow (1978), Craig (1993), and Brown (2005).

¹³⁰ The response to such arguments is that either (1) an actual infinity is possible or (2) the infinite past duration of the world does not require the existence of an actual infinity.

¹³¹ "Sed ad oppositum sunt rationes ex propositionibus per se notis secundum rationem et philosophiam" (20b).

Respondeo, is based on a *per se* known proposition, should we not think that he also regards Arguments (a) – (e) as sound since they, too, are based on *per se* known propositions?

To find the answer to this question will require several steps. First, we need to know what a *per se* known proposition is. Second, we need to look at the arguments themselves to determine what Bonaventure means when he says that these arguments are based on *per se* known propositions. Finally, I will offer some thoughts about how Bonaventure may have regarded these arguments.

Per se known propositions

The first thing to see about *per se* known propositions is that they are not derived from biblical revelation. So whether these arguments tell against any world with an infinite past or only a created world with an infinite past, they do not depend on principles knowable by faith alone. Second, it is important to see the technical aspect of this concept: a proposition is *per se* known if the predicate is contained in the subject. In other words, if a person has thoroughly cognized the subject, he cannot fail to know the predicate. For example, if the subject is “human being”, a person who has intellectually grasped the essence of a human being knows that the predicate, “rational animal”, necessarily holds of the subject. Thus, if “rational” and “animal” were essential properties of a human being, the proposition “a human being is a rational animal” would be *per se* known.

In the *Posterior Analytics* Aristotle elaborates on the qualities which the propositions used in demonstrative reasoning will have:

By a demonstration I mean scientific deduction [D]emonstrative understanding in particular must proceed from items which are [1] true and [2] primitive and [3]

immediate and [4] more familiar than and [5] prior to and [6] explanatory of the conclusions (2-3).¹³²

A demonstration which results in *scientia* proceeds from premises which meet the set standard (true, primitive, immediate, etc.). These requirements for the purest form of the Aristotelian demonstration are not easy to satisfy. Yet what is more important for Arguments III.a-e is the claim of epistemic certainty for the propositions from which each of the arguments begins. This epistemic certainty is then used, in part, for rhetorical effect, as though the argument must be sound because its foundation is so sure. Especially because each of the propositions concerns a mathematical concept, infinity, a party advancing such arguments can hope that an opponent will grant their status as *per se* known and so will credit as necessary the conclusions which come from them by logical inference.¹³³ As we shall see, even granting that III.a-e are *per se* known, there is plenty of reason to be skeptical about the arguments that are supposed to be built upon these propositions.

There is one additional wrinkle to consider as regards the label “*per se* known”. Davis (1996) asks about Bonaventure’s labeling of the six arguments as based on *per se* known propositions, “How, exactly, are we to take this assertion? Does Bonaventure mean to hold that both major and minor premise in each is self-evidently true?” (373). Baldner (1989) contends that Bonaventure means nothing more than that “at least one premise in each argument is self-evident” (210). Baldner continues: “It does not mean necessarily that Bonaventure regarded the arguments as sound. In fact, in each case, the self-evident proposition in question is merely a different way of stating that an actual infinity is impossible.” Davis disagrees with Baldner’s

¹³² Barnes (2002).

¹³³ In Aquinas’ commentary on the Posterior Analytics, demonstration resulting in *scientia* and cognition leading to a thorough grasp of universal real natures is often illustrated by mathematical examples, for Aquinas takes mathematical natures, as opposed to corporeal natures, to be the most readily grasped by the human mind. Cf. “Theory of Knowledge”, Scott MacDonald, in *The Cambridge Companion to Aquinas*, pp. 160-195, 1993.

view, but his disagreement is only what seems to him “quite probable” given Baldner’s alleged failure to bring forward evidence that Bonaventure regarded Arguments (a) – (e) as unsound (373). Davis offers nothing new either on the basis of the arguments themselves or on the basis of other instances of such arguments, in Bonaventure or elsewhere, to support his view of how they should be taken here. Other commentators ignore the question of the precise significance of labeling these arguments as based on *per se* known propositions. I turn now to consider the soundness of Arguments (a)-(e) in Section III.

1. *It is impossible to add to the infinite - III.a*

Bonaventure adds a brief explanation to this proposition: “this claim is manifestly *per se* [known], because everything which can receive an addition, may become larger; nothing, however, is larger than the infinite.” So the characterization of the proposition - “It is impossible to add to the infinite” - comes directly from the definition of what it means to be infinite or unbounded: the infinite is that than which nothing is larger. This claim about infinity functions as a premise in III.a:

- (1) Either the number of the moments of time is finite or infinite.
- (2) An infinite quantity is that than which there is none greater.
- (3) Assume that past time is infinite.
- (4) As the present moment of time elapses, the infinite quantity of past time is increased by the addition of the no longer present moment.
- (5) Contradiction ((2) and (4)).
- (6) So time is not infinite ((3) and (5)).
- (7) Therefore, time is finite ((1) and (6)).

Obviously, the crucial step in this argument is step (2). The claim is that because (2) *a finite quantity alone can become greater* and (4) *the quantity of elapsed time is continually becoming greater*, we ought to conclude that the number of moments of past time is finite.

At this point, Bonaventure reports an objection: “you may say that it is infinite in past time and yet is actually finite (*finitum*) with respect to the present, which now is, and accordingly, that it is from this portion, in which it is finite (*finitum*), that the ‘more’ is to be found.”¹³⁴ The objector is imagining a timeline on which 0 is the present moment and the negative integers pick out an infinity of equal, discrete moments of past time. Since time, however, does not come to an end in the present moment, but continues, so that what was once present is now past, another moment will be added to the series of elapsed moments – the 0 stands where the 1 once did. Thus the infinite series of past moments of time, i.e. one which in the medieval way of thinking could not be exceeded – “infinity plus one” was a nonsensical proposition – has been increased.

The objection assumes that past time is infinite while avoiding the direct question of whether that which is infinite (or unbounded) can be increased. It glosses the difficulty by saying that what is increased is the finite (or, bounded) end of time: it is perfectly possible to add 1, 2, 3, and so on to the sequence . . . -4, -3, -2, -1, 0. Perhaps this objection is implicitly relying on the mathematical truth that a finite quantity added to \aleph_0 is nothing more than \aleph_0 . If so, the point is a good one. Yet the defender of this argument will not accept it because he has the timeline turned around in the other direction: he sees the infinite series 1,2,3,4... as coming out of the past (since the temporal series is ordered from the past to the future), while the present and elapsing moments of time are adding to that series on its infinite, i.e. unbounded end. Now the modern mathematician will readily accept that this unbounded end may be added to – 1,2,3,4 . . . is of the same cardinality as 1,2,3,4, . . . + 1,2,3,4 . . ., each series having the cardinality \aleph_0 . The defender of this argument, however, may be allowed some recourse to common intuition. It

¹³⁴ “Si tu dicas quod infinitum est quantum ad praeterita, tamen quantum ad praesens, quod nunc est, est finitum actu; et ideo ex ea parte qua finitum est actu, est reperire maius” (21a).

seems odd, given that the number of days before 14 August 2008 is infinite and then seven more days having gone by, that we should say that the number of elapsed days is no greater than it was on July 25. Still, the argument cannot proceed by describing the past temporal series as ordered 1,2,3,4 . . . because on the assumption that past time is infinite there is not a first day nor, in fact, is there a second, third, fourth, etc. I think it is safe to say, then, that this first argument, though valid, is not sound: using a timeline and the infinite series of negative integers, an opponent may show how to add to an infinite series of past days, thus showing step (2) in the argument to be false.

2. *It is impossible to order the infinite – III.b*

The second of the arguments from *per se* known propositions addresses another characteristic of an infinite quantity: “It is impossible to order infinite things” (244).¹³⁵ “To order” means to count an infinite number of things in a series, 1,2,3,4 . . . people or trees or moments of time. Just as in the last argument, this argument also would like to move the opponent to concede that there must be some first, second, third member (and so on) in an infinite series.

There is a short preliminary argument to prove that this proposition is, in fact, *per se* known. The argument proceeds thus:

. . . every order runs from a beginning to a middle point: so if there is not a first point, there is not order. But the duration of the world or the revolutions of the heaven – if they are infinite – do not have a first: therefore, they do not have an order, one revolution is not before another . . .¹³⁶

¹³⁵ Impossible est infinita ordinari.

¹³⁶ omnis enim ordo fluit a principio in medium: si ergo non est primum, non est ordo. Sed duratio mundi sive revolutiones coeli, si sunt infinitae, non habent primum: ergo non habent ordinem: ergo una non est ante aliam . . . (244)

That an infinite quantity of past time must lack a first moment was clear to both sides of the debate over infinite past time.¹³⁷ They were right to think thus about infinite past time because an infinitely long timeline of the history of the world is bounded at the present moment and nowhere in the past. For being bounded at the present moment, it cannot also be bounded in the past, or else time would be of some finite duration; but the working assumption is that time is infinite, therefore it is not bounded in the past. So it seems clear that the proposition is *per se* evident.

What is not clear, however, is how this point can be used to argue for the necessary finitude of past time. The argument's steps are as follows:

- I. Every ordered series has some first member.
- II. The series of past moments of time is infinite and so does not have a first member.
- III. Therefore, past time is not an ordered series.
- IV. Therefore, one moment of time cannot be said to be before another.

Yet premise (1) is not a plausible claim. For it is possible to order the temporal series from the present moment. One could designate the present moment as 0 and, using a timeline, label past moments of time with the negative integers and future moments of time with the positive integers.

This method of ordering time does reveal, however, the temptation to insist on a certain way of ordering a series: it makes sense to order or count past moments of time in such a way that one begins the series with the number 1 and then moves forward using the other positive integers. If I were to think of time as being ordered from the present moment, I would continuously need to shift the timeline to account for the new location, so to speak, of the number 0. In other words, with each passing moment, what began as zero would have to become

¹³⁷ Perhaps this notion is suggested by Aristotle in Book III of the *Physics*: “Now motion is supposed to belong to the class of things which are continuous; and the infinite presents itself first in the continuous—that is how it comes about that ‘infinite’ is often used in definitions of the continuous” (253).

-1, then -2, -3, and so on. Yet while this way of ordering time seems cumbersome, it is *some* way of ordering time which does not rely on knowing (only an epistemic claim) or even having (the relevant metaphysical claim) some first moment of time.

Thus, from the first premise, this argument has missed the mark: one can accept the conclusion (“therefore one revolution is not before another: *but this is false*”) without accepting that this argument has shown that the world is finite in duration. Perhaps it is impossible for the infinite to be ordered (where “ordered” means to be counted, 1,2,3,4....). Yet an argument based on the inability to count (non-mathematically) an infinite sequence does not persuade in this case. The argument is asking the impossible of its opponent: to count an infinite temporal sequence while beginning, as it were, on the far end. To preserve the order of past, present, and future, even when there is no first moment of time, the opponent simply needs to notice that one revolution precedes another, “*una ante aliam*”. It is not necessary that there is some one revolution which is the very first revolution.

3. *It is impossible that infinite things be traversed - III.c*

The third proposition in the series of six is the most well-known and the one whose refutation is of the greatest concern to the proponents of the possibility of infinite past time. The third proposition states: *impossibile est infinita pertransiri*, “It is impossible that infinite things be traversed.” The proposition suggests an intuitively appealing argument: if past time is infinite, there is no way to reach the present moment, for the world would have had to pass through an infinity (i.e., a never ending series) of past moments to reach the present moment. Yet it is clear that the world has reached the present moment; therefore, the past must not be infinite.

After the statement of this third *per se* known proposition, Bonaventure reports an objection: “If you say that [1] they [an infinite number of past revolutions of the sun] are not traversed, because there is no first, or even that [2] they can certainly be traversed in a finite time, by this means you do not escape.”¹³⁸ The first objection is a plausible claim: if past time is infinite, no first moment of time can be found. In fact, infinite past time is often described as “beginningless,” which is meant to convey the same notion: it lacks a first moment. The second objection depends upon the curious notion that any infinity considered successively is finite. If we are speaking of solar revolutions, each of which takes a finite amount of time to complete, with an infinite amount of time in which to accomplish the task, it seems that the sun could go around the earth an infinite number of times.

A question answers both of these objections: “Did some revolution of the sun proceed today’s by an infinite amount of time or not?”¹³⁹ The negative answer is quickly swept aside: “If no revolution did, then all the revolutions are a finite distance from the present one: therefore they are all finite; therefore, they have a beginning.”¹⁴⁰ The argument is trying to force the opponent to admit that if no particular moment of time (or revolution of the sun) is at an infinite remove from the present moment (or revolution), then every moment is only finitely removed from the present. And, the argument runs, if every moment is at a finite temporal distance from the present, then there is a first moment among these moments, and so the past is finite.

But this reasoning will not work: from the fact that every moment of past time is at a finite distance (temporally speaking) from the present, it does not follow that there is a first moment. If zero is the present moment and -1 is the just past moment of time on an infinite

¹³⁸ “Si tu dicas quod non sunt pertransita, quia nulla fuit prima, aut quod etiam bene possunt pertransiri in tempore finito, per hoc non evades”

¹³⁹ “Quaero enim a te utrum aliqua revolutio praecessit hodiernam in infinitum, an nulla” (245).

¹⁴⁰ “Si nulla, ergo omnes finitae distant ab hac: ergo sunt omnes finitae; ergo habent principium.”

timeline, you will not find a non-finite integer even on a beginningless timeline. Still, there is justification for pushing in this direction: the opponent's claim about past time is not that it is a potentially endless series, but that it is an actually infinite: an actual infinity of moments has elapsed before the present moment. So the argument continues in this vein:

If some revolution [of the sun] is infinitely distant, I ask about the revolution which immediately followed that one, whether it is infinitely distant: if not, then neither is the first infinitely distant, since there is a finite distance between each; but if the distance is infinite, likewise I ask about the third, and the fourth, and so on *ad infinitum*: therefore, it is no more distant from this one than from another: therefore one is not before another: therefore, they are all simultaneous.¹⁴¹

The argument proceeds by a series of questions: “If there is some revolution at an infinite temporal interval from the present, what about the revolution which immediately comes after the one just mentioned?” In other words, for some revolution infinitely far in the past, what is the relation of the successor of the infinite revolution to the present revolution? Is it at a finite or an infinite temporal distance from the present moment? The opponent cannot take the first option because there are no finite successors of \aleph_0 . So then if the opponent takes the latter option, that the successor is at an infinite temporal distance from the present, the argument will continue asking this question about the successor of the successor and the successor of the successor of the successor and so on. The argument is trying to get the opponent to admit that every moment will be at the same remove from the present, that is, infinitely removed from the present.

The argument built around the third proposition highlights the difference between a potential infinity and an actual infinity. For of course it is also true that no integer can satisfy the argument's demand of being at an infinite remove from zero; only \aleph_0 (and its successors) meet

¹⁴¹ Si aliqua infinitum distat, quaero de revolutione quae immediate sequitur illam, utrum distet in infinitum: si non, ergo nec illa distat, quoniam finita distantia est inter utramque; si vero distat in infinitum, similiter quaero de tertia, et quarta, et sic in infinitum: ergo non magis distat ab hac una, quam ab alia: ergo una non est ante aliam: ergo omnes sunt simul (245).

this demand. But \aleph_0 does not have finite successors: if you are at \aleph_0 , so to speak, and your destination is . . . 3,2,1,0, the fact is that you cannot get there from here. Similarly, if you are at 0 and your destination is \aleph_0 , you can never make it: there are always more finite integers to count.

No one disagrees about the impossibility of the latter case – counting from 0 to \aleph_0 – so what makes the case of the past different? How can the argument's opponent allow that an infinite quantity of time has been gone through while disallowing that an infinite quantity of time may yet be gone through? The claim is that the past may be actually infinite while the future can only be potentially infinite in duration. Since Bonaventure is committed to the principle of no actual infinities, how can he look past this argument which, if sound, would rule out both created and uncreated beginningless worlds?

Bonaventure is probably content to let this argument pass for the same reason that Aquinas is. Aquinas, who, at times, is no less committed to the principal of no actual infinities, brushes aside the traversal argument by saying that an infinite number of revolutions of the sun could have been gone through provided that there was an infinite amount of time in which to do so. I will examine his argument for this at greater length in the next chapter. But that neither Aquinas nor Bonaventure should be concerned about a violation of the principal of no actual infinities is clear from the following consideration. A crucial element of this principal is that there not exist *simultaneously* an infinite number of things. This is an application of the principle to which Aquinas pays the most attention as being a more likely argument against infinite past time - if the world is beginningless and species is beginningless and the human soul is immortal, there would now exist simultaneously an actually infinite number of human souls.

Bonaventure is very aware of this concern over a beginningless world and the eternity of species, and we have already seen how he responds to it. It does not, as he thinks, force Aristotle to deny the eternity of the world, but rather to accept one of the three alternatives at IV.f. I think that this is sufficient to show that Bonaventure did not accept the traversal argument against a beginningless world any more than did Aquinas.

4. *It is impossible for an infinite number of things to be comprehended by a finite power - III.d*

This argument depends upon the claim that a special sort of actual infinity would result from infinite past time. A spiritual substance, such as an angel, if it had been around beginninglessly, like the world itself, would have witnessed an infinite number of events. Since it has a perfect memory, it would thus hold in its mind an actual infinity of memories.¹⁴² I think that we can see a number of ways to parry the attack. First, there is the line suggested by the objection contained in the argument: a spiritual substance would cognize all of these infinite events (such as revolutions of the sun) under a single type or species. The argument dismisses this objection as inadequate because there would, in fact, be an infinite number of types of events and not just an infinite number of occurrences of a single type of event. Yet even in this case, it need not be true that the angel cognizes them all simultaneously; or, if he must cognize them simultaneously, it may be said that the case as described does not, in fact, fall under the *per se* known proposition: to have simultaneous cognitive access to an infinite number of things does not require the degree of comprehension that the *per se* known proposition rules out.

¹⁴² Interestingly, although he endorsed a possibly beginningless created world, Aquinas does not deem this argument worthy of a specific retort, though he does respond explicitly to III.e, which is related.

5. *It is impossible that an infinite number of things exist simultaneously - III.e*

This argument depends on the dubious notion that because the world exists for the sake of mankind, the human species would be no less beginningless than the beginningless world itself, and as a result, there would now be in existence an infinite number of human souls, which, unlike human bodies, are incorruptible. This is an interesting premise, from an Aristotelian perspective. But if it is accepted, as is clear from Section IV of Bonaventure's discussion, Bonaventure thinks it tells against Aristotle as it forces Aristotle either to deny the immortality of the soul, or to accept that there is, in reality, but one soul, or else to endorse metempsychosis. From Bonaventure's perspective, however, there is little reason to think that he is independently committed to the premise so that it should work, in his mind, against the possibility of a beginningless world.

As for the *per se* known proposition itself, like III.c, it explicitly reiterates the principle of no actual infinities. Bonaventure's commitment to this principle is plain from Section IV, part of which we have recalled in the foregoing paragraph. Elsewhere he argues more or less explicitly for this principle. In Book I of his commentary on the *Sentences*, division 43, question 3, Bonaventure states that God's power, though infinite, is incapable of making "an actually infinite thing or an actually infinite number of things." It is not entirely clear that his arguments, even if sound, amount to a proof of the conceptual impossibility of an infinite number of things existing simultaneously because they rely on a certain understanding of God and those things which exist apart from God. But it probably is right to think of these as arguments against the conceptual

possibility of the principle in question from Bonaventure's perspective, since he thought of God's non-existence as a conceptual impossibility.¹⁴³

He offers two sets of arguments for his position, one set based on God's nature and the other based on the nature of creatures. I have labeled the former and the latter (A) and (B) respectively:

(A) It is not fitting for God, for since God is supremely good, he cannot make something unless it is good, and thus he cannot make a thing unless it is ordered to himself. Since therefore order presupposes number, and number presupposes measure, because something is not ordered to another unless it is numbered, and it is not numbered unless it is bounded. Therefore, it was necessary that God make everything in *number, weight, and measure*¹⁴⁴; and he could not nor can he do otherwise, nor can he make an actually infinite thing or an actually infinite number of things.¹⁴⁵

(B) (1) The other reason is that [to be actually infinite] is in no way proper for a creature. For an actually infinite thing is pure act - otherwise, if it had something of limitation or restriction, it would be finite; but that which is pure act is essentially its own existence, and no such thing receives existence either from another essence or *ex nihilo*. So if a creature, for the very reason that it is a creature, is from another and is *ex nihilo*, then in no way can it be pure act, in no way can it be infinite. (2) And if one creature cannot be infinite, in no way can creatures be infinite in respect of number, because it is necessary that so many creatures be reduced to one creature; but to reduce infinite things to the finite is impossible. And that they are reduced to something finite is clear: because it is necessary to posit an ordering among creatures, not only as ordered to God, but also as ordered among themselves.¹⁴⁶

The first argument (A) and the second half of the second (B) (2), in conceiving of the infinite as the unbounded or unlimited, then infer that the infinite is somehow altogether outside of the

¹⁴³ Bonaventure: "our intellect is never deficient in knowing about God *if it is*, so it cannot be ignorant of God's existence, absolutely speaking, nor even think God does not exist", *In I Sent.* d. 8, a. 1, q. 2 concl. (ed. Quaracchi I 154b); quoted in Noone & Houser 2005.

¹⁴⁴ "But thou hast arranged everything in measure and number and weight" (Wisdom 11:21).

¹⁴⁵ *Sibi non convenit: cum enim summe bonus sit, non potest aliquid facere nisi bonum, et ita non potest facere nisi rem ad se ordinatam. Quoniam igitur ordo praesupponit numerum, et numerus praesupponit mensuram, quia non ordinantur ad aliud nisi numerata, et non numerantur nisi limitata; ideo necesse fuit, Deum facere omnia in numero, pondere et mensura, nec aliter facere potuit nec potest, nec infinitum nec infinita in actu.*

¹⁴⁶ Bonaventure's editor suggests a reference to *Metaphysics* XII, ch. 10: "We must consider also in which of two ways the nature of the universe contains the good or the highest good, whether as something separate and by itself, or as the order of the parts. Probably in both ways, as an army does. For the good is found both in the order and in the leader, and more in the latter; for he does not depend on the order but it depends on him. And all things are ordered together somehow, but not all alike, - both fishes and fowls and plants; and the world is not such that one thing has nothing to do with another, but they are connected. For all are ordered together to one end."

category of number as used of everyday objects, such as when we talk about three apples or five chairs. Then, since God is not able to make a quantity of things which does not have a (finite) cardinal number, because everything quantity of things which is actual (or could be actual) has a finite cardinal, God cannot make an actually infinite number of the things. The premise that everything which exists must fall under some finite cardinal number looks question begging, especially if we leave the medieval period and introduce transfinite cardinals. On the other hand, if the medievals had been introduced to transfinite cardinals, it is not obvious that this should dislodge the proposition of III.e from its *per se* known status. The intuition that there could not exist that many things has at least *prima facie* plausibility from the fact that there are no obvious counter-examples to point to. Still, I do not think that Bonaventure has given us the kind of argument that is likely to be convincing, especially if we are expected to take something like this argument as a substantiation of the claim that the proposition of III.e is *per se* knowable.

Argument (B) (1) is rather different and suggests that for a thing to be actually infinite is for it to be the kind of thing that only God is, i.e. pure act (*actus purus*). If this were correct, it would give Bonaventure a backdoor to a premise that would make Argument (A) viable: the universe would be necessarily finite and so could not contain an infinite number of material things. Unfortunately, this says nothing about the case of *immaterial* things, such as human souls, which is the focus of III.e. Further, the whole argument depends on the dubious premise of (B) (1) that it is not sufficient for a thing to be actually infinite that it is actually infinite in just one respect, in magnitude, say, but that it is a necessary condition of being actually infinite that it is actually infinite in all respects.

Conclusion

I have tried to show, from a number of angles, that Bonaventure accepted the possibility of a beginningless, uncreated world and that he rejected the possibility of a beginningless, created world. His acceptance of the possibility of a beginningless, uncreated world depends in part on his view, as I have discussed it in a number of places, that the principle of no simultaneously existing actual infinities would not necessarily be violated by such a beginningless world. His rejection of a beginningless, created world depends not on his acceptance of the Traversal Argument (III.c) or on any other argument that an actual infinity would be realized, but on the view that creation is a type of change such that existence succeeds non-existence in a way that verges on temporal succession and which entails that time is finite in past duration.

CHAPTER 4

AQUINAS AND A BEGINNINGLESS WORLD

Introduction

Like Philip the Chancellor and Bonaventure, Thomas Aquinas believes that the actual world is finite in past duration. Unlike Philip but like Bonaventure, Aquinas accepts the conceptual possibility of a beginningless world. But Aquinas moves beyond Bonaventure in two ways. First, Aquinas brings his philosophical skills to bear in offering serious rebuttals to arguments which purport to show that past time must be finite in duration. So I make it my first task in this chapter to examine what I hope to show to be Aquinas' successful reply to the most challenging of the arguments against beginningless past time. I call this argument the Traversal Argument and have already outlined it in the Introduction of this dissertation. Briefly, the Traversal Argument claims that it is impossible for the world to come out of the past, so to speak, and reach the present moment if past time is beginningless. The second way in which Aquinas moves beyond Bonaventure is rather more obscure and so I hope that I am able to shed some light on a topic as yet unilluminated by the literature. Throughout his career, Aquinas wrestles with the principle that it is impossible for an actually infinite number of things to exist simultaneously. This principle ties into the discussion of the past time in two ways. First, it appears in an oft-repeated argument that, given the beginninglessness of species and assuming beginningless past time, there would now exist an actually infinite multitude of disembodied human souls. Second, authors writing much later, such as William Lane Craig, build a case against infinite past time on the basis that an elapsed infinity of moments of time would violate this principle of actual infinities. So while I examine Aquinas' wrestlings with this principle, including his surprising reversal of course at the very end of his career in the treatise, *De*

aeternitate mundi, I hope that his insight on this topic may have more than historical interest.

My approach to Aquinas, therefore, is not synoptic, but focused on two areas where I think his contributions may be of enduring interest. I begin where Aquinas first discusses these issues, in his commentary on the *Sentences*, Book II, section 1, question 1, article 5.

The Possibility of a Beginningless World

Just as in the case of the six arguments that Bonaventure presents against a beginningless world in his commentary on the *Sentences*, we can divide Aquinas' nine arguments against a beginningless world in *In Sent.* II.1.1.5 into two categories. Aquinas will respond to four arguments based on the nature of creation and five based on considerations of the concept of infinity. The five arguments related to infinity make these claims respectively: (a) an infinite number of days cannot be traversed; (b) an infinite number of things cannot be added to; (c) it is impossible to proceed to infinity in a chain of efficient causes; (d) if the past were beginningless, an infinite number of human souls would now exist (which is impossible); and (e) a finite power cannot produce an infinite effect. These arguments are not original to Aquinas and I have already discussed them to varying degrees, except for Argument (e), in the chapter on Bonaventure. Aquinas' Argument (a) is Bonaventure's III.c, Argument (b) is Bonaventure's III.a, Argument (c) is Bonaventure's III.b, and Argument (d) is Bonaventure's III.e.

I showed how these arguments are given in support of the preferred position in Bonaventure's commentary on the *Sentences*; yet they receive no further comment, except for III.f (that a created world must be finite in past duration), which Bonaventure explicitly endorses in his *Respondeo*. In Aquinas' commentary on the *Sentences*, these arguments are also adduced in support of the preferred position, and just as in Bonaventure's case, they do not for that reason

amount to a list of arguments that Aquinas himself endorses as sound. We can see that this is the case from a unique section appended to the usual structure of a disputed question in which Aquinas replies to each of the arguments in favor of the preferred position. Aquinas prefaces this unusual section thus:

Because responses of philosophers are found to the arguments made in support of the preferred position, which arguments I have said are not demonstrations; therefore, although these arguments reach the right conclusion, we must also reply to them, in the way that the philosophers themselves reply, lest those who hold to the eternity of the world should attack unexpectedly one who does not.¹⁴⁷

By the “right conclusion” Aquinas means that the conclusions of the arguments for the preferred position are correct inasmuch as their conclusions are consistent with the fact (known, he thinks, by revelation) that the world had a beginning. The all-important caveat is that many of these arguments purport to be demonstrations with necessary conclusions. Therefore, as a service to careless theologians, Aquinas goes through objections to the nine arguments for the preferred position showing that, though they are not wholly misguided, these nine arguments do not amount to demonstrative proofs that the world must have had a temporal beginning.

Some of the five arguments seem less than interesting, especially from a contemporary perspective. Argument (b), for instance, is premised on the mistaken notion that an infinite set does not have an infinite proper subset. Modern set theory decisively uncovered this mistake, but even someone as early as Averroes (1126-1198) seems to have seen this error. Averroes wrote in *The Incoherence of the “Incoherence”*: “Our adversaries believe that, when a proportion of more and less exists between parts, this proportion holds good also for the

¹⁴⁷ “Et quia ad rationes in contrarium factas, quas dixi demonstrationes non esse, inveniuntur philosophorum responsiones; ideo quamvis verum concludant, ad eas etiam respondendum est, secundum quod ipsi philosophi respondent, ne alicui disputanti contra tenentes aeternitatem mundi ex improvise occurrant.” Aquinas’ remarks sound just like Albert the Great’s on the same subject in his own *Sentences* commentary (~1245): “Sed contra hoc sunt rationes quarum etiam exanimabimus virtutem inferendi, propter hoc ne simplicitas ab infidelibus confundantur, si forte eas incaute proponant.”

totalities, but this is only binding when the totalities are finite. For where there is no end there is neither ‘more’ nor ‘less’” (1:9). Two of the arguments, however, are of more than parochial interest. Argument (a), the Traversal Argument, which claims that an infinite number of days cannot be traversed, has received the greatest amount of scholarly attention, both in Aquinas’ time and at the present. So part of its attraction lies in the way Aquinas’ solution to it speaks to the ongoing debate over the conceptual possibility of infinite past time. Argument (d) depends both on Catholic dogma (that the human soul is separable from the body and immortal) and Aristotelian doctrine (that species have no first member). Aquinas’ response to it reveals the way in which he struggled to accept the possibility of the simultaneous existence of an actually infinite number of things. No less than the possibility of a temporally beginningless, created world, the possibility of the simultaneous existence of an actually infinite number of things was firmly rejected by the medievals. Once again, Aquinas’ own view is surprising. To the first of these two arguments, the Traversal Argument, I now turn.

The successive completion of an actual infinity

Let us begin by putting on the table a statement of Argument (a), which I have called the Traversal Argument. Here is Aquinas’ version of this argument in his *Sentences* commentary:

If the world was beginningless, an infinite number of days preceded the present day. But it is not possible to traverse an infinite number of things. So the world would never have come to the present day.¹⁴⁸

I think that we can represent this dense, brief argument in the following way:

1. Assumption for *reductio*: the world is beginningless.
2. WB (the world is beginningless) → IDP (infinite days preceded the present).

¹⁴⁸ Praeterea, si mundus fuit ab aeterno, ergo infiniti dies praecesserunt diem istum. Sed infinita non est transire. Ergo nunquam fuisset devenire ad hunc diem; quod falsum est: ergo et cetera.

3. \therefore IDP (1,2).
4. It is impossible to traverse an infinite number of days.
5. \therefore It is impossible to traverse IDP (3,4).
6. But the world has traversed the days preceding the present.
7. \therefore \sim IDP (days preceding the present are not infinite) (5,6).
8. \therefore \sim WB (2,7).
9. WB & \sim WB (1,9).
10. \therefore The world is not beginningless (1,9).

The soundness of this argument would seem to hang upon the truth of the principle in the fourth step, “it is impossible to traverse an infinite number of days” (or any other thing for that matter).

We can find a statement of this principle in (*inter alia*) Book VIII of Aristotle’s *Physics*:

Therefore to the question whether it is possible to pass through an infinite number of units either of time or of distance we must reply that in a sense it is and in a sense it is not. If the units are actual, it is not possible; if they are potential, it is possible. For in the course of a continuous motion the traveler has traversed an infinite number of units in an accidental sense but not in an unqualified sense; for though it is an accidental characteristic of the distance to be an infinite number of half-distances, it is different in essence and being.¹⁴⁹

The principle, however, certainly does not depend on Aristotle’s authority. Nothing more controversial is involved in it than the claim that you cannot begin today and *finish* counting all of the positive integers, even if you have an unending amount of time in which to do it. In other words, an infinite number of things which have yet to be gone through will never have been gone through.

The principle upon which Argument (a) relies is fine, so what is the problem with the argument as a whole? The issue must be a misapplication of the principle to an infinite number

¹⁴⁹ See also *Physics* III 204b7-10 and *Metaphysics* XI 1066a35-b1.

of past days. At first, this sounds like a denial of step 5, that it is impossible to traverse the infinite number of days which preceded the present. But the only way to deny step 5 while keeping 4 is to deny that 3 is an instance of the kind mentioned in 4. In other words, the objector would have to deny that traversing “the infinite days which preceded the present” is an instance of traversing an “infinite number of days”. This approach does not sound promising. Instead, Aquinas will make a somewhat surprising move by denying the inference from steps 5 and 6 to step 7. That is, he will argue that from the fact that it is impossible to traverse an infinite number of days and from the fact that the world has reached the present moment, it does *not* follow that the past is finite.

Let us look at how Aquinas responds to the Traversal Argument in his *Sentences* commentary:

It is impossible that an actual infinity exists, but it is not impossible that an infinity exist in succession. For any part of an infinity taken in succession is finite. This is because “going through” cannot be understood except as a transition from some determinate point to some other determinate point. Thus, let the determinate time taken be what it may, the amount of time from that time to the present is always finite. So it is possible to come to the present time.

Or you can say that elapsed time is infinite in the past and finite in the present while the reverse is true of future time. It is possible to put a limit and a beginning (or an end) on the side of each thing with respect to which it is finite. So from the fact that elapsed time is infinite in the past some say that it follows that time does not have a beginning but an end. And therefore it follows that if a man begins counting from this day, he will not be able to count backwards to the first day; and the same would be true of counting forward through infinite future time.¹⁵⁰

¹⁵⁰ Ad tertium dicendum, quod infinitum actu impossibile est; sed infinitum esse per successionem, non est impossibile. Infiniti autem sic considerati quodlibet acceptum finitum est: transiens autem non potest intelligi nisi ex aliquo determinato ad aliquod determinatum: et ita quodcumque tempus determinatum accipiatur, semper ab illo tempore ad istud est finitum tempus; et ita est devenire ad praesens tempus. Vel potest dici, quod tempus praeteritum est ex parte anteriori infinitum, et ex posteriori finitum; tempus autem futurum e contrario. Unicuique autem ex parte illa qua finitum est, est ponere terminum, et principium vel finem. Unde ex hoc quod infinitum est tempus praeteritum ex parte anteriori, secundum eos sequitur quod non habeat principium, sed finem: et ideo sequitur quod si homo incipiat numerare a die isto, non poterit numerando pervenire ad primum diem; et e contrario sequitur de futuro.

It may appear at first that Aquinas is offering two solutions to the Traversal Argument, but in fact, I think that these are two parts of one solution. The first part concerns the nature of passage through time. The second part, albeit in a somewhat obscure fashion, answers the question of how it is possible for the world to have gone through an infinite amount of time. Each part is integral to Aquinas' solution.

In the first part, Aquinas draws our attention to the fact that passage or transition through time can only occur from one determinate point (in time) to another. This might seem obvious, but perhaps it is just the thing to say to someone arguing in the following manner. "Try counting down from \aleph_0 (which denominates the first moment of time infinitely distant in the past) to 0 (the present moment); you will find that no matter how long you count, you never get any closer to zero, the present moment. Similarly, it is impossible to come out of an infinite past and reach the present moment." Bonaventure had put the argument in these words:

If some day [call it a] infinitely preceded today, I ask about the day [call it b] which immediately preceded a , whether it infinitely preceded today or not. If not, then neither did a infinitely precede today, since there is a finite distance between a and b . But if b did infinitely precede today, I ask in a similar fashion about the third and the fourth day [before a] and so on: therefore one day is not further removed from today than another.¹⁵¹

The problem is that \aleph_0 (a putatively infinitely distant day) is not a point from which you can pass to the present for the simple reason that it is not a day on the timeline at all. The only days you can find on the timeline are those denominating by finite numbers. Aquinas' reasoning then proceeds in this way. Say that the negative integers on a timeline pick out equal, discrete moments of past time. For any moment of past time you choose, you will find that it has a corresponding negative, finite integer. In other words, there is not a moment of past time such

¹⁵¹ The conclusion would be straightforwardly laughable except for the fact that it does seem to betray some insight into the nature of infinity, namely that \aleph_0 less any integer is still \aleph_0 .

that it is at an infinite temporal distance from the present. It is therefore possible to come out of the past, even an infinite past, to the present moment of time.

Here, I imagine, the defender of the Traversal Argument will think that Aquinas has moved too quickly, and thus the need arises for the second half of his solution. For the defender of the Traversal Argument will resort to the expedient that Bonaventure gives in his own presentation of the Traversal Argument:

You may say that the days have not been gone through because there was not a first or indeed that they may be gone through in an infinite amount of time. But you will not escape in this way. For I will ask you whether some day infinitely preceded today or not. If not, then all of the preceding days are a finite distance from today. Therefore they are all finite and so they have a beginning.

The defender of the Traversal Argument thinks that he has Aquinas trapped if Aquinas insists that every past day is only finitely removed from the present day. For if every past day is finitely removed from the present - the claim that Aquinas needs to be true so that he can show that the past is traversable - in virtue of what is it true that the past is infinite?

For past time to be infinite, past time must be beginningless, which is to say that there must have been no first day or moment of infinite past time. This also means that there was never a time at which the universe was of a merely finite age and then, *per impossibile*, became infinite in age. As Aquinas says in his solution, the world cannot start from a determinate point in time and go forward through to the end of an infinite number of days. Accordingly, there is a twofold confusion in describing the universe as “passing through” infinite past time. In the first place, passage through time requires two determinate points, e.g. the present moment and another moment, say, a year ago. Importantly, any point will satisfy the requirement for this other moment, for any point on the timeline, even a beginningless timeline, is finitely distant from the present. Second, there was not a time at which the universe had yet to pass through

infinite past time, and if there had been, it could not have done so. Instead, on the assumption that the world is beginningless, the world must always have been infinite in past duration; this conclusion follows straightforwardly from what it means for something to be temporally beginningless. So Aquinas needs these two pieces in his solution: (i) passage through time occurs in finite steps; and (ii) a beginningless world is one which *always has been* infinite in past duration, not one that *became* infinite in past duration. In this way, the finite step model is no less able to explain how the world reaches the present moment of a beginningless world than it is to explain how the world reaches the present moment of a world with a finite history: in both cases, there is only a finite amount of time to traverse between any moment in the past and the present moment of time.

If we look at Aquinas' solution to the Traversal Argument in the *Summa Contra Gentiles*, Book II, Chapter 38, we can see him put his finger on these points more precisely than in the earlier *Sentences* commentary:

Although the infinite does not exist actually and all at once, it can exist successively. For, so considered, any infinite is finite. Therefore, being finite, any single one of the preceding solar revolutions could be completed; but if the world had always existed, it would not be possible to designate the first revolution of them all.¹⁵² And there would not be a question of a passing through them, which requires two extremes.¹⁵³

What does Aquinas mean when he says that any infinite is finite when considered in the way he has indicated? I think that he is making the same point here as earlier about the nature of

¹⁵² Anderson translates this sentence as “but if, on the assumption of the world’s eternity, all of them are thought of as existing simultaneously...”, a translation which was probably suggested to him by the “simul” but which does not make much sense in the context. What, after all, would it mean for periods of time to exist simultaneously? Kretzmann’s translation is better: “However, as regards all [of them] taken together, if the world has existed for ever...”, but this seems overly labored. In “simul” Kretzmann has found “taken together”, but I do not see what this adds to Aquinas’ point. If the series is beginningless, it follows by definition that there is not a first; whether they are “taken together” does not make any difference. Kretzmann’s translation does, however, help Aquinas to make the point that an infinite series that has yet to be traversed can never have been traversed.

¹⁵³ Nam infinitum, etsi non sit simul in actu, potest tamen esse in successione: quia sic quodlibet infinitum acceptum finitum est. Quaelibet igitur circulatio praecedentium transiri potuit: quia finita fuit. In omnibus autem simul, si mundus semper fuisset, non esset accipere primam. Et ita nec transitum, qui semper exigit duo extrema.

passage through time. Whether a quantity of time is infinite or finite does not bear on the way something passes through time. A thing necessarily advances by finite steps since passage requires two determinate points. But we also find here a new remark to the effect that it is impossible to designate a first element in the series of infinite past time. This brings home the point that passage through infinite past time does not involve the impossible task of completing the series 1,2,3,4,..., but rather of completing the logically possible task (assuming it was beginningless) of going through all of the counting numbers backwards and ending with ...4,3,2,1. J.J. MacIntosh (1994) gives this example:

There is nothing wrong *logically* with the notion of someone coming into the room saying, ‘...5356295141 point 3,’ and when asked ‘what are you doing?’ replying ‘I’ve just finished going through the decimal expansion for π backwards.’ It would, of course, follow that s/he/it had been muttering for an infinite length of time, *and had never started muttering*” (167).

This illustration of the principle, however, does not quite work, because s/he/it would have completed the task of counting the decimal expansion for π backwards, for any day we choose, an infinite number of days before that. Which is just to say that if the counting backwards had been going on beginninglessly, it is not possible to specify a completion date; we can only say that the task has always been completed.

I do not pretend that Aquinas has sketched this solution as plainly as he might have in his *Sentences* commentary, but with the addition of the material from the *Summa Contra Gentiles*, I do think it becomes clear that this is the sort of solution to the Traversal Argument which he endorsed. Some years after Aquinas, William Ockham (1287-1347) made these points with admirable clarity in his *Quaestiones Variarum*, q. 3:

... it is true in general that an infinite which at some time is to be traversed is never actually traversable; nor is it possible to designate the last member of such an infinite series because it is never completed. But an infinite that at no time was to be traversed but always had been traversed is traversable despite its infinity. So in virtue of the very

fact that something has been traversed which at some time was to be traversed, it is finite. But if anything has been traversed which never was to be traversed, it need not be finite but can be infinite. Now, however, if the world existed beginninglessly, it never was the case that all past years were to be traversed, because at no temporal instant would this proposition have been true: “All these years (indicating all those [now] past) are yet to be traversed.”¹⁵⁴

This is the most lucid medieval statement of the solution to the Traversal Argument which I have come across and yet even here, I think that Ockham could be more precise in one important way. In the sentence “an infinite that at no time was to be traversed but always had been traversed is traversable despite its infinity”, the term “traversable” is unhelpful. Infinite past time, like any actually infinite quantity, lacks the property of traversability. In calling an extent of time “traversable” I mean that it is an extent of time encompassed by two determinate termini. The situation is no different and is, perhaps, easier to grasp with a collection of more concrete things, such as apples. It is impossible to start with any one apple and count through to the end of an infinite pile of apples. The problem lies in the *starting*. But if the world is temporally beginningless, then the world never *began* to pass through an infinite number of past days. So even while lacking traversability, infinite past time does have the curious property of always having been traversed. That is, of beginningless time it is true that an infinite number of days, which were once in succession present, are now necessarily past.

If this is the best sort of response to give to the Traversal Argument, it is hardly surprising that the Traversal Argument should have proved so attractive to generations of philosophers. Many of the medievals, Kant, and some contemporaries can testify to its

¹⁵⁴ Lines 386-399: “... istud est generaliter verum quod infinitum, quod est aliquando pertranseundum, numquam potest actualiter pertransiri. Nec potest umquam dari ultimum talis infiniti, et hoc propter infinitatem suam semper accipiendam. Sed infinitum quod in nullo tempore fuit pertranseundum, sed semper fuit pertransitum, potest transiri non obstante infinitate sua. Unde eo ipso quod aliquid est pertransitum quod aliquando fuit pertranseundum, est finitum. Sed si aliquid sit pertransitum quod numquam fuit pertranseundum, non oportet quod ipsum sit finitum sed potest esse infinitum. Nunc autem si mundus fuisset ab aeterno, omnes revolutiones praeteritae numquam fuissent pertranseundae, quia in nullo instanti durationis haec propositio fuisset vera ‘omnes istae revolutiones – demonstratis omnibus praeteritis – sunt pertranseundae’.”

persuasive power. On its behalf we can say that, at the very least, it has the story about infinity partially correct, for an infinite past is not traversable if by “traversable” we mean starting from one determinate point and moving to another. As Kretzmann writes: “the source of [the Traversal Argument’s] illusory strength is the undeniable truth that an infinity that is to be gone through cannot ever have been gone through” (178). Instead, we should focus our evaluation on the counterintuitive result of the assumption of a beginningless world that the infinite past has always been traversed, although it is not traversable. Or is this more than counterintuitive? Does it entail a straightforward contradiction? If a necessary condition for having the property of “always having been traversed” is the possession of the property “traversable”, then we could infer that past time is both traversable and not traversable. Since this is a clear contradiction, if Aquinas (and Ockham’s) defense of a beginningless world is to stand, “traversable” must not be a necessary condition of “always having been traversed”.

The simultaneous existence of an actually infinite number of things

Argument (d), in and of itself, does not seem likely to excite much contemporary interest because its premises are so esoteric. But Aquinas often draws attention to it as posing more of a challenge than the other arguments against a beginningless world. So I want to consider it in order to tease out Aquinas’ views about actual infinities, which I think may be of enduring interest.

Although we saw him invoke the principle of no actual infinities in Argument (a) (“it is impossible that an actual infinity exist”) and in *SCG* II:38 (“the infinite does not exist actually and all at once”), it was not obvious what the principle amounted to. Two ways of understanding it seem plausible. The first, which is natural given the context of Argument (a), is the claim that

it is impossible to complete an infinite series. But rather than calling this the principle of no actual infinities, it would be specified more helpfully as the principle that it is impossible to traverse an infinite series, e.g. I cannot start at 1 and finish counting all of the positive integers. A second and, I think, the correct way to understand the principle of no actual infinities is as denying the possibility of the simultaneous existence of an infinite number of things. Yet this second way of understanding the principle of no actual infinities may seem strange in the context of a discussion about time, even beginningless time, for no more than one moment of time exists (or could exist) at a time. As Aquinas reports in his commentary on the *Physics*, Aristotle “says that time and motion are not actually infinite because nothing of time is actual except the present moment.”¹⁵⁵ Argument (d) appeals to precisely this understanding of the principle of no actual infinities – but not as regards time itself:

If the world was beginningless, there were always human beings. Therefore an infinite number of human beings have died before us. But when a person dies, his soul does not perish, but remains. So there are an infinite number of souls in existence separated from their bodies. Yet it is impossible that the actually infinite exist, as is proved in *Physics* III. Thus it is impossible that the world is beginningless.¹⁵⁶

We can give the following formal structure to this argument:

1. Assumption for *reductio*: WB (the world is beginningless).
2. WB \rightarrow IHG (there has existed an infinite number of human generations).
3. \therefore IHG (1,2).
4. IHG \rightarrow IHD (there has died an infinite number of human persons).
5. \therefore IHD (3,4).

¹⁵⁵ *In Physicorum* III.13.5: “dicit quod tempus et motus sunt infinita non in actu, quia nihil est temporis in actu nisi nunc”.

¹⁵⁶ Praeterea, si mundus semper fuit, homines semper fuerunt. Ergo infiniti homines sunt mortui ante nos. Sed homine moriente non moritur anima ejus, sed manet. Ergo modo sunt infinitae animae in actu a corporibus absolutae. Sed impossibile est infinitum esse in actu, ut in 3 Physicorum probatur. Ergo impossibile est mundum semper fuisse. There is an even more concise version of this argument in *SCG* II.38.7 as well as in *Summa Theologiae* I, 46, 2, ad 8.

6. The souls of human persons are imperishable.
7. ∴ An actually infinite number of human souls are in existence simultaneously (5,6).
8. It is impossible for an actually infinite number of things to exist simultaneously.
9. Contradiction (7,8).
10. ∴ The world is *not* beginningless (1,9).

The structure of the argument is valid, but what about the truth of its premises?

The *recherché* premise of the argument, step 2, that an infinite number of human generations must have existed in a beginningless world, comes from the Aristotelian notion of the eternity of species. Aristotle gives us some justification for this principle in the *Generation of Animals* (731b24-35):

Now some existing things are eternal and divine whilst others admit of both existence and non-existence. But that which is noble and divine is always, in virtue of its own nature, the cause of the better in such things as admit of being better or worse, and what is not eternal does admit of existence and non-existence, and can partake in the better and the worse. And soul is better than body, and the living, having soul, is thereby better than the lifeless which has none, and being is better than not being, living than not living. These, then, are the reasons of the generation of animals. For since it is impossible that such a class of things as animals should be of an eternal nature, therefore that which comes into being is eternal in the only way possible. Now it is impossible for it to be eternal as an individual . . . but it is possible for it as a species. This is why there is always a class of men and animals and plants.¹⁵⁷

This argument, such as it is, is complemented by what Aristotle says in *On Generation and Corruption* (336b25-35):

Coming-to-be and passing-away will, as we have said, always be continuous, and will never fail owing to the cause we stated. And this continuity has a sufficient reason. For in all things, as we affirm, nature always strikes after the better. Now being . . . is better than not-being; but not all things can possess being, since they are too far removed from the principle. God therefore adopted the remaining alternative, and fulfilled the perfection of the universe by making coming-to-be uninterrupted; for the greatest possible coherence would thus be secured to existence, because that coming-to-be should itself come-to-be perpetually is the closest approximation to eternal being.¹⁵⁸

¹⁵⁷ Translated by A. Platt in Barnes (1995).

¹⁵⁸ Translated by H. H. Joachim in *ibid.*

Aristotle's arguments are not likely to convince a person who was already inclined to balk at an argument like Argument (d). The case for step 2 depends on perhaps even more controversial premises which, though they seem likely to appeal to a theist on some level, probably do not make the biological claim any easier to swallow. As Baldner and Carroll write, "To such an argument [as Argument (d)] Aquinas' strongest response is . . . that . . . [i]t would have been possible for God to have created the world as eternal and to have created the species man as having a temporal beginning" (60). Whether this is the *strongest* response he might give I rather doubt, if we hope to see him confront the argument head-on at step 8. And, as a matter of fact, Aquinas does not take the easy route of sweeping aside Argument (d) by denying step 2. But if actual infinities are the kind of thing that are likely to prove metaphysically troubling, as a general point, it seems fair enough to reject step 2 for the reasons already mentioned.

If he grants the point about the eternity of species, what sort of response might we expect Aquinas to give to the central premise (step 8), that it is impossible for an actually infinite number of things to exist simultaneously? Initially, he might well take his cues from Aristotle. What did Aristotle say about the simultaneous existence of an infinite number of things? He is definitely aware that there could be some question about the matter, for at *Physics* 203b34 he asks: "is there something which is infinite or *some things which are infinitely many*?"¹⁵⁹ Ursula Coope takes him to deny to the possibility of a simultaneous, infinite plurality. Coope wonders whether, for Aristotle,

he may think that the impossibility of a contemporaneous infinite follows from the spatial finitude of the universe. He has argued (on physical grounds) that the universe must be finite in extent. It seems to follow that spatially located things, if they exist simultaneously, must all fall within certain boundaries (at the very least, they must be within the boundaries of the universe). If there were an infinite plurality of such things . . .

¹⁵⁹ . . . ἔστιν ἄπειρον ἢ ἄπειρα τῶν πλήθει; Granted, this does not put the point explicitly about the simultaneous existence of infinitely many things, but it seems a very reasonable way to understand this line.

. this would be an infinite plurality that could be confined between bounds. This, Aristotle thinks, is impossible.¹⁶⁰

We can glean support for this line of reasoning from various passages in Book III of the *Physics*. Aristotle writes on the meaning of the “infinite” at *Physics* 207a1-8: “It is not what has nothing outside it that is infinite, but what always has something outside it. . . . Thus something is infinite if, taking it quantity by quantity, we can always take something outside it.” And a little later he concludes about magnitude: “it is impossible to exceed every assigned magnitude; for if it were possible there would be something bigger than the heavens” (207b20-21).

Yet while these passages and others like them give hints about what Aristotle’s view on a simultaneous infinite number of things might be, Aristotle seems never to speak directly to that exact concern. He comes near to the question several times. At 204b13, he argues that a compound body cannot be infinite. But his argument and the way in which he frames the question depend upon his peculiar understanding of the elements: one element must balance another in the composition of the body. Interestingly, he qualifies his rejection of an infinite compound body thus: “if the elements are finite in number” (εἰ πεπερασμένα τῶ πλήθει τὰ στοιχεῖα). Presumably he adds this qualification because, if the elements were infinite in number, they could be balanced in the composition of the body in a 1-to-1 fashion. Otherwise, there is an imbalance as the infinite element in the compound overwhelms the finite element. (One element must be infinite *ex hypothesi* for the compound to be infinite if there are only a finite number of elements.) And they cannot both be infinite because, as Aquinas explains in his commentary, “the nature of an infinite body is to have infinite dimensions in every direction. And thus one thing cannot be composed of many infinite bodies, for each body would occupy the

¹⁶⁰ Ursula Coope, “Aristotle on the Infinite.”

whole world, unless one says that two bodies exist together, which is impossible.”¹⁶¹ From this passage I am not sure how much we can infer of Aristotle’s views on the simultaneous existence of an infinite number of things. Perhaps he even leaves the door open for such a thing by the qualification “if the elements are finite in number”.

Aristotle also comes close to addressing the question directly when he rejects the argument that beginningless time would prove that the actually infinite (ἐνεργεία ἄπειρον) exists. He writes: “Time indeed and movement are infinite . . . in the sense that each part that is taken passes in succession out of existence” (208a20-21).¹⁶² It is not clear whether Aristotle’s is an explicit rejection of the simultaneous existence of an infinite number of things (moments of time) or of one thing (time) regarded as an actually infinite substance of some sort. Aquinas gives the following gloss on this passage:

He says that time and motion are not actually infinite, because nothing of time is actual except the present moment. . . . But the intellect apprehends the continuity of time . . . by taking the order of before and after, such that what was first taken of time . . . does not remain as such. Hence it is not necessary to say that . . . the whole of time is infinite in act.”¹⁶³

We might think that the existence of a substance actually infinite would imply the existence of an infinite number of things, i.e. the parts of the infinite substance. For Aristotle, though, and Aquinas seems to follow him in this, the case against an actually infinite simple body is treated as something distinct from the case against the actually infinite composite body. In other words, Aristotle does not see the problem of the infinite simple body reducing to the problem of the

¹⁶¹ *In Physic.*, lib. 3 l. 8 n. 7: . . . de ratione corporis infiniti est quod habeat dimensiones infinitas in omnem partem. Et sic non potest esse quod ex pluribus corporibus infinitis aliquod unum componatur, quia quodlibet occupat totum mundum; nisi ponantur duo corpora esse simul, quod est impossibile.

¹⁶² ὁ δὲ χρόνος καὶ ἡ κίνησις ἄπειρά ἐστι . . . οὐχ ὑπομένοντος τοῦ λαμβανομένου.

¹⁶³ III.13.5: Deinde cum dicit: tempus autem et motus etc., solvit rationem acceptam ex tempore et motu. Et dicit quod tempus et motus sunt infinita non in actu, quia nihil est temporis in actu nisi nunc; neque aliquid motus est in actu nisi quoddam indivisibile: sed intellectus apprehendit continuitatem temporis et motus, accipiendo ordinem prioris et posterioris: ita tamen quod id quod primo fuit acceptum de tempore vel motu, non permanet sic. Unde non oportet dicere quod totus motus infinitus sit in actu, vel totum tempus infinitum.

infinite compound body. In the case of time, however, which seems obviously to have parts, Aristotle is still able to avoid answering the question of a simultaneous actual infinity of things because only one moment of time is actual at a given time.

Another of Aristotle's concerns over the actual infinite provides a segue into a concern that might motivate the acceptance of the premise in step 8 ("it is impossible for an actually infinite number of things to exist simultaneously"): Hilbert's Hotel-type paradoxes.¹⁶⁴ I think it is just possible to make out a foreshadowing of Hilbert's concern over the actually infinite in Aristotle: "It is plain, too, that the infinite cannot be an actual thing and a substance and principle. For any part of it that is taken will be infinite, if it has parts But the same thing cannot be many infinities" (204a20-25). He almost sees the definition of an actually infinite number of things (that it has a countable infinite subset), but then rejects it offhand. Aquinas takes up in his commentary this objection to the actually infinite, gives a fair amount of attention to explaining it and, as it seems, endorses it as sound:

Hence, if the infinite is a substance, it must be either indivisible or divided into infinite parts, which is impossible. For it is impossible for one and the same thing to be composed of many infinite things, because it would be necessary for the infinite to be terminated by another infinite.¹⁶⁵

Interestingly, the actually infinite here rejected is the actually infinite as substance, that is, as some sort of extended object. Aristotle indeed is careful to note that the *Physics* is not concerned with the question "whether the infinite can be present in mathematical objects and things which are intelligible and do not have extension" (204a35-b2). It would be wonderful if Aquinas had more to say on these lines in his commentary, as he later makes use of this distinction between

¹⁶⁴ I discuss these paradoxes in my first chapter.

¹⁶⁵ Unde oportebit quod si infinitum sit substantia, aut sit indivisibile, aut dividatur in partes infinitas, quod est impossibile; quia ex multis infinitis componi aliquid idem est impossibile, quia oporteret infinitum terminari ad aliud infinitum.

infinite quantities of extended and non-extended things in responding to Argument (d).¹⁶⁶ In particular, it would be interesting to know what Aquinas thought about the objection to the actually infinite as a substance in light Aristotle's response to the concern that time, if beginningless, is actually infinite. For instead of replying by saying that time is not an extended, concrete thing, Aristotle is content, as I have already remarked, to point out that moments of time do not exist simultaneously. This is a fair reply, but one which leaves open the question of what concerns Aristotle might have thought about an actual infinity of non-extended things.

So how does Aristotle's concern relate to Hilbert's? To give an example of a Hilbert's Hotel type paradox, let us suppose there were a library in which the shelf space was fully occupied by an infinite number of books. If a kind donor came along and wished to add another to the collection, there would be no trouble in finding space for it: the librarian would simply move each book over one spot: Book 1 moves into Book 2's place, 3 into 4's, etc. In fact, such an already filled library could accommodate a *very* kind donor who wished to add an infinite number of books to the collection. The putative paradox is that the library, *ex hypothesi*, was already completely filled. Those who point to such paradoxes as significant do not say that the problem is mathematical; rather, they suppose that medium-sized dry goods cannot behave, so to speak, in the ways that the mathematics of actual infinities seem to say that they can. Like Aristotle's about infinite substances, this objection says that certain of our intuitions about the limitations of the physical world deserve more of our sympathy than what our mathematical commitments seem to indicate is possible. There does not, unfortunately, seem to be a way to

¹⁶⁶ Instead, he simply notes what Aristotle has said and moves on without further elaboration. "Lastly he says that the question of whether there is an infinite in mathematical quantities and in intelligible things which have no magnitude is more general than what is being considered at present. For at present we intend to consider whether in sensible things, concerning which we develop natural science, there is a body infinite in size, as the ancient natural philosophers held." Latin text: Ultimo autem dicit quod ista quaestio, quae est: an infinitum sit in mathematicis quantitibus et in rebus intelligibilibus non habentibus magnitudinem, est magis universalis quam sit praesens consideratio. Nos enim intendimus ad praesens de rebus sensibilibus, de quibus tradimus scientiam naturalem: utrum in ipsis sit corpus infinitum in augmentum, ut antiqui naturales posuerunt.

decide this dispute without the party endorsing the possibility of actual infinities of extended things bringing forward an instance of such. At any rate, while Aquinas accepted as a default position Aristotle's views on the actually infinite, he nowhere indicates a specific concern over Hilbert's Hotel-type puzzles. This lack of concern is no doubt due to the fact that Georg Cantor's insights were necessary to make such paradoxes conspicuous.

So what, finally, can Aquinas bring from Aristotle to his evaluation of step 8? I think we can conclude that Aquinas took up Aristotle's concerns over actual infinities, but we should not so wholeheartedly embrace this conclusion as to ignore that it may not always tie in neatly to the concerns of Argument (d). First, this is because Aristotle's concerns over actual infinities in Book III of the *Physics* focus on infinitely large bodies rather than on quantities of things. Second, even if it is correct to read Aristotle as rejecting the possibility of an infinite number of things as existing simultaneously, he is at pains to say that with this view he has in mind physical (rather than purely intelligible) objects. Thus Aristotle may have provided Aquinas with some reason to accept step 8, but he also implicitly gives grounds for asking whether step 7 ("an actually infinite number of human souls are in existence simultaneously") is a relevant instance of the kind rejected as impossible in step 8 ("it is impossible for an actually infinite number of things to exist simultaneously").

One last general reason for accepting step 8 stems from a concern over how such an infinite number of objects could come to exist. This objection to actual infinities tries to show that the simultaneous existence of an infinite number of things requires the traversal of an infinite series. Essentially, this objection boils down the problem of the simultaneous existence of an infinite number of things to the premise of the Traversal Argument that it is impossible to traverse an infinite number of things. We have already seen in our discussion of the Traversal

Argument how Aquinas responds to the move which turns this undoubtedly true premise against the possibility of a beginningless world. Given the confidence of his response to the Traversal Argument, I want to consider why Aquinas often seems to have been exercised by Argument (d). Having already provided a little background through some of Aquinas' remarks upon *Physics* Book III, I will present four of his responses to Argument (d) in chronological order, for they show some interesting variations over time. I shall argue that, given his commitments elsewhere, he should not have been worried by this problem.

We find Aquinas' earliest response to Argument (d) in his *Sentences* commentary (1254-1256):

[Response 1] It ought to be said that the argument about an actual infinity of souls is stronger than the others. But al-Ghazali answers it in his *Metaphysics* where he distinguishes between finite and infinite being, and he concedes that an actually infinite number of souls exist.¹⁶⁷ And he calls this an *accidental* actual infinity because rational souls which have left their bodies do not have a relation of dependence upon each other. But Averroes responds to the argument by saying that a plurality of souls do not remain after death, but out of all of them only one remains So unless this position, which he gives in the third book of his commentary on the *De anima* were proven false, the argument [about an actual infinity of souls] would not work against him.¹⁶⁸ Rabbi Moses Maimonides also touches upon this argument showing that it does not amount to a demonstrative proof.¹⁶⁹

In comparison with some of his later responses, Aquinas' response in the *Sentences* commentary is far more content to report the replies of other philosophers. This makes sense both because at the time Aquinas was a young scholar and because the argument is not really directed at his own view. We can see this for two reasons. First, Aquinas himself is committed, on the basis of the

¹⁶⁷ Al-Ghazali, *Metaphysics*, 1.1.6, ed. J.T. Muckle, *Algazel's Metaphysics: A Medieval Translation* (Toronto: St. Michael's College, 1933), p. 40-41. Quoted from Baldner and Carroll 104 (1997).

¹⁶⁸ Averroes (1126-1198) actually commented on the *De anima* three times: (1) an epitome, (2) what is called the Middle commentary, and finally (3) the Long or Grand Commentary. Cf. Ivry (2008).

¹⁶⁹ Ad sextum dicendum, quod illa objectio inter alias fortior est; sed ad hanc respondet Algazel, in sua Metaph., ubi dividit ens per finitum et infinitum; et concedit infinitas animas esse in actu: et hoc est per accidens, quia animae rationales exutae a corporibus non habent dependentiam ad invicem. Sed Commentator respondet, quod animae non remanent plures post corpus, sed ex omnibus manet una tantum, ut infra patebit; unde nisi haec positio, quam ponit in 3 de anima, primo improbaretur, ratio contra eum non concluderet. Et hanc etiam rationem tangit Rabbi Moyses, ostendens praedictam rationem non esse demonstrationem.

Catholic faith, to finite past time as a (contingent) fact. Second, while Aquinas defends the conceptual possibility of infinite past time, he does not commit himself to the eternity of species.

So why does he call this argument stronger than the others? It is not the case, I think, that Aquinas calls Argument (d) stronger because it is valid but unsound, for many, if not all, of the other arguments against a beginningless world which he examines are also valid. Since he is calling it stronger from some perspective other than his own, one basis for calling it stronger is Aristotelian science, which, as I have remarked, was committed both to beginningless time and the beginninglessness of animal species. This interpretation is not entirely satisfactory, however, because Aristotle is, of course, not committed to an immortal, separable soul. Perhaps the reason is a certain plausibility in the whole when the premises are granted. Whereas the other arguments he rejects involve misunderstandings in the premises themselves, e.g. of logical incoherence, such as we saw in the case of the Traversal Argument, it appears that Aquinas thinks a coherent scenario has been described and is not immediately sure which premise, if any, ought to yield. That is, if we assume the beginninglessness of species, the beginninglessness of the world, and immortal human souls, all of which states of affairs Aquinas has no reason to reject as incoherent in themselves, the consequence would be the simultaneous existence of an actual infinity of human souls. Should the philosopher ready to endorse all of the premises revise his view of the principle of no actual infinities? Or is there some way to preserve the original principle while also accepting these premises? If Aquinas already had such an answer in 1256, he did not reveal it in the *Sentences* commentary.

There may, however, be some indication of his view around this time in the first series of his Quodlibetal questions. Pierre Mandonnet (1926) has dated these questions to the period of 1256-1259. If this were correct, Aquinas' work on them would have followed immediately upon

his completion of the *Sentences* commentary (Mandonnet v-vi). The first question of Quodlibet 9 asks if it is possible for God to make an actual infinity (*utrum Deus possit facere infinita esse actu*). Aquinas begins his reply to this question by noting that when we say that God cannot effect a particular thing or state of affairs, this is because of some incoherence in the effect itself, not a want of power in God. Therefore, when it is claimed that an actual infinity of things is impossible, Aquinas says that we should focus on the effect. So, Aquinas asks, is it impossible for any effect (or creature) *qua* effect to be actually infinite? Or is the impossibility limited to some particular effect/creature? Those who say that any creature *qua* created cannot be actually infinite suppose that this is impossible because the creature would thereby be equal to the Creator. Aquinas rejects this by arguing that a creature, who may be actually infinite in one way, would still be inferior to the Creator, who is actually infinite in all (or at least, more) ways.¹⁷⁰ This is a refreshing response which can also be applied to the concern which had dogged the early 13th century about a beginningless creature and an eternal Creator. Philip the Chancellor located the impossibility of a beginningless creature in the absurd consequence that such a creature would be the equal of its Creator. Yet even if the creature were infinite in one respect, in virtue of being beginningless, it is not necessary to come to the disagreeable conclusion that the Creator is no greater than the creature. It seems that Aquinas does not apply this solution to the older problem here because, as we saw in Bonaventure's case, by the mid 13th century, a beginningless duration no longer seemed infinite in a problematic way. Bonaventure does not even bother replying to the Traversal Argument and Aquinas explicitly rejects it. Instead, the

¹⁷⁰ Nihil enim prohibet, illud quod est infinitum per unum modum, superari ab eo quod est infinitum pluribus modis; sicut si esset aliquod corpus infinitum secundum longitudinem, finitum vero latitudine, esset minus corpore longitudine et latitudine infinito. Dato autem quod Deus faceret aliquod corpus infinitum actu, corpus quidem hoc esset infinitum quantitate dimensiva, sed de necessitate haberet naturam speciei terminatam, et esset limitatum, ex hoc ipso quod esset res naturalis; unde non esset aequale Deo, cuius esse et essentia est modis omnibus infinita.

focus had shifted to the question of actual infinities, the point which Bonaventure uses to indict Aristotle.

Aquinas goes on in Quodlibetal IX to indicate some openness to a revised understanding of the principle of no actual infinities, which would thereby give him a basis for rejecting Argument (d) against a beginningless world. Here he follows the lead of al-Ghazali whose response to Argument (d) Aquinas cites in the passage from his *Sentences* commentary quoted earlier. As reported by Aquinas, al-Ghazali, relying on the distinction between an essentially (*per se*) ordered infinite series and an accidentally (*per accidens*) ordered infinite series, says that an infinite number of souls, which survive their bodies after death, would constitute an accidentally ordered infinite series. The argument proceeds on the supposed parallel between the immortal souls of deceased human beings and the example given in the following passage:

If the quantity, out of which the infinity arises, results from some multitude, which preserves the same order, and whose number is not necessary except accidentally, then there will be an accidental infinity. Just as if a craftsman makes a knife, in the making of which he needs many hammers, then from the fact that one after another is broken and one fills the place of another while keeping the same order – if such a multitude increases to infinity, it will be called not an essential but an accidental infinity, for the multitude of hammers is accidental to the craftsman’s work since, if the hammer had not broken, the work could equally well have been done with that one as with an infinity of hammers.¹⁷¹

This illustration will sound familiar to those who recall the way in which Aquinas rejects the possibility of an infinite regression in *per se* ordered causes (the arm moves the stick which moves the stone) while allowing an infinite succession of accidentally ordered things. Yet the application of this illustration to Argument (d) is curious for a couple of reasons. First, even from al-Ghazali’s perspective, it does not speak very well to the issue of simultaneous existence,

¹⁷¹ Si vero quantitas in qua consistit infinitum, resultet ex aliquibus pluribus, qui eundem ordinem servent, et quorum numerus non requiritur nisi per accidens; tunc erit infinitum per accidens: sicut si aliquis faber cultellum faciat, ad cuius constitutionem multis martellis indigeat, ex hoc quod unus post alium frangitur, et unus succedit in locum alterius eiusdem ordinem tenens; si talis multitudo in infinitum excrescat, dicetur infinitum per accidens, et non per se: accidit enim fabrili operi martellorum infinita multitudo, cum per unum martellum, si duraret, aequaliter posset expleri sicut per infinitos.

for the hammers are broken and so go out of existence. Of course, he could then say that the problem has only been pushed to another place, since the components of the broken hammers would still exist and thereby be an actually infinite number of things. But this move would miss the point of an important premise in Argument (d), that human souls are immortal, and so do not go the way of well-worn hammers or even the material of hammers on the most basic level. Yet even if we overlook this defect in the illustration, there is a second concern which relates directly to Aquinas' view of ordered series. In discussing causal chains in other places, Aquinas' move is to allow an infinite succession without simultaneous existence (the *per accidens* series) while denying that a sequence of causes, which depend on each other and are simultaneous, can proceed to infinity (the *per se* series). Kretzmann (1998) explains:

Aquinas thinks that a causally linked series of efficient causes does not admit of an infinite regress just in case, for each cause in the series, its causally operating is required for its immediate successor's causally operating, so that the effect is not achieved unless all the causes in the series are operating simultaneously (62-3).

Cartwright (1997) comments:

I take [Aquinas] to be saying that independently of the question whether there can exist actually infinite multitudes, it can be seen that no *per se* ordered [causal] sequence can be infinitely descending. But of course once that question has been settled, an additional argument is available: the existence of a *per se* ordered infinitely descending [causal] sequence would require that there be an actually infinite multitude" (190).

So far as I know, Aquinas nowhere unambiguously links these two issues together, but it is tempting to see a connection given his views in other places. At the very least, this is undoubtedly another instance in which a simultaneously existing, actually infinite number of things fails to get in the philosophical door.

Now if the lesson we are meant to learn from his treatment of efficient causation is not applicable to actual infinities in general, we are left with those in which the relevant dependence relation obtains. Aquinas explains this point further in Quodlibet IX.1:

So they say that the infinite *per se* does not accord with something which has actual existence because in those things which are *per se* ordered, the final member [in a series] cannot be given except through a sort of comparison with all the preceding members; and thus, if something could be infinite *per se*, an ordered influx of an infinite number of things will be necessary for making the last. And thus it can never be completed because it is not possible to traverse an infinite number of things. But the infinite *per accidens*, according to these philosophers, is possible for that which actually exists, since one part of the multitude does not depend on the other.

The crucial issue in al-Ghazali's case, as Aquinas reports it, seems to be that of simultaneous dependence. Why the concern over simultaneous dependence and actual infinities? Because it "would depend on an infinite number of things; with the result that its coming into being would never be completed since it is impossible to go through an infinite number of things."¹⁷² This is all that Aquinas offers in the way of a justification. By way of probing for clarification, I think it could well be objected that if this causal chain is not temporally sequenced, but only ordered logically, e.g. in terms of explanatory priority, it becomes less obvious why completing an infinite series is a problem. That is, since it does not take any time to complete a merely logical task, like putting all of the odd and even numbers in one-to-one correspondence by mathematical induction, it seems no less possible for an infinity of necessary conditions to be causal effective simultaneously. At any rate, Aquinas' position on essentially (*per se*) ordered series is not supposed to cut against his defense of beginningless past time in the Traversal Argument. For in an essentially ordered series, the causes or necessary conditions of a given action must be effective simultaneously; the causation is not understood as cross-temporal. In the acceptable infinite series, on the other hand, the infinite *per accidens*, the problem of simultaneous

¹⁷² . . . quia sic oporteret quod aliquid dependeret ex infinitis; unde eius generatio nunquam compleretur, cum non sit infinita pertransire. Or again, in the *Summa Contra Gentiles* (II.38), he writes: "according to the philosophers, it is impossible to proceed to infinity in the order of efficient causes which act together at the same time, because in that case the effect would have to depend on an infinite number of actions simultaneously existing. And such causes are essentially infinite, because an infinity of them is required for the effect" (Cartwright 190). Latin text: . . . causas agentes in infinitum procedere est impossibile, secundum philosophos, in causis simul agentibus: quia oporteret effectum dependere ex actionibus infinitis simul existentibus. Et huiusmodi sunt causae per se infinitae: quia earum infinitas ad causatum requiritur.

dependence does not arise. For if hammer No. 204 goes out of existence, this does not in itself take hammers 205, 206, 207, etc. out of existence. The number of hammers in this accidentally ordered series can still proceed to infinity even if, unlike in the case of souls, only a handful of them are around at any one time.

So does this give al-Ghazali or Aquinas what they need for the present question? It does, but with one minor and one major qualification. First, it is important to remember the premise about the beginninglessness of species. We must understand the infinite number of souls not as a to-be-completed collection, but as one which has always been completed (because it was beginningless). If that premise is in place, as it is in Argument (d), then Aquinas' position ought to be no different than it was in the case of the Traversal Argument. As far as the question of how to grow or gather this collection, Aquinas can think that it is possible for an infinite number of souls to exist: such a collection is possible on the assumption that there is no need to specify a first element or member. So I think that Aquinas should qualify his answer at *Summa Theologiae* PP q.7, a.4, where he says that there cannot be a simultaneous, actually infinite number of, e.g. triangles. For his response (the infinite is reduced to actuality successively and not all at once) seems to overlook the question of the formation of such a collection. If there were a beginning to the formation of such a collection, it would be impossible to complete it. But if the task had no beginning, then the formation of such a collection would always have been completed. The second qualification is more difficult to address and is also more to the point vis-à-vis Argument (d): there is nothing in the *per se / per accidens* solution which allays the concerns over actual infinities raised by Aristotle or by Hilbert's Hotel type paradoxes. In other words, even if Aquinas has shown how to make such a collection, which in principle he had already done in his solution to the Traversal Argument, he still has to show that such an actual

infinity of things could exist simultaneously. And in fact, at the time of Quodlibetal IX, Aquinas was inclined to see these types of concerns as weighty enough, not perhaps to overwhelm the opposition, but to tip the scales in favor of the no simultaneous actual infinities premise in Argument (d). He decides that the position of Averroes, who says that an actual infinity of things can exist neither *per se* nor *per accidens*, is more probable than that of al-Ghazali.¹⁷³

Aquinas justifies his endorsement of Averroes thus:

A thing inadequately specified, such that for a given property A, A is no more true of it than $\sim A$, cannot actually exist in the world. For although an intellect can conceive of an animal without conceiving of it as either rational or non-rational, it is not however possible for an animal actually to exist which is neither rational nor non-rational. And so, according to the Philosopher, a thing does not belong to a genus which does not belong to one of the genus' species.

Now every quantity is specified by a given limit of the quantity, e.g. in the species of multitude there is 2 and 3 and so on. In the species of magnitude there is 2 cubits and 3 cubits or some other fixed measure of this type. Accordingly, it is impossible that some actual quantity is found which is not bounded by a natural terminus. Moreover since the infinite pertains to [the category of] quantity and it is called infinite because it lacks a terminus, it will be impossible for the infinite actually to exist. For the Philosopher says in Book III of the *Physics* that the infinite is like matter not yet determined to some species but existing as a potentiality and that the infinite is more in essence a part and a thing bounded than a whole and a thing bounding.¹⁷⁴ Therefore, just as God cannot make a rational horse, he cannot make a being actually infinite.¹⁷⁵

¹⁷³ “The Commentator says that the actually infinite cannot exist either *per se* or *per accidens*, although the infinite *per accidens* exists potentially while the infinite *per se* does not exist at all. And thus according to him to be infinite is altogether contrary to the idea of actual existence. This position seems more correct [than al-Ghazali’s].” Latin: Sed e contra Commentator, V Metaph., dicit, quod in actu esse non potest neque infinitum per se, neque infinitum per accidens; in potentia vero invenitur infinitum per accidens, sed non infinitum per se. Et sic secundum eum, esse infinitum omnino repugnat ei quod est esse in actu; et hoc verius esse videtur. Aristotle: “The alternative then remains that the infinite has a potential existence” (206a18).

¹⁷⁴ Aristotle: “The infinite, then, exists in no other way, but in this way it does exist, potentially and by reduction. It exists fully in the sense in which we say ‘it is day’ or ‘it is the games’; and potentially as matter exists, not independently as what is finite does” (206b14-16). And: “All the other thinkers, too, evidently treat the infinite as matter – that is why it is inconsistent in them to make it what contains, and not what is contained” (208a2-4).

¹⁷⁵ Non enim potest esse actu in rerum natura aliquid non specificatum, ad diversas species indifferenter se habens. Quamvis enim intellectus concipiat animal non specificatum rationali vel irrationali differentia, non tamen potest esse actu animal quod non sit rationale vel irrationale; unde, secundum philosophum, non est in genere quod non est in aliqua eius specie. Unaquaeque vero quantitas specificatur per certam terminationem quantitatis; sicut multitudinis specie sunt duo et tria, et sic de aliis; et magnitudinis species sunt bicubitum et tricubitum, et huiusmodi: vel secundum aliquam determinatam mensuram: unde impossibile est sic inveniri aliquam quantitatem in actu quae non sit propriis terminis limitata. Cum autem infinitum congruat quantitati, et dicatur infinitum per terminum remotionem, impossibile erit infinitum esse in actu; propter quod dicit philosophus in III Physic., quod infinitum est sicut materia nondum specificata, sed sub privatione existens; et quod se habet magis in ratione partis et contenti,

This manner of repudiating even *per accidens* infinities hearkens back to Aristotelian definitions of the infinite as that which always has something more beyond it. Thus, in the case of bodies, what Aristotle thinks it means to be a body will undermine the possibility of an infinite body: “if ‘bounded by a surface’ is the definition of body there cannot be an infinite body either intelligible or sensible” (204b5-7).¹⁷⁶ Similarly, every quantity must be some determinate quantity or other. It cannot be infinite, “for number or that which has number is numerable. If then the numerable can be numbered, it would also be possible to go through the infinite” (204b7-10).¹⁷⁷ Thus, just as God cannot make a rational horse (which is by definition non-rational), he cannot, so the argument goes, make a definite number of things which lacks a definite number. Or, to put it another way, he cannot make a number of things which lacks a definite number because the only groups or collections of things which can exist are those which have a definite number.

As I have said, Aquinas concludes in Quodlibetal IX.1 that Averroes’ position seems to be the truer (*hoc verius esse videtur*). He does not, however, explain in the quodlibetal question itself his reason for refraining from fully committing to one argument rather than the other. As it turns out, I think that we can see at least part of the reason for his hesitation in his discussion of the lines just quoted from *Physics* 204b. Aquinas writes:

It must be noted, however, that these arguments are probable and proceed from things which are commonly said. They do not conclude of necessity. For one who holds that some body is infinite would not concede that it is of the nature of a body to be terminated by a surface, except perhaps in potency, even though this is probable and generally accepted.¹⁷⁸

quam totius et continentis. Et ideo, sicut Deus non potest facere equum rationalem, ita non potest facere ens actu esse infinitum.

¹⁷⁶ εἰ γὰρ ἐστὶ σώματος λόγος τὸ ἐπιπέδῳ ὀρισμένον, οὐκ ἂν εἴη σῶμα ἄπειρον, οὔτε νοητὸν οὔτε αἰσθητὸν.

¹⁷⁷ ἀλλὰ μὴν οὐδ’ ἀριθμὸς οὕτως ὡς κεχωρισμένος καὶ ἄπειρος· ἀριθμητὸν γὰρ ἀριθμὸς ἢ τὸ ἔχον ἀριθμὸν· εἰ οὖν τὸ ἀριθμητὸν ἐνδέχεται ἀριθμῆσαι, καὶ διεξελθεῖν ἂν εἴη δυνατὸν τὸ ἄπειρον.

¹⁷⁸ *In Physic.*, lib. 3 l. 8 n. 4: Attendendum est autem quod istae rationes sunt probabiles, et procedentes ex iis quae communiter dicuntur. Non enim ex necessitate concludunt: quia qui poneret aliquod corpus esse infinitum, non

Aquinas recognizes that Aristotle's argument against actually infinite bodies depends upon a definition which, though it has much to recommend it, cannot be regarded as indubitable. The same caveat applies to an infinite number of things:

Likewise he who would say that some multitude is infinite would not say that it is a number or that it has number. For number adds to multitude the concept of a measure. For number is a multitude measured by one, as is said in *Metaphysics* X. And because of this number is supposed to be a kind of discrete quantity, whereas multitude is not. Rather multitude pertains to the transcendentals.¹⁷⁹

This remark about number, though similar in structure to that about body, is harder to parse and seems to verge on an outright rejection of Aristotle's definition. It is an analytic truth, Aquinas says, that a given number of things cannot be infinite because number just is the kind of thing which is discrete and finite. This is essentially what he had already committed himself to in taking up Averroes' position in *Quodlibetal* IX.1. But here Aquinas goes farther and seems to suggest that Aristotle has attacked a straw man in the claim that a given number can be infinite. In response, Aquinas points to a distinction between number and multitude such that one kind of multitude, a multitude measured by number, must be finite, but a multitude in and of itself is not necessarily finite. This is because, so Aquinas says, a number picks out a discrete quantity whereas a multitude need not. Aquinas thus posits a meaning of the term "multitude" which does not pick out a discrete quantity, but instead belongs to the transcendentals.¹⁸⁰ A transcendental is "that which because of the analogical nature of being cannot be determined to

concederet quod de ratione corporis esset terminari superficie, nisi forte secundum potentiam; quamvis hoc sit probabile et famosum. Trans. Blackwell, Spath, Thirlkel.

¹⁷⁹ Similiter qui diceret aliquam multitudinem esse infinitam, non diceret eam esse numerum, vel numerum habere. Addit enim numerus super multitudinem rationem mensurationis: est enim numerus multitudo mensurata per unum, ut dicitur in X *Metaphys.* Et propter hoc numerus ponitur species quantitatis discretæ, non autem multitudo; sed est de transcendentibus.

¹⁸⁰ Gilles Emery in Weinandy & Yocum (2004): "Aquinas puts forward the new concept of 'transcendental multitude' (*multitudo secundum quod est transcendens*) to account for the plurality of persons who are only one God" (56).

any category or predicament” (Deferrari 1110).¹⁸¹ Aquinas uses this idea of a transcendental multitude in his discussion of plurality in the Trinity in *Summa Theologiae* PP. Q.30 a.1 ad.2:

. . . multitude, which denotes something real in creatures, is a species of quantity, and cannot be used when speaking of God: unlike transcendental multitude, which adds only indivision to those of which it is predicated. Such a kind of multitude is applicable to God.¹⁸²

Presumably it is also correct to say that there is at least one other such multitude distinct from God, for otherwise it is hard to see what Aquinas means by his remarks in the *Physics* commentary. Aquinas does not think that God is an infinity of persons (only three, in fact), though God is infinite, and in a various ways. But if God were the only transcendental multitude around or perhaps even the only thing that could be a transcendental multitude, it would be odd for Aquinas to offer this understanding of multitude as a way of allowing the existence of actual

¹⁸¹ Writing on medieval theories of analogy E. Jennifer Ashworth (2009) explains: “the doctrine of common natures suggested that terms, at least those terms which seem to fall within Aristotle’s ten categories (substance, quality, quantity and so on), each correspond to a common nature and so have a signification which is fixed and precise. . . . It also meant that terms which did not fit into Aristotle’s categorical framework needed a special account. This problem relates especially to theology, because God was thought to transcend the categories in the sense that none of them apply to him”

¹⁸² . . . multitudo quae ponit aliquid in rebus creatis, est species quantitatis; quae non transumitur in divinam praedicationem; sed tantum multitudo transcendens, quae non addit supra ea de quibus dicitur, nisi indivisionem circa singula. Et talis multitudo dicitur de Deo. Trans. Fathers of the English Dominican Province. Aquinas thus recognizes at least two senses of “multitude”. The ordinary sense of multitude might be more precisely specified as a *multitudo numeralis* (a numeric multitude) or a *multitudo mensurata per unum* (a multitude measured by one) or a *multitudo discretae quantitatis* (a multitude of a discrete quantity). The special sense of multitude is sometimes called the *multitudo absoluta* or *transcendens* (Deferrari 712).

infinities as a sort of quantity.¹⁸³ I will return to an evaluation Aquinas' use of this special sense of multitude as I present his second and third responses to Argument (d).¹⁸⁴

Response 2 appears in the *Summa Theologiae* (late 1260s-1275):

[Response 2] Those who hold the eternity of the world evade this argument in many ways. For some do not think it impossible for there to be an actual infinity of souls, as appears from the *Metaphysics* of al-Ghazali, who says that such a thing is an accidental infinity. *But this was disproved above.* Some say that the soul is corrupted with the body. And some say that of all souls only one will remain. But others, as Augustine says, asserted on this account a circuit of souls - viz. that souls separated from their bodies return again thither after a course of time; a fuller consideration of which matters will be given later. But be it noted that this argument considers only a particular case. Hence one might say that the world was eternal, or at least some creature, such as an angel, but not man. But we are considering the question in general, as to whether any creature can exist from eternity.¹⁸⁵

¹⁸³ As a sort of quantity, I say, because Aquinas has said that number is supposed to be a kind of discrete quantity – does that mean that he admits transcendental multitudes as indiscrete quantities? Otherwise, it is hard to see how he would be helping “he who would say that some multitude is infinite”. In *Summa Theologica* PP. Q.30 a.1 co., Aquinas tries to distance the concept of a transcendental multitude from that of number in the species of quantity. “Some, considering only that multitude which is a species of discrete quantity, and seeing that such kind of quantity has no place in God, asserted that the numeral terms do not denote anything real in God, but remove something from Him. . . . But we say that numeral terms predicated of God are not derived from number, a species of quantity, for in that sense they could bear only a metaphorical sense in God, like other corporeal properties, such as length, breadth, and the like; but that they are taken from multitude in a transcendent sense. Now multitude so understood has relation to the many of which it is predicated, as “one” convertible with “being” is related to being; which kind of oneness does not add anything to being, except a negation of division . . .” (trans. Fathers of the English Dominican Province).

¹⁸⁴ Chronologically, Aquinas' next treatment of this question appears in the *Summa Contra Gentiles* (1258-1264). I note it only in passing because it adds nothing substantially new to the discussion: “The objection concerning the souls, however, is more difficult. Yet the argument is not very useful, because it supposes many things. For some of those who maintained that the world is eternal also held that human souls do not survive the body. Others asserted that of all souls there remains only the separated intellect - either the agent intellect, according to some, or even the possible intellect, according to others. Still others have supposed a sort of circular movement in souls, saying that, after several ages have passed, the same souls return to bodies. And indeed there are those who do not consider it incongruous that, in the realm of things devoid of order, actual infinities should be found.” We can see that there are several similarities between Aquinas' first and second responses. As in Response 1, Aquinas reports a number of non-Catholic answers to the argument, though he now leaves their authors without credit. There are those who will respond by denying the premise that there are immortal, separable human souls. Averroes' notion of the separated intellect appears again, though with the nuance that it could be the agent *or* the possible intellect. A new non-Catholic view appears, which also figured in Bonaventure's *Respondeo*: if a finite number of immortal souls are periodically recycled through an infinite number of mortal bodies, the existence of a simultaneous, actual infinity of things would not have to be admitted. Aquinas also has a word to add about the view of those who allow actual infinities, a view with which he does not openly identify himself.

¹⁸⁵ The emphasis added is mine. Latin text: Ad octavum dicendum quod hanc rationem ponentes aeternitatem mundi multipliciter effugiunt. Quidam enim non reputant impossibile esse infinitas animas actu; ut patet in metaphysica Algazelis, dicentis hoc esse infinitum per accidens. Sed hoc improbatum est superius. Quidam vero dicunt animam corrumpi cum corpore. Quidam vero quod ex omnibus animabus remanet una tantum. Alii vero, ut Augustinus dicit, posuerunt propter hoc circuitum animarum; ut scilicet animae separatae a corporibus, post determinata temporum curricula, iterum redirent ad corpora. De quibus omnibus in sequentibus est agendum. Considerandum tamen quod

Aquinas now credits Augustine for relating the argument positing a transmigration of souls. This is also the first response in which Aquinas is explicit about the fact that the question of the world's beginninglessness need not be mixed up with the doctrine of the beginninglessness of species (and of the human species in particular). Al-Ghazali reappears in Response 2 as the author of the view that an actual infinity of separated souls would be possible since it is an accidental infinity. What is surprising, however, in the mention of al-Ghazali is Aquinas' claim to have disproven the possibility of an accidentally ordered (*per accidens*) actual infinity. Thus, at some point between the composition of Quodlibetal IX.1 and this section of the *Summa Theologiae*, Aquinas' views on actual infinities had hardened. Whereas in composing the *Sentences* commentary (1254-1256), Quodlibetal IX.1 (1256-1259) and, as I have suggested, his *Physics* commentary (1268-1269), he is open, to a certain extent, to the possibility of the simultaneous existence of an actually infinite number of things, this possibility is explicitly rejected in the *Summa Theologiae* (late 1260s-1275).¹⁸⁶

We find Aquinas' argument for his new, firmer view in *Summa Theologiae* PP, q.7, a.4. There Aquinas poses the question whether there can be an infinite multitude of things. He credits Avicenna as well as al-Ghazali with the view that an essentially ordered (*per se*), actually infinite number of things is impossible and that an accidentally ordered (*per accidens*), actually

haec ratio particularis est. Unde posset dicere aliquis quod mundus fuit aeternus, vel saltem aliqua creatura, ut Angelus; non autem homo. Nos autem intendimus universaliter, an aliqua creatura fuerit ab aeterno.

¹⁸⁶ The dating of the *Physics* commentary is somewhat controversial. Vernon Bourke in his introduction to the *Commentary on Aristotle's Physics*: "... Mansion came to the conclusion that the *terminus post quem* of Thomas' work is 1268. Another study of the chronology of the commentary argues that it precedes the *Summa Theologiae* I, the *De Potentia* and the Exposition of the *Metaphysics*. However, such arguments from doctrinal content are difficult to control and not too reliable for chronological purposes" (xxi).

infinite number of things is possible.¹⁸⁷ In reply to this position, Aquinas defends the view that both types of actual infinity are impossible.

He begins his defense by explaining what an essentially ordered actual infinity is and the problem with it: “a multitude is actually infinite essentially when an infinite multitude is necessary for something to exist.”¹⁸⁸ That is, an essentially ordered actual infinity is one in which there is a dependence relationship between the elements of the series such that for every element in the series, the simultaneous existence of the prior element is necessary for its own existence. I have already discussed this idea under Aquinas’ Response 1 to Argument (d). What deserves our attention here is his focus on excluding the possibility of an accidentally ordered, actually infinite series. Aquinas explains what it means for a series to be accidentally ordered: “A multitude is said to be infinite accidentally when an infinity of multitude is not required for the existence of something, but the multitude just happens to be infinite.”¹⁸⁹ As in *Quodlibetal IX.1*, the accidentally ordered infinite series is illustrated by a craftsman and his (infinitely) many discarded hammers. There this argument had seemed like a reasonably good one to Aquinas. Although he ultimately decided in favor of another opposed to it, he was not voluble in his reasons for dispreferring the former. I suggested that he should, in fact, accept it, if a defense of the simultaneous existence of an infinite number of things could be given. He might first need, for instance, to address the concern about fitting so many things into a universe of finite dimensions (as Aristotle may have worried). Now, in the *Summa Theologiae*, he leaves no doubt

¹⁸⁷ I^a q. 7 a. 4 co.: Respondeo dicendum quod circa hoc fuit duplex opinio. Quidam enim, sicut Avicenna et Algazel, dixerunt quod impossibile est esse multitudinem actu infinitam per se, sed infinitam per accidens multitudinem esse, non est impossibile. Dicitur enim multitudo esse infinita per se, quando requiritur ad aliquid ut multitudo infinita sit. Et hoc est impossibile esse, quia sic oporteret quod aliquid dependeret ex infinitis; unde eius generatio nunquam compleretur, cum non sit infinita pertransire. Per accidens autem dicitur multitudo infinita, quando non requiritur ad aliquid infinitas multitudinis, sed accidit ita esse.

¹⁸⁸ Dicitur enim multitudo esse infinita per se, quando requiritur ad aliquid ut multitudo infinita sit.

¹⁸⁹ Per accidens autem dicitur multitudo infinita, quando non requiritur ad aliquid infinitas multitudinis, sed accidit ita esse.

that he sees the (Aristotelian) definition of the infinite as excluding the possibility of an infinite number of things existing simultaneously. The reason is that

every kind of multitude must belong to a species of multitude. Now the species of multitude come from the species of numbers. But no species of number is infinite; for every number is multitude measured by one. Hence it is impossible that there exist an actually infinite multitude, either essentially or accidentally ordered.¹⁹⁰

This is the same argument which in Quodlibetal IX.1 he had reported as coming from Averroes; now it seems to have become his own. Cartwright has accurately, I think, outlined this argument:

- (1) Every multitude has some (cardinal) number.
- (2) There is no (infinite) cardinal number.
- (3) Therefore, there is no actually infinite multitude.¹⁹¹

The trouble, as Cartwright observes, is that the argument proves too much. That is, the premises do not warrant the restriction of multitude in the conclusion to actually infinite multitude. Thus, Aquinas seems to have given an argument which shows that there is no such thing as an infinite multitude *simpliciter*. Yet this cannot be the conclusion Aquinas wants, for his often repeated position on the possibility of a beginningless world commits him to the possibility of all sorts of non-actual infinite multitudes (e.g., moments of time, revolutions of the sun, perhaps human generations). As Cartwright goes on to point out, the first premise could be weakened to say that every *actual* multitude has some cardinal number, but “except for the fact that it would prevent the [undesired] inference, it is hard to see the point of the implied restriction” (192). He continues:

¹⁹⁰ Latin text: Quia omnem multitudinem oportet esse in aliqua specie multitudinis. Species autem multitudinis sunt secundum species numerorum. Nulla autem species numeri est infinita, quia quilibet numerus est multitudo mensurata per unum. Unde impossibile est esse multitudinem infinitam actu, sive per se, sive per accidens.

¹⁹¹ Cartwright (1997) p. 192.

The multitude of monarchs of England is not actual, in the proposed sense; yet, vagueness aside, there have been just so-and-so many of them. It is absurd to say or imply that in counting we must limit ourselves to things that exist at some one time (192).

Of course, the second premise might also be objected to if Cantor's transfinite cardinal numbers may fairly be brought into play. I think it is sufficient, though, to see that Aquinas' best attempt to rule out actually infinite multitudes, and in particular, even infinite multitudes which are not *per se* ordered, founders on its own terms. But he also gives us another argument about an accidentally infinite number of things:

Multitude in nature is created; and everything created is comprehended under some clear intention of the Creator; for no agent acts aimlessly. Hence everything created must be comprehended in a certain number. Therefore it is impossible for an actually infinite multitude to exist, even accidentally.¹⁹²

The reasoning of the second response is harder to gauge. In what sense would the Creator be acting aimlessly if an actually infinite number of things were to exist? In *Quodlibetal XII.2*, Aquinas tells us that "God acts through intellect and through the Word, which is formative of all things. So it is fitting that everything which he does is enformed. But the infinite is understood as matter without form."¹⁹³ This is not terribly helpful, but it does give us some idea of what Aquinas may have been thinking. As the medievals are frequently doing, Aquinas is emphasizing the "not bounded" etymology of the word "*in-finite*". If this is the right way to understand the argument, then Aquinas' two reasons for rejecting even the accidentally actually infinite come to nearly the same thing: given that everything which can exist has boundaries or

¹⁹² Item, multitudo in rerum natura existens est creata, et omne creatum sub aliqua certa intentione creantis comprehenditur, non enim in vanum agens aliquod operatur. Unde necesse est quod sub certo numero omnia creata comprehendantur. Impossibile est ergo esse multitudinem infinitam in actu, etiam per accidens.

¹⁹³ Cum ergo quaeritur utrum sit possibile Deo facere aliquid infinitum in actu, dicendum quod non. Potentiae enim agentis per intellectum aliquid repugnat dupliciter: uno modo quia repugnat potentiae eius; alio modo quia repugnat modo quo agit. Primo modo non repugnat potentiae Dei absolutae, quia non implicat contradictionem. Sed si consideretur modus quo Deus agit, non est possibile. Deus enim agit per intellectum et per Verbum, quod est formativum omnium; unde oportet quod omnia quae agit sint formata. Infinitum autem accipitur sicut materia sine forma; nam infinitum se tenet ex parte materiae. Si ergo Deus hoc ageret, sequeretur quod opus Dei esset aliquid informe; et hoc repugnat ei per quod agit, et modo agendi; quia per verbum suum omnia agit, quo omnia formantur.

limits – in terms of the first argument, every multitude has a cardinal number – the actually infinite cannot exist in a created world (or any world) because it is not the kind of thing that can be delimited or circumscribed. In the *Summa Theologiae*, then, the actually infinite turns out to be the kind of thing that by definition cannot exist, for anything which can exist can be surpassed, either in magnitude or in number.

From a superficial reading of the texts, this might seem like a reasonable place for Aquinas' views on these questions to come to a rest. But as we have seen, in addition to Aquinas' hesitation over these questions early in his career, there are grounds for thinking that the argument he adopts against accidentally ordered, actually infinite multitudes does not succeed. Perhaps Aquinas himself sensed these tensions. Some indication that he did comes late in his career around 1270 (Aquinas died in 1274). *On the eternity of the world (De aeternitate mundi)* is Aquinas' one treatise, albeit brief, dedicated exclusively to the question of a beginningless world. Near the end of this opusculum, he offers a final reply to Argument (d):

[Response 3] They also bring in arguments which philosophers have touched on, and then undertake to solve them. One among them is fairly difficult; it concerns the infinite number of souls: if the world has existed forever, the number of souls must now be infinite. But this argument is not to the purpose, because God could have made the world without men and souls; or he could have made men at the time he did make them, even though he had made all the rest of the world beginninglessly. Thus the souls surviving their bodies would not be infinite. *Besides, no demonstration has as yet been forthcoming that God cannot produce an actually infinite number of things.*¹⁹⁴

Once again Aquinas protests at the difficulty of the argument, though more than ever he seems to have sufficient resources to deal with it. But what we ought to find especially interesting in light of the passages I have already presented is the last sentence. First and somewhat hesitantly in

¹⁹⁴ The emphasis is mine. Latin text: Addunt etiam pro se rationes quas etiam philosophi tetigerunt et eas solverunt; inter quas illa est difficilior quae est de infinitate animarum: quia si mundus semper fuit, necesse est modo infinitas animas esse. Sed haec ratio non est ad propositum, quia Deus mundum facere potuit sine hominibus et animabus, vel tunc homines facere quando fecit, etiam si totum mundum fecisset ab aeterno; et sic non remanerent post corpora animae infinitae. *Et praeterea non est adhuc demonstratum, quod Deus non possit facere ut sint infinita actu.*

Quodlibetal IX.1 and then with firmness in *Summa Theologiae* PP, q.7, a.4, Aquinas repudiates any possibility of an actually infinite number of things existing simultaneously. As Cartwright wondered about this sentence without hazarding a response, “Is that last sentence just a polemical thrust? Or did Aquinas change his mind?”

At this juncture I think some insight can be gained by returning to the material from the *Physics* commentary which I introduced in explaining Response 1 to Argument (d). There Aquinas left open the possibility of the existence of an infinite multitude, provided it was not in the species of (discrete) quantity, but belonged to the transcendentals. So let us consider further the distinction between number, as applied to discrete quantities, and number *qua* transcendental to see if a position can be fashioned from it to take into account Aquinas’ remark in *On the eternity of the world*. Geach puts his finger on this distinction while discussing Aquinas’ theories of individuation:

Discrete quantity or ‘number’ (*numerus*) is that attribute whose different species are expressed by the predicates ‘being in one piece’, ‘being in *n* pieces’; it is one of the attributes in respect of which the same matter can undergo change. It appears to me that Aquinas was right both in recognising this attribute of things, and in refusing to hold that numerical terms *always* refer to this attribute of things (73).

Number as applied to discrete quantities means number applied to quantities of stuffs, literally pieces of this or that material. Geach then goes on to say that Aquinas was right to think that we might also use number in a sense other than one tropologically derived from spatial division.

This is where number as a transcendental comes in. Geach writes:

... we can speak of nineteen figures of the syllogism, or the three Divine Persons; and this is not a far-fetched metaphor from spatial divisions. Number, in the sense in which it does *not* mean: being in so many pieces, is what Aquinas calls transcendental; this does not mean something grand and mysterious, but merely what is now meant by ‘topic neutral’ ... you would know *nothing* as to the topic of a conversation if you merely heard number-words occurring in it from time to time” (73-4).

So it would appear that the distinction between number as applied to discrete quantities and number as a transcendental is a distinction between number as used of material and immaterial objects. If this is correct, though Aquinas does not advert to it explicitly, it seems like the kind of distinction that could explain his curious claim at the end of *On the eternity of the world*.

Of course, it is first of all necessary to understand Aquinas' claim in a way that would bring it under the aegis of this explanation. This explanation will not work, for instance, if Aquinas meant to say that it was still an open question whether God could make an actual infinity of either immaterial or *material* objects. That this was not his intention cannot be proven beyond a doubt, but it does seem a reasonable surmise in the context: he is addressing the crux of Argument (d), that the existence of an actually infinite number of *immaterial* human souls is conceptually impossible. So let us consider for a moment that he did, in fact, mean something like this: although there could not exist an actual infinity of apples, yet there might exist an actual infinity of, say, propositions about apples.¹⁹⁵

As a sort of outside confirmation of this position, the following is from the *Summa Theologiae* in which, *pace* his argument in *ST I*, 7, 4, Aquinas does seem to allow for the existence of an infinite number of immaterial things. In his argument that God knows infinite things in *ST I*, 14, 2, Aquinas states:

Since God knows not only things actual but also things possible to himself or to created things, as shown above, and as these must be infinite, it must be held that he knows infinite things. Although the knowledge of vision which has relation only to things that are, or will be, or were, is not of infinite things, as some say, for we do not say that the world is eternal, nor that generation and movement will go on for ever, so that individuals

¹⁹⁵ If this is correct, then we should probably also think of Aquinas as having accepted some decisive argument against a simultaneous actual infinity of material objects. Presumably here again it is fair to return to the *Physics* commentary where he accepts number as applied to discrete quantity as finite and bounded, "number adds to multitude the notion of a measure; for number is a multitude measured by one . . ." (Aquinas 176). This sounds like an argument against the conceptual possibility of an actually infinite number of material things. On the other hand, some of the other arguments considered sound as though they are only contingently true. For instance, the concern that the universe is such that it could not contain an infinite number of material objects is the right worry if the universe is finite but disappears if the universe is unbounded in size.

be infinitely multiplied; yet, if we consider more attentively, we must hold that God knows infinite things even by the knowledge of vision. For God knows even the thoughts and affections of hearts, which will be multiplied to infinity as rational creatures go on without end.¹⁹⁶

Aquinas says several interesting things here. First, he distinguishes between God's knowledge of actual and possible things. It makes sense to conclude that, if God knows everything actual and possible, he knows an infinite number of things. For even if the number of actual things is finite, the number of possible things is surely infinite. Second, God's "knowledge of vision" extends only to actual things, Aquinas says, but he also cleverly claims that even if God's knowledge were restricted to this narrower category, we should still say that God knows infinite things. The reason is that "God knows even the thoughts and affections of hearts, which will be multiplied to infinity as rational creatures go on without end." At first, this sounds like a mistake: granted that human souls are immortal and that they will keep thinking new thoughts endlessly, we cannot start with a finite collection of thoughts and then, by dint of lots of thinking over time, amass an infinite collection. Aquinas knows this, but since he thinks of God as existing outside of time and having the knowledge of vision of all events, things, etc. in one eternal present, it would follow that God knows an actually infinite number of things. He explains: "God does not know the infinite or infinite things, as if he enumerated part after part; since he knows all things simultaneously, and not successively, as said above. Hence there is nothing to prevent him from knowing infinite things."¹⁹⁷ Thus, I think that *ST I*, 14, 2 commits Aquinas, at some level, to the existence of an infinite number of immaterial things. At the very

¹⁹⁶ Respondeo dicendum quod, cum Deus sciat non solum ea quae sunt actu, sed etiam ea quae sunt in potentia vel sua vel creaturae, ut ostensum est; haec autem constat esse infinita; necesse est dicere quod Deus sciat infinita. Et licet scientia visionis, quae est tantum eorum quae sunt vel erunt vel fuerunt, non sit infinitorum, ut quidam dicunt, cum non ponamus mundum ab aeterno fuisse, nec generationem et motum in aeternum mansura, ut individua in infinitum multiplicentur, tamen, si diligentius consideretur, necesse est dicere quod Deus etiam scientia visionis sciat infinita. Quia Deus scit etiam cogitationes et affectiones cordium, quae in infinitum multiplicabuntur, creaturis rationalibus permanentibus absque fine.

¹⁹⁷ Deus autem non sic cognoscit infinitum vel infinita, quasi enumerando partem post partem; cum cognoscat omnia simul, non successive, ut supra dictum est. Unde nihil prohibet ipsum cognoscere infinita.

least, he has to be open to the existence of an infinite number of immaterial things from the perspective of God's eternal present, e.g. the infinite thoughts of the hearts of men. But also on the level of *possibilia* in the temporal, non-eternal sphere, if he accepts an actually infinite number of "thoughts", it seems he should be open to the existence of an actually infinite number of propositions (or some other immaterial things) expressing counterfactuals about the ways the world might have been.

If he had wanted to, could Aquinas have evaded the putative commitment of *ST I*, 14, 2 by making his view of propositions piggyback on his view of number as applied to discrete quantity? For about numbers he seems to think that they are infinite only in the sense of being potentially infinite. Thus he writes in the *Physics* commentary:

[Aristotle] says that we can always think of a number which is greater than any given number, because of the fact that magnitude is divided to infinity. For it is clear that division causes multitude. Hence the more a magnitude is divided, the greater is the multitude which arises. And thus the infinite addition of numbers follows upon the infinite division of magnitudes. And so, just as the infinite division of magnitude does not exist in act, but in potency, and exceeds every determinate quantity in smallness, as was said, so also the infinite addition of numbers does not exist in act, but in potency, and exceeds every determinate multitude.¹⁹⁸

It seems that he might in this way avoid being stuck with the existence of an actually infinite number of propositions of the recursive type, such as, If it is true that *P*, it is true that it is true that *P*. For Aquinas could represent a human as having to work through this string of propositions as though the human mind were, by the very process of considering it, generating a potentially infinite series. But it seems that a very powerful mind (perhaps an angel's) would "see" - to use Aquinas' terminology - this string of propositions in its entirety. This would be

¹⁹⁸ Book III, Lecture 12. Et dicit quod possumus semper intelligere quolibet numero dato alium maiorem, per hoc quod magnitudo dividitur in infinitum. Manifestum est enim quod divisio causat multitudinem: unde quanto plus dividitur magnitudo, tanto maior multitudo consurgit; et ideo ad infinitam divisionem magnitudinum sequitur infinita additio numerorum. Et ideo sicut infinita divisio magnitudinis non est in actu sed in potentia, et excedit omne determinatum in minus, ut dictum est; ita additio numerorum infinita non est in actu sed in potentia, et excedit omnem determinatam multitudinem.

significant because in this case, unlike with the infinite thoughts of the hearts of men, these propositions are actually infinite in the temporal present. Yet even granting that such defense is open to him in the case of recursive propositions, it is hollow if used of propositions about how the world might have been since they need not be recursive. There simply are an infinite number of propositions about how the world might have been and this fact is a counter-example sufficient to defeat the claim that it impossible for an infinite number of (immaterial) things to exist.

It is fair to say, then, that there is a certain tension in Aquinas' view about actual infinities, at least partly because of his commitment to God's knowledge as unlimited. The sentence in *On the eternity of the world* says nothing about whether the things God might bring about as actually infinite would be material or immaterial. I have argued that Aquinas' commitments in other areas should leave him open to the possibility of immaterial actual infinities. If this is correct, then Aquinas has a solution to Argument (d) against a beginningless world. He must insist on a qualification of the premise that an actually infinite number of things cannot exist simultaneously: it is true when understood of material objects and false when understood of immaterial objects. Thus it is possible, even on the assumption of the beginninglessness of the human species, for the world itself to be beginningless.

Conclusion

In his response to what I have called the Traversal Argument Aquinas successfully handled the most significant perennial challenge to the conceptual possibility of a beginningless world. He argues that, even if the world is beginningless, there is no point of time in the past separated by an infinite number of equal, discrete points from the present, and so there is no

point in time from which the world could not have reached the present. In his wrestling with Argument (d) Aquinas is more hesitant, but I think that he reached the right conclusion at the very end of *On the eternity of the world*: no conclusive demonstration of the impossibility of an actually infinite number of immaterial things had been given. What is more, Aquinas himself, though he does not always recognize them as such, gives reasons over the course of his career for thinking that such an infinity is possible.

CONCLUSION

THE SIGNIFICANCE OF PHILIP, BONAVENTURE, AND AQUINAS

I began this dissertation with a timeline illustration meant to show what has been one of the most long enduring arguments against a beginningless world. The argument tries to demonstrate that it is impossible, if past time is infinite, for the world to reach the present moment of time because this would involve the completion of an actually infinite series, which is, by definition, impossible. One thing that is interesting about Philip, Bonaventure, and Aquinas, when considered as a trio, is the way that they each respond to this argument in rather unexpected ways. Taking this argument as a starting point, I would like to conclude this dissertation by reviewing their positions in order to reflect on the significance of their contributions.

Let me begin with Philip. What we saw in Philip's handling of the problem of a beginningless world was a solution very different from those typical of the later 13th century. For even though Philip is committed to finite past time, he did not embrace the type of *a priori* or even *a posteriori* arguments such as we find in Bonaventure for the preferred position. Instead, Philip adopts the principle that nothing whose existence is caused can be eternal. Philip insists that it must also be the case that such a thing is finite in past duration. I tried to show, however, that Philip could make his point about the radical difference between the creator and the creature without the additional claim that the creature is necessarily finite in past duration.

So Philip is notable because, first of all, he does not embrace an argument like that with the timeline in the Introduction. But he is also worthy of attention because of the way in which he handles the arguments, supposedly from Aristotle, against the finite past duration of the world. He tells us that even if those arguments succeed on their own terms, they are still not *a*

priori arguments but only *a posteriori* arguments based on observations of the universe at present. If we were able to infer back from the present state of the universe to all previous states, we would be right to conclude, as Aristotle has, that time is beginningless. But like Maimonides, Philip claims that creation is a “change” unlike any other observable in the world at present and so if time does have a beginning through creation, we cannot know this through reason unaided by divine revelation. Bonaventure and Aquinas both reply to arguments that the world must be beginningless, but the significance of the discussion of such arguments is, I think, short-circuited by Philip’s position that Aristotle (or others with similar arguments) are right on their own terms, but that their theories do not reflect the fact of creation.

How does Bonaventure respond to the timeline argument? The short answer is that he does not. This is interesting in itself, though the reason for his silence is hard to gauge. Unfortunately, the absence of a direct reply to something like the timeline argument has often been taken to mean that Bonaventure endorsed such arguments against a beginningless world as sound. While it is true that, on the whole, such arguments are more favorable to his final position than arguments for a beginningless world, this is no more true of Bonaventure’s *Sentences* commentary than it is of Aquinas’ *Sentences* commentary, where such arguments are also given in support of the preferred position. So if Bonaventure is to be accused of having proved that the world must be finite in past duration, it is only fair that the same charge be leveled against Aquinas. Of course, someone will reply, in Aquinas’ *Sentences* commentary on this question, there is an unusual section devoted to Aquinas’ replies to the arguments for the preferred position. This exculpates Aquinas, but Bonaventure also deserves his day in court. In his resolution of the competing sets of arguments on the eternity of the world, Bonaventure clearly endorses the conceptual possibility of infinite past time. Where he takes his stand (and

where he differs from Aquinas) is in his insistence that a created world cannot be infinite in past duration. Like Philip, he adopts the principle that created things are necessarily finite in past duration. I do not think that Bonaventure's defense of this principle succeeds, but at the very least, if my reading of Bonaventure is correct, he is not stuck defending the principle that *no* world could have been infinite in past duration. For Bonaventure states that if matter were uncreated, it is quite reasonable to think that past time is beginningless.

Yet Bonaventure does not accept in its entirety the consistency of an Aristotelian world in which both species and time are beginningless. Although Bonaventure has no problem with beginningless past time – and thus we can conclude that he does not accept the soundness of the timeline argument in the Introduction – he does perceive a problem involving infinity and beginningless past time. He argues that Aristotle will have to find some way in his theory to avoid the simultaneous existence of an actually infinite number of immortal human souls. Never mind that Aristotle himself was not committed to the existence of an immortal human soul; Bonaventure knows that they are, in fact, immortal, and what is more, he knows that Aristotle is committed to the beginninglessness of species. The problem is that, if human souls are immortal, the human species is beginningless, and time is also beginningless, there would now exist simultaneously an actually infinite number of human souls. But it is impossible for an actually infinite number of *anything* to exist simultaneously.

Bonaventure's arguments for this principle come to about the same thing as Aquinas' arguments for the same principle: every multitude of things can be assigned a (finite) cardinal number; no cardinal can be assigned to an infinite multitude; so an infinite multitude is an impossibility. Contemporary mathematics can shed some light here, but it cannot resolve all of the questions. Even if not all cardinals are finite, there seems to be an intuitive gap between

what is mathematically consistent and what we think is possible in the world of tables and chairs. We might think, for instance, that if the universe is finite in spatial magnitude, it is impossible to fit an actual infinity of physical objects, no matter how small, within it. This is a physical impossibility, however, and not a conceptual one.

Over the course of his career, Aquinas wavered in his commitment to the principle of no actual infinities as a conceptual truth. Like Bonaventure he saw this principle as coming into question when the case of an actual infinity of souls was used to prove that past time was finite. Aquinas had little sympathy for arguments which purported to give airtight demonstrations of the finitude of past time, but he seems never to have been entirely sure just what ought to be said about the principle of no simultaneous actual infinities. In his commentary on the *Sentences*, he gives arguments both for and against this principle, but ultimately decides in favor of accepting the principle. By the time of the *Summa Theologiae*, he thinks that he has given a proof that *no* actually infinite multitude can exist simultaneously. But then in the late *On the eternity of the world* he concludes by saying that, after all, no successful proof against the simultaneous existence of an actually infinite multitude has been forthcoming. I cannot explain all of his vacillation on this question, but I have suggested that a solution may be found in the distinction between physical and non-physical infinite multitudes. I have presented evidence for this view from other parts of the *Summa Theologiae* and, in particular, from his commentary on the *Physics*.

But what about Aquinas and the timeline argument? It is interesting that both Bonaventure and Aquinas do not see an infinite past, in and of itself, as violating the principle of no actual infinities. Aquinas, however, unlike Bonaventure, expends some effort in replying to the timeline argument. The crux of his reply is that an infinite past never could have been

completed if at some time it were still to have been completed. In terms less convoluted: the past is possibly infinite only if past time never began. So it is true, Aquinas thinks, that it is impossible to complete an actually infinite series, e.g. to begin from 1 and to count all of the positive integers, but it is not the case that this principle can be invoked in discussing beginningless past time. I think that this result is likely to strike us as somewhat paradoxical, but that it is both formally valid and sound.

So then Philip, Bonaventure, and Aquinas all have something to say to discussion of this question in subsequent centuries. First of all, with Philip, the theist committed to finite past time can point to the change of creation as that event which makes all arguments for beginningless time based on the present state of the universe hypothetical. Second, it is incorrect to use Bonaventure as the star witness for the case against a beginningless world. On the contrary, Bonaventure defends the possibility of beginningless past time, even throwing in a couple of examples to drive the point home. Third, Aquinas, as many have long known, defends the possibility of beginningless past time, but he is also more liberal on the possibility of the simultaneous existence of an actually infinite number of things than some may have thought. This is significant because some contemporary discussions of this problem insist that the principle of no simultaneous actual infinities is the crux of the case against infinite past time. This is a difficult position to defend because moments of time do not exist simultaneously. But even if the argument is successfully framed so that the principle can be invoked about moments of time, Aquinas gives us reasons both for seeing the appeal of this principle as well as some grounds on which we might ultimately reject it.

APPENDIX A

Because II *Sent.*, d. 1, art. 1, q. 2 is so central to the case that I want to make in this chapter, I offer here my own translation of Bonaventure's text. It has been more than 50 years since the last published translation of this text (Byrne 1957) and there are a number of places where I thought the translation could be improved; I have marked some of these instances with footnotes. In addition, I have bulleted Bonaventure's text to make the structure of the disputed question more conspicuous.

Throughout my translation, I render *ab aeterno* as "beginninglessly". No philosopher in this debate contends that the world might be eternal, in the way that God is eternal, where to be eternal is defined by Boethius as the simultaneous possession of a limitless life. This is one way in which I have tried to improve upon Byrne's translation: he leaves *ab aeterno* as "eternally" or "from eternity". The term *ex tempore*, on the other hand, which I have translated as "temporally", is harder. Byrne translates it as "in time". Neither of these translations are very illuminating, but I think "temporally" does justice to the noncommittal nature of *ex tempore* since the translation should not be more precise than Bonaventure's own words. There are at least two senses in which the world might have been produced temporally (or *ex tempore*). First, time and everything that exists besides time might have come into existence simultaneously. Second, time may have existed before matter - or whatever we call the "stuff" that exists in time: after countless aeons have elapsed, say, the matter of the world is created or comes into existence. Philosophers who think that God exists in time would, presumably, have to endorse a view like this, at least about the actual world, which came into existence a finite number of years ago. If Bonaventure held an Aristotelian view of time, that time is the measure of motion/change, so that time (by definition) does not exist independently of things which change,

the first option would be the better way to understand *ex tempore*. But since it is not clear that Bonaventure's view of time was an imitation of the Aristotelian account, it is better that the translation remain agnostic.¹⁹⁹

Translation of In II Sent., d. 1, art. 1, q. 2

- I. Statement of the question:** “Was the world produced beginninglessly or temporally?”²⁰⁰
- II. Contrary position (not-p):** It is shown by the following that the world was not produced temporally. (The first two arguments are taken from motion.)²⁰¹
 - a.** The first argument is a direct proof.²⁰² The motion of the first moveable thing is prior to every [other] motion and change.²⁰³ But everything which begins [to exist], begins [to exist] through motion or change. Therefore the motion [of the first moveable thing] is prior to everything that begins [to exist]. But that motion could not be prior to itself or its own mobility.²⁰⁴ Therefore it is impossible that motion begin.²⁰⁵
 - i.** *Support.* The first premise is assumed and the evidence for it is this. It is an axiom in philosophy that “in every genus the complete is prior to the incomplete”²⁰⁶. Now among all the types of motion, local motion²⁰⁷ is

¹⁹⁹ Cf. Ratzinger (1959) p. 141.

²⁰⁰ Quaeritur utrum mundus productus fuerit ex tempore, an ab aeterno.

²⁰¹ Et quod non ex tempore, ostenditur duabus rationibus sumtis a motu.

²⁰² That is, a ratio ostensiva as opposed to a ratio deducens seu ducens ad impossibile; the latter is an argument that leads to the impossible (Deferrari (1948), p. 941b). Byrne misses the technical nature of the term; he translates: “...the first of which is demonstrative in the following way...” (106).

²⁰³ That is, the “primum mobile”, i.e. the “heavenly body through whose movement all local movement begins” (Deferrari 695a).

²⁰⁴ Byrne translates this sentence thus: “But that motion could not have preceded itself or its moveable thing” (106), but I do not think that is the way to go. Bonaventure wrote: “Sed ille motus non potuit esse ante se nec ante suum mobile”, but what that second clause is supposed to mean if “mobile” is understood in its usual sense, I cannot say. One aspect of the primum mobile as a astronomical/philosophical posit is that there is no moveable entity whose motion is prior to the motion of the primum mobile. So while we can speak of the mobility of the primum mobile (and hence my translation), I do not see that it could have some moveable part or component that would be possibly prior in motion to the primum mobile itself.

²⁰⁵ Prima est ostensiva sic: ante omnem motum et mutationem est motus primi mobilis; sed omne quod incipit, incipit per motum vel mutationem: ergo ante omne illud quod incipit, est motus ille. Sed ille motus non potuit esse ante se nec ante suum mobile: ergo impossibile est incipere.

²⁰⁶ Physics VIII.9 265a20: “in the order of nature, of definition, and of time alike the complete is prior to the incomplete and the imperishable to the perishable” (Barnes 442). And On the Heavens II.4 286b20: “Again, if by complete . . . we mean a thing outside which nothing can be found, and if addition is always possible to the straight

more complete, because it belongs to a completed being; and among all the types of local motion, circular motion is both faster and more complete. But such is the motion of the heavens; thus it is the most complete. Therefore it is the first.²⁰⁸

- b. The second argument is manifest through the absurdity consequent upon the alternative.²⁰⁹ Everything which comes into existence, comes into existence through motion or change. So if motion comes into existence, it comes into existence through motion or change. Then we can put the point in turn about *that* motion, etc. Therefore, either there is an infinite regress or you must posit some motion without beginning.²¹⁰ But if motion is without beginning, so is the first moveable thing, and so also is the world.²¹¹
- c. The third argument is a direct proof from time.²¹² Everything which begins either begins in an instant or in time (1). So if the world begins, it begins either in an instant or in time. But prior to every time is time and prior to every instant is time (2); so time is prior to everything which has begun. But time could not be prior to the world and motion: therefore, the world did not begin.²¹³
 - i. *Support.* The first premise (1) is *per se* known. The second premise (2), namely that there is time before every time, is clear from this, that if time flows, it was necessarily flowing earlier. Similarly, that there is time before every instant is clear thus: time is the circular measure suited to motion and the moveable. But every point in a circle is as much a beginning as an end. Therefore, every instant of time is as much a

line but never to the circular, clearly the line which embraces the circular is complete. If then the complete is prior to the incomplete . . .” (473).

²⁰⁷ That is, motus ad situm. Deferrari (1948) explains motus secundum situm as “the movement according to local position” (707a)

²⁰⁸ Prima propositio supponitur et eius probatio patet sic: quia suppositio est in philosophia, quod «in omni genere perfectum est ante imperfectum»; sed inter omnia genera motuum motus ad situm est perfectior, quia est entis completi; et inter omnia genera motuum localium motus circularis et velocior est et perfectior; sed talis est motus caeli: ergo perfectissimus, ergo primus: patet ergo etc.

²⁰⁹ The translation here uses Byrne’s eloquent phrasing of the idea behind a ratio deducens ad impossibile (105). Bonaventure says “per impossibile.” The structure is that of disjunction elimination, wherein having found A v B, thereafter ~A is found.

²¹⁰ The argument takes it for granted that this would be an unacceptable infinite regress, but does not explicitly state the rejection of that horn of the disjunct.

²¹¹ Item, ostenditur per impossibile. Omne quod exit in esse, exit per motum vel mutationem: ergo si motus exit in esse, exit per motum vel mutationem; et similiter de illo quaeritur: ergo vel est abire in infinitum, vel est ponere aliquem motum sine principio; si motum: ergo mobile, ergo et mundum.

²¹² See the first footnote on argument (a).

²¹³ Similiter ratio sumitur ostensiva a tempore sic: omne quod incipit, aut incipit in instanti, aut in tempore: si ergo mundus incipit, aut in instanti, aut in tempore. Sed ante omne tempus est tempus, et ante omne instans est tempus: ergo tempus est ante omnia quae inceperunt. Sed non potuit esse ante mundum et motum: ergo mundus non incipit.

beginning of the future as it is an end of the past. Therefore, the past was before every “now”.²¹⁴

- d. The fourth argument is also manifest through the absurdity consequent upon the alternative.²¹⁵ If time is produced, it is produced either in time or in an instant. But it is not produced in an instant, since time does not exist in an instant; therefore it is produced in time.²¹⁶ But it is possible to designate within any time an earlier and a later, a past and a future. Therefore if time was produced in time, before every time there was a time; and this is impossible.²¹⁷

These were the arguments of Aristotle, derived from the nature of the world.²¹⁸ There are other arguments of the philosophers, derived from the nature of the productive cause. Generally, these arguments can be reduced to two, of which the first is a direct proof while the second is an argument from the absurdity consequent upon the alternative.²¹⁹

- e. The first: when a sufficient and actual cause is supposed, an effect is also supposed. But God was eternally the sufficient and actual cause of the world: therefore, etc.²²⁰
- i. *Support.* The major premise is *per se* known. The minor premise – namely that God is a sufficient cause - is clear; for since he does not need anything extrinsic for the creation of the world beyond his power, wisdom, and goodness, and these three were eternally most perfect in God, it is clear that from eternity he was a sufficient cause. That he was also an actual cause is clear. For God is pure act and his own act of willing, as Aristotle says, while the saints say that he is his own acting.²²¹

²¹⁴ Prima propositio per se nota est. Secunda, scilicet quod ante omne tempus sit tempus, patet ex hoc, quod, si currit, currebat prius de necessitate. Similiter, quod ante omne instans sit tempus, patet sic: tempus est mensura circularis conveniens motui et mobili; sed omnis punctus, qui est in circulo, ita est principium, quod finis: ergo omne instans temporis ita est principium futuri, quod terminus praeteriti: ergo ante omne nunc fuit praeteritum: patet ergo etc.

²¹⁵ Byrne (106).

²¹⁶ Byrne seems to have missed a couple lines from his translation: “If time is produced, it is produced either in time or in an instant; therefore in time” (107). He has overlooked the words: “non in instanti, cum non sit in instanti” (20a).

²¹⁷ Item, per impossibile. Si tempus producitur, aut in tempore, aut in instanti. Non in instanti, cum non sit in instanti: ergo in tempore. Sed in omni tempore est ponere prius et posterius, et praeteritum et futurum: ergo si tempus in tempore fuit productum, ante omne tempus fuit tempus; et hoc est impossibile: ergo etc.

²¹⁸ Hae sunt rationes Philosophi, quae sunt sumtae a parte ipsius mundi.

²¹⁹ Item, aliae rationes philosophorum sumuntur ex parte causae producentis; et generaliter ad duas possunt reduci, quarum prima est ostensiva, secunda vero per impossibile.

²²⁰ Prima est haec: posita causa sufficienti et actuali, ponitur effectus; sed Deus ab aeterno fuit causa sufficiens et actualis ipsius mundi: ergo etc.

²²¹ Maior propositio per se nota est. Minor patet, scilicet quod Deus sit causa sufficiens; quia cum nullo extrinseco indigeat ad mundi creationem, sed solum potentia, sapientia et bonitate, et haec in Deo fuerunt perfectissima ab

- f. The second: everything which begins to act or produce, since it was not producing before it began to do so, goes from rest to action; therefore if God begins to produce the world, he is going from rest to action; but such agents experience inactivity and change and mutability. This is, however, contrary to supreme goodness and simplicity: therefore it is impossible and is a blasphemy to say of God that the world began.²²²

These are the two arguments which the commentators and more recent philosophers add to the arguments of Aristotle – or they can be reduced to these two.²²³

III. Preferred position (*p*): The world was produced temporally. Against the arguments a-f in Section II, there are six arguments based on premises which are *per se* known according to reason and philosophy:²²⁴

- a. The first premise: it is impossible to add to the infinite. This premise is known *per se* because everything which receives an addition becomes larger, “but nothing is larger than the infinite.”²²⁵ But if the world were beginningless, the past would be infinite, and so nothing more could be added to it. Yet this is clearly false because a new revolution of the sun is added daily to those that have come before it.²²⁶

aeterno, patet quod ab aeterno fuit sufficiens. Quod etiam actualis, patet: Deus enim est actus purus et suum velle, ut dicit Philosophus; et Sancti dicunt, quod est suum agere: restat ergo etc.

²²² Item, per impossibile: Omne illud quod incipit agere vel producere, cum prius non produceret, exit ab otio in actum; si ergo Deus incipit mundum producere, exit ab otio in actum; sed circa omne tale cadit otiositas et mutatio sive mutabilitas: ergo circa Deum est otiositas et mutabilitas. Hoc autem est contra summam bonitatem et contra summam simplicitatem: ergo hoc est impossibile, et blasphemia dicere de Deo, et ita, quod mundus coeperit.

²²³ Hae sunt rationes, quas commentatores et moderniores superaddunt rationibus Aristotelis, sive ad has possunt reduci.

²²⁴ There is some question about the application of “per se known”. Baldner (1989) claims that it means that at least one of the premises in each argument is per se known. Davis (1996) thinks it likely that it means that all the premises in each of the arguments given here are meant to be per se known. Byrne translates: “based on per se known propositions of reason and philosophy” (107). I think that Byrne’s translation is possible, but I do not know that it is the best. Byrne’s translation makes it sound as though there are many per se known propositions of which only a subset belong to reason and philosophy. I think, however, that the idea is this: we can know or identify which propositions/premises are per se known through reason (philosophy). The Latin text: Sed ad oppositum sunt rationes ex propositionibus per se notis secundum rationem et philosophiam.

²²⁵ Aristotle, On the Heavens I, 12, 283a6-10: “For everything is capable of acting or being acted upon, of being or not being, either for an infinite, or definitely limited space of time; and the infinite time is only a possible alternative because it is after a fashion defined, as a length of time which cannot be exceeded. But infinity in one direction is neither infinite nor defined.”

²²⁶ Prima est haec. Impossibile est infinito addi — haec est manifesta per se, quia omne illud quod recipit additionem, fit maius, «infinito autem nihil maius» — sed si mundus est sine principio, duravit in infinitum: ergo durationi eius non potest addi. Sed constat, hoc esse falsum, quia revolutio additur revolutioni omni die: ergo etc.

- i. *Objection.* You may say that although [time] is infinite in the past, it is actually finite in the present, which now is, and therefore, the addition is to be found on the end which is actually finite.²²⁷
1. *Reply.* On the contrary, it is clear that the addition is to be found in the past. It is an indubitable truth that if the world is eternal, the revolutions of the sun in its orbit are infinite. Further, for one revolution of the sun it is necessary that there have been twelve revolutions of the moon. So the moon has gone around more times than the sun, although the sun has gone around an infinite number of times. Therefore, it is on the infinite end of infinite things that the increase is found.²²⁸
- b. The second premise: it is impossible to order an infinite series.²²⁹ Every ordered series runs from a first member to an intermediate member.²³⁰ So if there is not a first, the series is not ordered. But there is not a first revolution among the revolutions of the heavens (i.e., the duration of the world), if they are infinite.

²²⁷ The editors of Bonaventure's *Opera Omnia* cite Thomas Aquinas' commentary on the Sentences at this same point (In II Sent., d.1, q.1, a.5, ad 3m and ad 4m). Byrne repeats their note in his translation. But I cannot see that the cited passage has anything to do with what Bonaventure is saying here. Rather, I think that this "objection" is coming from Bonaventure himself thinking about the passage that he had just quoted from Aristotle's *On the Heavens*. It concludes: "But infinity in one direction is neither infinite nor defined." This line could be the starting point for an argument, as we have here in the objection, that plays on the way in which the past is both beginningless (and so in a way infinite) as well as increasable (as each day passes) because bounded on the present end, and so not infinite, strictly speaking. The Latin text: Si dicas, quod infinitum est quantum ad praeterita, tamen quantum ad praesens, quod nunc est, est finitum actu, et ideo ex ea parte, qua finitum est actu, est reperire maius.

²²⁸ Contra, ostenditur, quod in praeterito est reperire maius: haec est veritas infallibilis, quod, si mundus est aeternus, revolutiones solis in orbe suo sunt infinitae; rursus, pro una revolutione solis necesse est fuisse duodecim ipsius lunae: ergo plus revoluta est luna quam sol; et sol infinities: ergo infinitorum ex ea parte, qua infinita sunt, est reperire excessum. Hoc autem est impossibile: ergo etc.

²²⁹ Literally, "it is impossible that an infinite number of things be ordered." But as the presentation of the argument will make clear, Bonaventure is not talking about a random collection of things, but about things which are essentially related in a sequence (in this case, a causal sequence).

²³⁰ Byrne's translation leaves much to be desired: "For every order flows from a principle toward a mean" (107). "Mean" would be an archaic expression, if Byrne has understood the point; as the rest of the argument makes clear, Bonaventure is talking about an ordered series of things that are related causally. We find the same language in Thomas Aquinas, *Summa Theologica*, Pars Prima, Q. 2, art. 3, contra: "in omnibus causis efficientibus ordinatis primum est causa medii et medium est causa ultimi, sive media sint plura sive unum tantum" (Deferrari 667b). Having mentioned the primum and medium Bonaventure has neglected only to mention the ultimum. *Summa contra Gentiles* 2.19 is also illustrative: "in omni motu successivo est aliquid medium inter eius extrema, quia medium est, ad quod continue motum prius venit, quam ad ultimum." This last quoted passage would nearly be applicable, since time is often metaphorically described, as Bonaventure does here, as flowing – at any rate, in motion of some kind. But it is only metaphorical: the "movement" is through a successive series of causes.

Therefore, the revolutions of the heavens are not ordered, and so one is not before another. But this is false, and so there must be some first revolution.²³¹

i. *Objection.* You may say that it is not necessary to posit a limit in an ordered series except in those that are ordered causally, because in causes there is necessarily a limit.²³²

1. *Reply.* I ask, “Why not in other things?” But in this way you will not escape anyway. For the sun never went round in the sky but it shone upon successive animal generations. Yet it is clear that an animal is ordered to its parent, from which it came causally. Therefore, if according to Aristotle and reason it is necessary to posit a limit in those things which are ordered causally, then it is necessary to posit a first animal in the generation of animals. Yet as long as the world has existed, there have been animals. Therefore, etc.²³³

c. The third premise: it is impossible to go through an infinite series. But if the world did not begin, the past revolutions of the sun would be infinite. So it is impossible to go through them. Therefore, it would be impossible to have reached this present revolution.²³⁴

i. *Objection.* You may say that the revolutions have not been gone through because there was not a first, or indeed that they may be gone through in an infinite amount of time.²³⁵

²³¹ Secunda propositio est ista. Impossibile est infinita ordinari. Omnis enim ordo fluit a principio in medium, si ergo non est primum, non est ordo; sed duratio mundi sive revolutiones caeli, si sunt infinitae, non habent primum: ergo non habent ordinem, ergo una non est ante aliam. Sed hoc est falsum: restat ergo, quod habeant primum.

²³² Si dicas, quod statum ordinis non est necesse ponere, nisi in his quae ordinantur secundum ordinem causalitatis, quia in causis necessario est status.

²³³ Quaero, quare non in aliis? Praeterea, tu ex hoc non evades: nunquam enim fuit revolutio caeli, quin fuisset generatio animalis ex animali; sed constat, quod animal ordinatur ad animal, ex quo generatur secundum ordinem causae: ergo si secundum Philosophum et rationem necesse est ponere statum in his quae ordinantur secundum ordinem causae, ergo in generatione animalium necesse est ponere primum animal. Et mundus non fuit sine animalibus: ergo etc.

²³⁴ Tertia propositio est ista. «Impossibile est infinita pertransiri»; sed si mundus non coepit, infinitae revolutiones fuerunt: ergo impossibile est illas pertransire: ergo impossibile fuit devenire usque ad hanc.

²³⁵ The Latin text: Si tu dicas, quod non sunt pertransita, quia nulla fuit prima, vel, quod etiam bene possunt pertransire in tempore infinito. It is not clear what the first alternative here is supposed to amount to – as it stands, it pretty well undermines the objector’s position right from the start. For the if the past revolutions of the sun have not been gone through, then we would not be in the present revolution; but we are, so they were. Aquinas’ answer to the traversal argument is the best (albeit brief) answer that we have from the period. The way in which he answers that question indicates that we probably ought to take the words after vel as an elaboration or explanation of the words that come before vel, rather than as a distinct, separate objection. This is why I have put the translated text into one bulleted Objection rather than two.

1. *Reply.* You will not escape in this way. For I will ask you whether some day infinitely preceded today or not. If not, then all of the preceding days are a finite distance from today. Therefore they are all finite and so they have a beginning. If some day [call it *a*] infinitely preceded today, I ask about the day [call it *b*] which immediately preceded *a*, whether it infinitely preceded today or not. If not, then neither did *a* infinitely precede today, since there is a finite distance between *a* and *b*. But if *b* did infinitely precede today, I ask in a similar fashion about the third and the fourth day [before *a*] and so on: therefore one day is not further removed from today than another. So one is not before another and they are all, therefore, simultaneous.²³⁶
- d. The fourth premise: it is impossible for an infinite series to be comprehended by a finite power. But if the world did not begin, an infinite series is comprehended by a finite power. Therefore, etc.²³⁷
 - i. *Support.*
 1. The major premise (“It is impossible,” etc.) is known *per se*.
 2. The truth of the minor premise is shown in the following way.
 - a. God alone has actually infinite power and all other things have finite power.
 - b. As long as the heavens have been in motion, there has existed a spiritual created substance, which was either the cause of the motion of the heavens or at least knew of the motion.
 - c. A spiritual substance forgets nothing.
 - d. *Conclusion.* If some spiritual substance of finite power was codurational with the heavens, there never was a revolution which it did not know (b). Nor has it forgotten any revolution (c), and so it knows all of these infinite revolutions actually. Therefore, a spiritual substance of

²³⁶ Per hoc non evades. Quaeram enim a te, utrum aliqua revolutio praecesserit hodiernam in infinitum, an nulla. Si nulla: ergo omnes finitae distant ab hac, ergo sunt omnes finitae, ergo habent principium. Si aliqua in infinitum distat; quaero de revoluzione, quae immediate sequitur illam, utrum distet in infinitum. Si non: ergo nec illa distat, quoniam finita distantia est inter utramque. Si vero distat in infinitum, similiter quaero de tertia et de quarta et sic in infinitum: ergo non magis distat ab hac una quam ab alia: ergo una non est ante aliam: ergo omnes sunt simul.

²³⁷ Quarta propositio est ista. Impossibile est infinita a virtute finita comprehendi; sed si mundus non coepit, infinita comprehenduntur a virtute finita: ergo etc.

finite power simultaneously comprehends an infinite series.²³⁸

ii. *Objection.* You may say that it is not impossible for a spiritual substance to grasp all the infinite revolutions under a single likeness, since they are altogether similar and of the same kind.²³⁹

1. *Reply.* A spiritual substance, however, would know not only the revolutions of the heavens, but also their effects. And their various and diverse effects are infinite.²⁴⁰

e. The fifth premise: it is impossible that infinitely many things exist simultaneously. But if the world was beginningless – and then the human race is also beginningless (for everything else, after a fashion, exists on behalf of the human race) and since a human being only lives for a finite time²⁴¹, there have been an infinite number of human beings. But there also have existed just as many rational souls as human beings, i.e. an infinite number. And as many souls as *have* existed, the same number *do* exist, because rational souls are incorruptible forms.²⁴² So there exists an infinite number of souls.²⁴³

i. *Objection.* For this reason you may believe in metempsychosis.

1. *Reply to (i).* The first objection is an error in philosophy because, as Aristotle holds, “each kind of act exists in its own matter”; therefore the soul, which is the perfection of one piece of matter, cannot be the perfection of another.

ii. *Objection.* Or you may say that all human beings have but one soul.

²³⁸ Probatio maioris per se patet. Minor ostenditur sic. Suppono, solum Deum esse virtutis actu infinitae, et omnia alia habere finitatem. Rursus suppono, quod motus caeli nunquam fuit sine spirituali substantia creata, quae vel ipsum faceret, vel saltem cognosceret. Rursus etiam hoc suppono, quod spiritualis substantia nihil obliviscitur. Si ergo aliqua spiritualis substantia virtutis finitae simul fuit cum caelo, nulla fuit revolutio caeli, quam non cognosceret; et non est oblita: ergo omnes actu cognoscit; et fuerunt infinitae: ergo aliqua spiritualis substantia virtutis finitae simul comprehendit infinita.

²³⁹ Si dicas, quod non est inconveniens, quod unica similitudine cognoscat omnes revolutiones, quae sunt eiusdem speciei et omnino consimiles.

²⁴⁰ Obiicitur, quod non tantum cognoverit circulationes, sed earum effectus; et effectus varii et diversi sunt infiniti: patet ergo etc.

²⁴¹ This is a curious premise. I do not see how the life span of a human being is relevant; the begetting of new generations is not hindered by the fact of great-great-grandpa still being alive. Indeed, this seems to be how things went on in the first generations of human beings described in Genesis.

²⁴² Cp. Thomas Aquinas, Summa Theologica, Pars Prima, Q. 76, Art. 5, ob. 1: “anima intellectiva est forma incorruptibilis” (Deferrari 435b).

²⁴³ Quinta est ista. Impossibile est infinita simul esse; sed si mundus est aeternus sine principio, cum non sit sine homine - propter hominem enim sunt quodam modo omnia - et homo duret finito tempore: ergo infiniti homines fuerunt. Sed quot fuerunt homines, tot animae rationales: ergo infinitae animae fuerunt. Sed quot animae fuerunt, tot sunt, quia sunt formae incorruptibiles: ergo infinitae animae sunt.

1. *Reply to (ii)*. The second objection is even more erroneous because [given the Reply to (i)] *a fortiori* all human beings cannot have one soul in common.²⁴⁴
- f. The sixth proposition: it is impossible for that which has being after non-being to have existed beginninglessly, for this implies a contradiction. But the world has existence after non-existence; therefore it is impossible that it exists beginninglessly.²⁴⁵
- i. *Support*.
 1. That the world has existence after non-existence is proved thus. Everything which has the totality of its existence from *A* is produced *ex nihilo* by *A*. And the world has the whole of its existence from God; therefore the world was produced *ex nihilo*. But it was not produced *ex nihilo* as to its matter but as to its source.²⁴⁶ Moreover, it is clear that when *B* is produced in its totality by *A*, which differs in essence from *B*, *B* has its existence *ex nihilo*. For that which is produced in its totality, is produced both in its matter and form; but matter does not have something out of which it can be produced, because it is not out of God.²⁴⁷ It is clear, then, that it is produced *ex nihilo*.
 2. The truth of the minor premise – namely that the world is produced in its totality by God – is clear from another question.²⁴⁸

²⁴⁴ Si tu dicas propter hoc, quod circulatio est in animabus, vel quod una anima est in omnibus hominibus; primum est error in philosophia, quia, ut vult Philosophus, «proprius actus est in propria materia»: ergo non potest anima, quae fuit perfectio unius, esse perfectio alterius, etiam secundum Philosophum. Secundum etiam magis est erroneum, quia multo minus una est anima omnium.

²⁴⁵ Ultima ratio ad hoc est: impossibile est, quod habet esse post non-esse habere esse aeternum, quoniam hic est implicatio contradictionis; sed mundus habet esse post non-esse: ergo impossibile est esse aeternum.

²⁴⁶ Materialiter versus originaliter. Deferrari says that, at least in Thomas Aquinas, originaliter can be synonymous with principaliter or primordialiter (884a).

²⁴⁷ Since God is not a material substance, it would be impossible for the matter of the world to come from God in the way that we might use timber (matter) for building a house (the world) from a great forest (God).

²⁴⁸ Namely, from the immediately preceding question, Book II, Division 1, article 1, question 1, “Does the world have a cause of its existence?” The Latin text for this support: Quod autem habeat esse post non-esse, probatur sic: omne illud quod totaliter habet esse ab aliquo, producit ab illo ex nihilo; sed mundus totaliter habet esse a Deo: ergo mundus ex nihilo; sed non ex nihilo materialiter: ergo originaliter. Quod autem omne quod totaliter producit ab aliquo differente per essentiam, habeat esse ex nihilo, patens est. Nam quod totaliter producit, producit secundum materiam et formam; sed materia non habet ex quo producat, quia non ex Deo: manifestum est igitur, quod ex nihilo. Minor autem, scilicet quod mundus a Deo totaliter producat, patet ex alio problemate.

IV. Respondeo (I answer).

- a. We must say that to talk of a beginningless world or of a world produced beginninglessly while also supposing that this world has been produced *ex nihilo* is altogether contrary to truth and reason, as the sixth argument [III.f.] proves. This claim is so contrary to reason that I do not believe that any philosopher, no matter how slight his comprehension, has made this claim, for it contains in itself a manifest contradiction.²⁴⁹
- b. But when you presuppose that matter is beginningless, it seems reasonable and understandable to suppose that the world is beginningless. This is clear from two examples.²⁵⁰
 - i. *Example 1.* The production of the world by God is like the making of a footprint. If the foot were eternal and if the dust, in which the footprint is made, were eternal, nothing would prevent us from taking the footprint to be coeternal with the foot – and yet the footprint would be *from* the foot. In this way, if matter or a potential principle were coeternal with its author, what would stop the footprint itself from being eternal? It seems, in fact, that it must be eternal.²⁵¹
 - ii. *Example 2.* A creature comes from God the Father like a shadow, while God the Son comes from God the Father like the brightness of light. But as soon as there is light, immediately there is the brightness of light, and immediately there is a shadow (if an opaque body is put in front of the light). If therefore matter is coeternal with its author like the opaque body just mentioned (just as it is reasonable to suppose that God the Son, who is the brightness of God the Father, is coeternal with God the Father), then it seems reasonable that creatures or the world, which is a shadow of the highest light, is eternal.²⁵²

²⁴⁹ Dicendum, quod ponere mundum aeternum esse sive aeternaliter productum, ponendo res omnes ex nihilo productas, omnino est contra veritatem et rationem, sicut ultima ratio probat; et adeo contra rationem, ut nullum philosophorum quantumcumque parvi intellectus crediderim hoc posuisse. Hoc enim implicat in se manifestam contradictionem.

²⁵⁰ Ponere autem mundum aeternum, praesupposita aeternitate materiae, rationabile videtur et intelligibile, et hoc duplici exemplo.

²⁵¹ Egressus enim rerum mundanarum a Deo est per modum vestigii. Unde si pes esset aeternus, et pulvis, in quo formatur vestigium, esset aeternus; nihil prohiberet intelligere, vestigium pedi esse coeternum, et tamen a pede esset vestigium. Per hunc modum, si materia sive principium potentiale esse coeternum auctori, quid prohibet ipsum vestigium esse aeternum? Immo videtur congruum.

²⁵² There are echoes of this language in Bonaventure's *Hexaameron*, visio II, col. 5, n. 14-15: "Totus mundus, quia est umbra, via, vestigium, est liber scriptus intus et foris Quando ergo anima videt hoc, videtur sibi semper quod deberet transire de umbra ad lucem, a via ad terminum, a vestigio ad veritatem, a libro ad veram scientiam." The Latin text of Example 2: Rursus aliud exemplum rationabile. Creatura enim procedit a Deo ut umbra, Filius

- c. The position expressed in IV.b is more reasonable than its opposite, namely that matter existed eternally [before creation] in an imperfect state, without form or divine influence, as certain philosophers have said. So much more reasonable is the view in IV.b that, according to the saints and the commentators and his own words, even that very excellent philosopher, Aristotle, made this (erroneous) position his own.²⁵³
- d. Certain modern philosophers, however, say that Aristotle did not think nor did he intend to prove that the world did not begin at all, but only that the world did not begin through a natural change.²⁵⁴
 - i. I do not know which of these views about Aristotle's position is more correct.
 - 1. I do know this one thing: if he claimed that the world did not begin naturally, he was right, and his arguments derived from motion and time are effective.²⁵⁵
 - 2. But if Aristotle thought that the world did not begin in any way, he was manifestly mistaken, just as the many arguments above have shown.²⁵⁶
- e. For Aristotle to avoid contradiction in his position it was necessary for him to hold:

procedit ut splendor; sed quam cito est lux, statim est splendor, et statim est umbra, si sit corpus opacum ei obiectum. Si ergo materia coaeterna est auctori tanquam opacum; sicut rationabile est ponere Filium, qui est splendor Patris, coaeternum: ita rationabile videtur, creaturas sive mundum, qui est umbra summae lucis, esse aeternum.

²⁵³ Et magis rationabile est quam suum oppositum, scilicet quod materia fuerit aeternaliter imperfecta, sine forma vel divina influenza, sicut posuerunt quidam philosophorum; et adeo rationabilius, ut etiam ille excellentior inter philosophos, Aristoteles, secundum quod Sancti imponunt, et commentatores exponunt, et verba eis praetendunt, in hunc errorem dilapsus fuerit.

²⁵⁴ In the preceding question, II Sent., d. 1, p. 1, a. 1, q. 1, Bonaventure was also unsure about Aristotle on a related point, the production of the world ex nihilo: "Utrum autem posuerit materiam et formam factam de nihilo, hoc nescio; credo tamen quod non pervenit ad hoc, sicut melius videbitur in problemate secundo (i.e., the one I have translated here, d.1, p.1, a.1, q.2): ideo et ipse etiam defecit, licet minus quam alii."

²⁵⁵ Which is to say: his belief that the world did not begin through a natural change would still be consistent with arguing that natural changes (or motion) would otherwise have existed beginninglessly; the latter could not have started through some purely natural change or motion.

²⁵⁶ The meaning of this remark is a contentious point. Is he referring to the arguments in Section III a-f? Or is he referring to earlier sections in his Sentences commentary? And about the former possibility, about a world in which matter is created or uncreated? Surely not the latter, because Bonaventure has just said IV.b that a beginningless world is perfectly possible if matter is beginningless. So I think that we have to be careful here not to use a line like this to say that Bonaventure thought a beginningless world to be conceptually impossible. I will discuss the identity of these "many arguments above" in what follows. The Latin text of IV.d: Quidam tamen moderni dicunt, Philosophum nequaquam illud sensisse nec intendisse probare, quod mundus omnino non coeperit, sed quod non coeperit naturali motu. Quod horum magis verum sit, ego nescio; hoc unum scio, quod si posuit, mundum non incepisse secundum naturam, verum posuit, et rationes eius sumtae a motu et tempore sunt efficaces. Si autem hoc sensit, quod nullo modo coeperit; manifeste erravit, sicut pluribus rationibus ostensum est supra.

- i. Either that the world was not made
 - ii. Or that it was not made *ex nihilo*.²⁵⁷
- f. For Aristotle to avoid an actual infinity it was necessary for him to hold:
 - i. either that the rational soul is corruptible
 - ii. or the unity of the rational soul
 - iii. or metempsychosis.²⁵⁸
- g. Yet if any of f.i-iii is the case, there is no everlasting happiness. And so this error has a bad beginning and the worst end.²⁵⁹

V. Refutation of the arguments for not-*p*:

- a. As to the first objection about the motion [of the first moveable thing], that it is the first among all motions and changes, because it is the most complete - we should say that in speaking about natural motions and changes, the objection is right and there is no counter-objection.
 - i. But when speaking about the supernatural change through which the first moveable thing itself came into being, it is not right. For that change precedes every created thing, and thus the first mobile thing itself, and *a fortiori*, the motion of the first mobile thing.²⁶⁰
- b. The second objection was that every motion comes into being through motion; to which it must be said that motion does not come into being through itself or in itself, but with another and in another. And since God in the same instant made the first mobile thing and influenced it as mover, we conclude that he created motion simultaneously with the first mobile thing.
 - i. But if you ask about *that* creation, we should say that there is a stopping point in it just as in the first things. And this will be better seen below.²⁶¹

²⁵⁷ Et necesse fuit, eum ad vitandam contradictionem ponere, aut mundum non esse factum, aut non esse factum ex nihilo.

²⁵⁸ Ad vitandum autem infinitatem actualem necesse fuit ponere aut animae rationalis corruptionem, aut unitatem, aut circulationem.

²⁵⁹ Et ita [aufertur beatitudo]. Unde iste error et malum habet initium et pessimum habet finem.

²⁶⁰ Quod ergo obiicitur primo de motu, quod est primus inter omnes motus et mutationes, quia perfectissimus; dicendum, quod loquendo de motibus et mutationibus naturalibus, verum dicit et non habet instantiam; loquendo autem de mutatione supernaturali, per quam ipsum mobile processit in esse, non habet veritatem. Nam illa praecedit omne creatum, et ita mobile primum, ac per hoc et eius motum.

²⁶¹ Byrne: "II Sent., d.1, p.1, a.3, q.2, ad 5m. St. Bonaventure's point seems to be that to ask whether there is a creating of creating is to ask a meaningless question" (112). At the passage Byrne indicates, Bonaventure is responding to this objection: "If creation is a creature and every creature is created, then creation is created. But everything which is created is created through an intermediate creation. Therefore, creation is created through another creation and so on endlessly." To which Bonaventure replies: "This is true of a creature, properly speaking. But if it is meant generally, not only is a creature said to be that which is created, but also that which is concreated and joined to the creature; and in this way there is creation. So if you ask how this can be, we would say that in first

- c. The third objection, about the *now* of time, etc. - we should say that just as in a circle there are two ways of indicating a point, either when the circle comes to be or after it has come to be; and just as while it comes to be, there is a positing and an indicating of the first point, but when it already exists, there is no positing a first; so also *now* in time can be taken in two ways: in the very production of time there was a first *now*, before which there was not another, because it was the beginning of time, in which all things are said to have been made.
 - i. But if the objection is about time, after it came to exist, it is true, because the *now* is the terminus of the past and its condition is like that of a point in a circle; but in this way things were not produced in an already completed time. And thus it is clear that the arguments of the Philosopher are totally ineffective against this conclusion.
 - ii. And what is said, that before every time is time; this is true when taken of divisions within time, but it is not true when coming from outside and before the beginning of time.²⁶²
- d. In regard to the objection about time, when it begins - we should say that it begins in its own beginning; but the beginning of time is an instant or a *now*; and thus it begins in an instant. And that argument has no force: “it was not in an instant, therefore it did not begin in an instant; because successive things are not in their own beginning.”
 - i. However, in another way we can say that there are two ways of speaking about time: either according to its essence or according to its existence.
 - 1. If according to its essence, the *now* is the whole essence of time, and the *now* began with the first mobile thing, not in another *now*, but in itself, because there is a stopping point in first things (so

things there is a limit, as was touched upon earlier. So just as unity, which makes a subject one, is not one by another unity, so neither is creation, by which substance comes into existence, produced or concreated through another creation.” The Latin text of V.b: Quod obiicitur: omnis motus exit in esse per motum; dicendum, quod motus non exit in esse per se, nec in se, sed cum alio et in alio. Et quoniam Deus in eodem instanti mobile fecit et ut motor super mobile influxit; ideo motum mobili concreavit. Si autem quaeras de illa creatione, dicendum, quod ibi stare est sicut in primis. Et hoc melius infra patebit.

²⁶² Quod tertio obiicitur de nunc temporis etc., dicendum quod sicut in circulo est dupliciter assignare punctum, aut cum fit, aut postquam factus est; et sicut, dum fit, est ponere et assignare primum punctum, dum vero iam est, non est ponere primum; sic est accipere in tempore nunc dupliciter: et in ipsa productione temporis fuit nunc primum, ante quod non fuit aliud, quod fuit principium temporis, in quo omnia dicuntur esse producta. Si autem de tempore, postquam factum est, verum est, quod est terminus praeteriti et se habet per modum circuli; sed hoc modo non fuerunt res productae in tempore iam perfecto. Et ita patet, quod rationes Philosophi nihil valent omnino ad hanc conclusionem. Et quod dicitur, quod ante omne tempus est tempus; verum est accipiendo intus dividendo, non extra anterieus procedendo.

there is not another standard of time that measures the coming into existence of that *now*).

2. If according to its existence, time begins with the motion of variation, that is, time did not begin through creation, but rather through the change of changeable things themselves, especially the change of the first moveable thing.²⁶³
- e. As to the objection about the sufficiency and actuality of the cause, we should say that a cause is sufficient for something in two ways: either as operating by nature or through will and reason.
- i. If it operates by nature, then as soon as it exists, it produces its effect.
 - ii. But if it operates through will, although it is sufficient, it is not necessary that when it exists it operates; for it operates according to wisdom and judgment, and thus it considers fittingness.
 - iii. Therefore since beginningless existence was not suited to the nature of the creature itself and it was not fitting that God give this most noble condition to something: therefore the divine will, which operates according to wisdom, did not produce [the world] beginninglessly, but in time; for he produced the world in just the way he disposed and willed. For from eternity he willed to produce at the time when he did produce; just as I *now* will to hear Mass *tomorrow*. And thus it is clear that sufficiency does not force [the conclusion they want].
 - iv. In a similar manner we ought to respond about actuality, because a cause can actually exist in two ways: either in itself, as when I say: the sun is shining; or in the effect, as when I say: the sun is illuminating.
 1. In the first way God was always in act, since he is pure act, having nothing mixed with potentiality.
 2. In the other way he was not always in act, for he was not always in the act of producing.²⁶⁴

²⁶³ Quod obiicitur de tempore, quando coepit; dicendum, quod coepit in suo principio; principium autem temporis est instans vel nunc; et ita coepit in instanti. Et non valet illa ratio: non fuit in instanti, ergo non coepit in instanti; quia successiva non sunt in sui initio. Potest tamen et aliter dici, quod dupliciter est loqui de tempore: aut secundum essentiam, aut secundum esse. Si secundum essentiam, sic nunc est tota essentia temporis, et illud incepit cum re mobili, non in alio nunc, sed in se ipso, quia status est in primis, unde non habuit aliam mensuram. Si secundum esse, sic coepit cum motu variationis, scilicet nec coepit per creationem, sed potius per ipsorum mutabilium mutationem, et maxime primi mobilis.

²⁶⁴ Quod obiicitur de causae sufficientia et actualitate, dicendum, quod causa sufficiens ad aliquid est duobus modis: aut operans per naturam, aut per voluntatem et rationem. Si operans per naturam, sic statim cum est, producit. Si autem operans per voluntatem, quamvis sit sufficiens, non oportet, quod statim cum est operetur; operatur enim secundum sapientiam et discretionem, et ita considerat congruitatem. Quoniam igitur non conveniebat naturae ipsius

- f. To the sixth objection - “if God became a producer from being a not-producer, he was changed from rest to activity” - we should say that there is a type of agent in whom action and production add something beyond the agent and producer.
- i. Such an agent, when it goes from not acting to acting, is changed in some way; and in such an agent before activity there is rest and in activity is added completion.
 - ii. There is another agent which is its own activity, and to such an agent nothing at all comes when it produces nor does anything come to be in it, which was not there before. Such an agent receives completion neither in operation, nor in inactivity is it at rest, nor when it becomes a producer from being a non-producer is it changed from rest to action.
 - iii. But God is such an agent according to the philosophers who supposed that God was absolutely simple. So it is clear that the argument of the objection [II.f] is misguided.
 1. For if to avoid being at rest God had produced things beginninglessly, without those things he would not be the perfect good, and for the same reason, he would not be the perfect good with those things because the most perfect being is perfect in itself.
 2. Again, if for the reason of immutability it was necessary for things to exist beginninglessly, he could not now make anything new. And what sort of God would he be who could now do nothing on his own? (All these objections indicate madness rather than philosophy or some kind of reason.)
 - iv. If you ask how it can be understood that God acts by himself and yet he does not begin to act, we should say that although this cannot be fully understood because of the conjoined conception²⁶⁵, nevertheless it can be proven by a demonstrative argument; and if anyone withdraws himself

creaturae aeternitas, nec decebat, Deum alicui hanc nobilissimam conditionem donare: ideo divina voluntas, quae operatur secundum sapientiam, produxit non ab aeterno, sed in tempore; quia sicut produxit, sic disposuit et sic voluit. Ab aeterno enim voluit producere tunc, quando produxit; sicut ego nunc volo cras audire missam. Et ita patet, quod sufficientia non cogit. Similiter de actualitate dicendum, quod causa duobus modis potest esse in actu: aut in se, ut si dicam: sol lucet; aut in effectu, ut si dicam: sol illuminat. Primo modo Deus semper fuit in actu, quoniam ipse est actus purus, nihil habens admixtum de possibili; alio modo non semper in actu; non enim semper fuit producens.

²⁶⁵ The conjoined conception, that is, how we are forced to imagine or picture this situation (God acting and yet not beginning to act) given our experience of temporal agents, but if we think it through in analytic terms (the demonstrative argument), we would conclude that it is a reasonable thing to say.

from the senses to the consideration of intelligibles, he will in a way perceive its truth.

1. For if someone asks whether an angel can make a potter's cup, although he does not have hands, or whether he can throw a stone; the answer is that he can; because an angel can do by his power alone apart from a physical organ what a soul can do with a body and its limbs. If therefore an angel because of its simplicity and perfection surpasses a human to such a degree that he can make that cup without an intervening instrument, for which a human requires an instrument, and he can also make through one thing that which a man can make through many.
2. So much more can God, who is at the extremity of complete simplicity and perfection, apart from every intervening command of his will, which is nothing other than himself, produce all things, and by the same reason, in producing remain immutable! Thus a person can be led by the hand to understand this truth.
 - a. But he will understand this more perfectly if he can consider those two properties in his creator, that he is most perfect and most simple.
 - i. Because he is most perfect, all the properties of perfection are attributed to him.
 - ii. Because he is most simple, no difference is posited in him, and for this reason, no variety or mutability.
 - b. Therefore "remaining unchanging he sets all things in motion" (Boethius *De Consolatione Philosophiae* III, met. 9).²⁶⁶

²⁶⁶ Quod obiicitur secundo: si de non producente factus est producens, mutatus est ab otio in actum; dicendum, quod quoddam est agens, in quo actio et productio addit aliquid supra agentem et producentem. Tale, cum de non agente fit agens, variatur aliquo modo; et in tali ante operationem cadit otium, et in operatione additur complementum. Aliud est agens, quod est sua actio; et tali nihil omnino advenit, cum producit, nec etiam in eo fit aliquid, quod non prius erat; et tale nec in operando recipit complementum, nec in non-operando est otiosum, nec cum de non-producente fit producens, mutatur ab otio in actum. Tale autem est Deus etiam secundum philosophos, qui posuerunt Deum simplicissimum. Patet igitur, quod stulta est eorum ratio. Si enim propter otium vitandum res ab aeterno produxisset, sine rebus perfectum bonum non esset, ac per hoc nec cum rebus, quia perfectissimum se ipso perfectum est. Rursus, si propter immutabilitatem oporteret res ab aeterno esse, nihil posset nunc de novo producere. Qualis igitur Deus esset, qui nunc nihil per se posset? Haec omnia dementiam indicant magis quam philosophiam vel rationem aliquam. Si tu quaeras, qualiter possit capi, quod Deus agat se ipso, et tamen non incipiat agere; dicendum, quod, etsi hoc non possit plene capi propter imaginationem coniunctam, potest tamen necessaria ratione convinci; et si quis a sensibus se retrahat ad intelligibilia aspicienda, aliquo modo percipiet. Si enim aliquis quaerat, utrum Angelus possit facere potum figuli, cum non habeat manus, vel proicere lapidem; respondetur, quod potest,

APPENDIX B

A TRANSLATION OF BONAVENTURE'S IN *I SENT.*, D. XLIII & D. XLIV, Q. 4

D. XLIII

Article One

The Infinity of Divine Power

Question I

We begin by asking whether the power of God is infinite; and that the power itself, as such, is infinite, is shown thus.

Arguments for the preferred position

- (1) We call the infinite that which does not have an end; but there is no end to what the divine power can do. The first premise is clearly true; the truth of the second premise is plain from what St. John Chrysostom says in one of his homilies: "God is called omnipotent because his *can* never finds a *cannot*": therefore if God always finds that he

quia hoc potest sola virtute sua absque organo, quod potest anima cum corpore et membro suo. Si igitur Angelus propter suam simplicitatem et perfectionem tantum excedit hominem, ut possit facere sine organo medio illud, ad quod homo necessario indiget organo; possit etiam facere per unum, quod homo potest per plura: quanto magis Deus, qui est in fine totius simplicitatis et perfectionis, absque omni medio suae voluntatis imperio, quae non est aliud quam ipse, potest omnia producere, ac per hoc in producendo immutabilis permanere! Sic potest homo manuduci ad hoc intelligendum. Hoc autem perfectius capiet, si quis ista duo potest in suo opifice contemplari, scilicet quod est perfectissimus et simplicissimus. Quia perfectissimus, omnia quae sunt perfectionis ei attribuuntur; quia simplicissimus, nullam diversitatem in eo ponunt, ac per hoc nullam varietatem nec mutabilitatem; ideo «stabilis manes dat cuncta moveri».

can, “for those things receiving it there is always an additional quantity of power to receive”²⁶⁷: therefore the divine power is infinite.²⁶⁸

(2) Second, every active power, which is capable of infinite effects, is actually infinite; the divine power is of this sort: therefore, etc. The proof of the major premise: if a power is purely in act, then it actually has the whole [of the effects] that it can have: therefore if it has the whole actually, and nothing can be added to it nor can something new be given to it, and the power *qua* powerful extended itself to infinite things: therefore it actually has in itself an infinity. The minor premise is clear because the divine power never can produce so many effects that it cannot produce still more: therefore it is clear that the divine power is infinite.²⁶⁹

(3) Third, every power, which can produce an infinite act, if it is altogether in act, is infinite *simpliciter*; but the divine power is of this sort: therefore, etc. The major premise is clear from what follows: just as a power is disposed to a power, so is an act to an act; but an infinite act infinitely exceeds a finite act, therefore also does an infinite power infinitely exceed a finite power: therefore if a power is altogether in act, it is infinite. The minor premise is clear because God is said to continue in existence forever and can preserve [the existence of] creatures forever: therefore, etc.²⁷⁰

²⁶⁷ The editors report that Bonaventure has adapted this line from Aristotle’s definition of the infinite in *Physics* III (206a25-27): *Infinitum igitur id est, cuius secundum quantitatem accipientibus semper aliquid accipere extra est.*

²⁶⁸ *Infinitum dicitur quod non habet terminum; sed divina potentia quantum ad posse non habet terminum: ergo etc. Prima manifesta est; secunda patet per Chrysostomum in quadam Homilia: «Omnipotens dicitur, quia eius posse non invenit non posse»: ergo si semper invenit posse, semper quantitatem potentiae accipientibus est ultra accipere: ergo est infinita.*

²⁶⁹ *Item, omnia potentia activa, quae potest in effectus infinitos, est actu infinita; divina potentia est huiusmodi: ergo etc. Probatio primae: si potentia est pure in actu, ergo habet totum actualiter, quod potest habere: ergo si totum habet actualiter et nihil potest ei accrescere nec de novo aliquid dari, et potentia ut potens se extendebat ad infinita: ergo actu habet in se infinitatem. Minor patet, quia divina potentia nunquam potest in tot effectus, quin adhuc possit in plures: ergo manifestum est, quod est infinita.*

²⁷⁰ *Item, omnis potentia, quae potest in actum infinitum, si est omnino in actu, est simpliciter infinita; sed divina virtus est huiusmodi: ergo etc. Maior patet sic: sicut se habet potentia ad potentiam, sic actus ad actum; sed actus*

(4) Fourth, every power that is powerful over extremes infinitely distant is infinite; but the divine power is of this type because it makes something from nothing, and between *something* and *nothing* there is an infinite distance: therefore, etc.²⁷¹

(5) Fifth, every power that is entirely the same as the essence [of its subject] is infinite; but the divine power is of this sort: therefore, etc. The proof of the first premise: whenever two things are at zero distance from each other, wherever the one is, there also is the other: therefore if a power is entirely the same as the essence [of its subject], wherever the power is, there also is the essence. But where the essence is, there is the center of power: so wherever such a power is powerful, it is powerful as in its center: therefore since no power is limited in its own center, but is more powerful there, either the divine power can do nothing or it can do as much as it chooses, and thus infinitely: therefore, as much as it is powerful in itself, that power is able to work in infinite things. But that power is completely homogenous and simple: therefore its breadth and intensity are the same thing: therefore if in extent it is infinite, so also is it infinite in intensity: therefore it is infinite in every way. And this is what the Philosopher says in the *Liber de causis* that “power, to the extent that it is unified, is infinite”. Since therefore the divine power is completely unified, because it is entirely the same thing with its source, it is powerful everywhere just as in its source: so the divine power never finds that it *cannot*.²⁷²

infinitus excedit finitum in infinitum, ergo et potentia potentiam: ergo si potentia est omnino in actu, est infinita. Minor patet, quia Deus dicitur durare in infinitum et potest creaturam conservare in infinitum: ergo etc.

²⁷¹ Item, omnis potentia, quae potest super extrema in infinitum distantia, est infinita; sed potentia divina est huiusmodi, quia de nihilo aliquid facit, et inter aliquid et nihil est infinita distantia: ergo etc.

²⁷² Item, omnis potentia, quae omnino indifferens est ab essentia, est infinita; sed divina potentia est huiusmodi: ergo etc. Probatio primae: quaecumque aliqua duo sunt omnino indistantia, ubicumque est unum, et reliquum: ergo si potentia est omnino indifferens ab essentia, ubicumque est potentia, et essentia. Sed ubi est essentia, ibi est centrum potentiae: ergo ubicumque potest potentia talis, potest ut in centro: ergo cum nulla potentia limitetur in centro suo, sed amplius possit, aut divina potentia nihil potest, aut potest quantum vult, et sic in infinitum: ergo, quantum est de se, potentia illa potest in infinitis operari. Sed potentia illa omnino est indifferens et simplex: ergo idem est ibi latum et intensum: ergo si extensive est infinita, et intensive: ergo omnino est infinita. Et hoc est, quod dicit

Arguments against the preferred position

- I. In everything that is finite, you can find a stopping point; but in the divine power you can find a stopping point because you can point out something that it cannot do, as was shown above²⁷³, such as the production of corporeal acts or deformed acts: therefore, etc.²⁷⁴
- II. Second, that which is exceeded by something else is finite, because the infinite is in no way exceeded; but knowledge exceeds power in the case of knowable things; for there is knowledge of more things than there is power, for God knows evil things, but he cannot do them: therefore, etc.²⁷⁵
- III. Third, we see in created powers that infinity is from matter, but finitude is from form: therefore since the power of God is entirely form or formal, not at all having anything of materiality, therefore it is simply finite and in no way infinite.²⁷⁶
- IV. Fourth, between contradictory opposites, there is an infinite distance; but a creature's power reduces one finite thing to another, for example, it makes the one not running to run, and yet it is finite: therefore.²⁷⁷
- V. Fifth, I see that the soul has a power entirely similar to its essence, i.e. the power of vivifying a body; it has also the power for an infinite act, i.e. continuing in existence or

Philosophus in libro de Causis, quod «virtus quanto magis unita, tanto magis infinita». Cum ergo divina potentia sit unitissima, quia est omnino idem cum sua origine, ubique potest tanquam in sua origine: ergo nunquam invenit non posse.

²⁷³ Distinction 42, question 2 (p.748-750).

²⁷⁴ Omne illud est finitum, in quo est reperire statum; sed in divina potentia est reperire statum, quia est assignare aliquid, quod non potest, sicut supra ostensum est, ut actus corporales et actus deformes: ergo etc.

²⁷⁵ Item, quod exceditur ab aliquo est finitum, quia infinitum nullo modo exceditur; sed scientia excedit potentiam respectu scibilium; plurium enim est scientia quam potentia, scit enim mala, et non potest: ergo etc.

²⁷⁶ Item, videmus in potentiis creatis, quod infinitas est a materia, sed finitas est a forma: ergo cum potentia Dei sit omnino forma sive formalis, nihil omnino habens materialitatis, ergo simpliciter est finita et nullo modo infinita.

²⁷⁷ Item, inter contradictorie opposita est distantia infinita; sed creaturae virtus finitum unum reducit ad alterum, ut non currentem facit currere, et tamen est finita: ergo.

remaining forever; no less has it the power for infinite acts²⁷⁸; and yet that power is finite in itself: by parity of reasoning such seems to be the case with the divine power, since the soul is the express image of God. And from these five arguments the previous five arguments seem to be invalidated.²⁷⁹

Resolution of the opposing arguments

I answer that there is a positing of the divine power as altogether infinite both in act and in habit; just as was proved *a posteriori* through the effect, because the divine power has an infinite effect by duration and infinite effects by addition²⁸⁰, to which it is compared as pure act and complete cause. And therefore it is the case that it is something having in itself a full and perfect actuality with respect to infinite things; and it is necessary, since it has the whole, that it will ever have it, and that it should have it from itself, since it is infinite.²⁸¹

The other reason shows this, as it were, *a priori*. For because of the complete indivisibility of power from essence [in God], and because of the supreme unity of this power, wherever it has this power, it has the whole of this power, both at the extreme end of the world as at the center, both in height as well as breadth, and in every dimension of infinity.

²⁷⁸ The editors: *For the intellectual power, because it is in itself incorruptible and everlasting, cannot elicit so many acts that it would be unable to elicit more (acts infinite syncategorimatically or indefinite).*

²⁷⁹ Item, video quod anima habet potentiam omnino indifferentem ab essentia, sicut potentia vivificandi corpus; habet etiam potentiam ad actum infinitum, sicut ad durandum sive permanendum in infinitum; habet potentiam nihilominus ad actus infinitos; et tamen ipsa potentia est finita in se: ergo videtur pari ratione de divina potentia, cum anima sit expressa imago Dei. Unde videntur rationes praedictae nihil valere.

²⁸⁰ The editors: *The expression . . . infinite (effects) by addition, is found in Aristotle, Physics III, Chapter vi, where the Philosopher distinguishing among types of infinity says: "So the infinite is said to be one thing when it is potential and another when it is actual. And there is indeed an infinite by addition (appositione) and another by division (ablatione). Which words Averroes explains thus: the potential infinite is found in the addition of numbers and in the division of measures (of magnitudes) . . . not in act. Likewise in the book about the substance of the world Averroes distinguishes two kinds of potential infinite, namely the infinite in duration (duratione) and the infinite in strength (vigore).*

²⁸¹ RESPONDEO: Dicendum, quod divinam potentiam est ponere omnino et in actu et in habitu infinitam; sicut probatum est per effectum a posteriori, quia habet effectum infinitum duratione et infinitos appositione, ad quos comparatur ut actus purus et ut tota causa. Et ideo est habens in se plenam et perfectam actualitatem respectu infinitorum; et necesse est, cum habeat totum, quod unquam habitura est, et ex se habeat, quod ipsa infinita sit.

Nor is there a similar reason in any creature, neither in respect of the causality of the effect, nor with respect to the production of the act, nor with respect to the unity. Not with respect to the causality [of the effect], because no power of a creature in respect of an infinite duration is purely active, rather it must be preserved through the divine influence. Likewise not with respect to the production of the act, from which it has a passive infinity also in receiving, and therefore is not actually infinite, but only potentially infinite. And because a potential infinity depends upon an actual infinity, therefore every infinity of a created duration and of a work depends on an infinity of uncreated power. And this is what the Philosopher says in the *Liber de causis*, that “all infinite powers depend on one first infinite thing, which is the power of powers”. Likewise it is not similar to simplicity or unity. For the divine power is altogether in itself simple and altogether has an essence or simple substance, and is altogether not different from it; and therefore it is most unified in every type of union, and therefore it is infinite. But the power of no creature, no matter how noble, is altogether simple, because every such [creaturely] power expresses some respect of dependence; nor is it founded in a substance altogether simple; nor is it altogether not different, because no creature is its own power, speaking essentially. And therefore because every creature falls short of the mark of supreme simplicity, consequently also every creature falls short of infinity. And thus it’s clear that the divine power is infinite and that the divine power is the *ratio* of infinity.

Now the response is clear to the last argument showing that the foregoing arguments weren’t sound.

Individual replies to the arguments against the preferred position

(1/2) To that objection that says that the divine power finds some limit and some place beyond which it cannot go, it must be said that the divine power is infinite with respect to those things which it is possible to do; with respect to other things, which are in the power of impotence, it is neither finite nor infinite, because it can do none of the things in the class. For when it is said that it finds a limit and a place beyond which it cannot go; it must be said that it is false, because the *excess* and the *terminus* of a thing belong to those things to which a thing extends itself; and the divine power extends itself only to good things, and with respect to such things there is never knowledge of more things than there is power over the same; nor with respect to such things does it have a limit. And so that point is clear.

It can nevertheless also be said in another way that there is a twofold way of speaking about knowledge and power: either in itself or in comparison to its objects. If in itself, in this way one does not exceed the other, because whatever it knows, it is able to know, and whatever it can do, it knows that it can do. Or else through comparison to the object, and here we speak in two ways: either according to the form (or species) or according to the number. If according to the number, thus, although the power can do infinite things, it is not exceeded by knowledge; if however according to the form, thus, because it is a power in respect of goods only, it is exceeded; nevertheless from this it does not follow but that it is infinite. And here is an example: if you imagine two infinite lines, the two lines are more than the one, because the one did not have infinity according to number, but only according to length; and thus the two are not bigger or longer than the one. The case is similar in the proposition under discussion. For a

power is called infinite with respect to its objects according to number, but not according to quality, because it cannot do evil or privative things. And from this the first and second arguments are clear. For although the divine power finds limit with respect to evil, nevertheless it does not with respect to the good, and that limit or “not beyond which” rather works unto infinity, because there is not a *can*, but a *cannot*; and therefore, although this fact seems to set some limit according to the *account of understanding*, according to the truth it does not, because that which cannot do evil things, this is wholly on account of its immense virtue.

- (3) To that which is objected that the infinite is the susceptibility of a material potential; it ought to be said that this is true about the infinite through the privation of completion or of a complete existence; but it is not true about the infinite through the privation of limitation. For first there is an infinite in passive or receptive potential, and thus in the first place it is present in matter; then there is an actual infinite, and so in that alone is he truly and properly, who alone is act and pure act and the most perfect.
- (4) To the objection that a creature is powerful over those things which are supremely distant; it ought to be said that being and non-being are not said to be supremely distant, because they are opposed contradictorily, but since they have nothing common neither with respect to the subject genus nor with respect to the predicable genus; but to come to a rest and to be moved, either to be moved or not to be moved, because it amounts to the same thing, in both ways they have something common; and thus the distance is not infinite nor is there something similar.
- (5) To the objection about the power of living, it ought to be said that *to live* expresses in one way a consequent act, just like *to be moved*; and thus it is from the soul by the

means of powers differing from its essence. In another way *to live* is expressed, according to what is a *first act*, and it is from the essence of a soul as in the account of form, not in the account of agent; and because of this it is not considered to be there only while operating, whitening whitens itself by itself, so because it is not noted there nor is there an egress of something, as by a potential agent. We however speak here about a power as acting and producing something, which power, howsoever much it is the same, nevertheless expresses some inclination, and therefore dependence; and therefore it removes simplicity, and through this it removes infinity. In God however this is not the case; and therefore that reason does not have an instance, rightly understood.

Question II

The second question is whether divine essence is infinite, that is, whether the divine power is infinite with respect to existence. And for these reasons it seems that it is:

Arguments for the preferred position

Because no power is more noble than substance; but the divine power is infinite: therefore since the divine power is not nobler or greater than the divine substance, it is necessary that the substance is also infinite.

Second, if two things - allowing that we may speak in this way - are entirely the same, if one is infinite, so is the other; but substance and power are the same thing [in God], both

his existence and his power: therefore since the divine power is infinite, so also is the divine existence, and consequently the divine essence.

Third, since two things are so disposed that one extends itself to nothing to which the other does not also extend, if one is infinite, so is the other; but power completely extends itself to nothing to which essence does not extend itself - never can God do so many things but that his substance can also exist in that many things, according to which it is said in the eighth chapter of the third book of Kings: *If heaven and the heaven of heavens [cannot contain thee, how much less this house which I have built.]*

Fourth, something greater than every finite thing can be conceived, namely the infinite itself; but the divine essence is so good and great that nothing greater or better can be conceived, otherwise it would not be God.

Fifth, every finite good is better with some other good than by itself alone, because the finite added to the finite makes something greater: therefore if the divine essence is finite, it will be something greater with another thing than by itself alone: therefore it is not the most perfect and best; which is altogether impious to say.

Sixth, every finite good happens sometimes to be equaled and to be rendered through the duplication of the finite, as is clear in the case of a line - I say this on the condition that what is doubled makes a greater thing (I say this because of geometrical points) - if therefore the divine essence is finite with respect to nobility and goodness, if the goodness of a creature were doubled, by progressing in this way it would at some time reach a goodness equal to the divine goodness; however this is false and impossible because the creature is proportional to the Creator, and Augustine says this in *De trinitate* Book VIII: therefore that, from which it follows, that the divine essence is finite.

Arguments against the preferred position

“The finite and the infinite,” as the Philosopher says, “are the proper passions (*propriae passionēs*) of quantity”²⁸²; but essence *qua* essence does not have quantity of mass:

therefore if it is considered in the abstraction of power as essence, the divine essence is neither finite nor infinite.²⁸³

Second, every power, which can do one thing only (and so not another), is a finite power: therefore, by parity of reasoning, every essence, which is one thing only (so that it is nothing else), is a finite essence; but the divine essence is God and nothing else.²⁸⁴

Third, each thing that is finite to the supreme truth, is simply finite - and this is clear, because the first truth judges about each thing, just as it is; and this is clear also in a similar way, that this is white and black and good to God, therefore simply good - but the divine essence is finite to the truth of the divine cognition, because God grasps and knows it perfectly, and “the comprehension of the knower,” as Augustine says²⁸⁵, “sets a boundary (*finitur*) around the thing known”: therefore, etc.²⁸⁶

Fourth, nothing infinite limits (*finit*) something else, because nothing gives to another what it does not have: so if the divine essence is infinite, it limits (*finit*) nothing, therefore

²⁸² *Physics*, Book I, Chapter 2: “For the infinite is in [the category of] quantity . . . for the definition of the infinite uses quantity, but not substance or quality” (Latin text). The editors go on: Averroes interprets these words thus: “For the infinite and the finite are about differences of quantity.” About the *quantity of mass* and the *quantity of power*, cf. Augustine *De quantitate animae*, chapter 3, n. 4.

²⁸³ «Finitum et infinitum, ut dicit Philosophus, sunt propriae passionēs ipsius quantitatis»; sed essentia ut essentia non habet quantitatem molis: ergo si consideratur ut in abstractione virtutis ut essentia, divina essentia nec est finita nec infinita.

²⁸⁴ Item, omnis potentia, quae potest unum solum, ita quod non aliud, est potentia finita: ergo pari ratione omnis essentia, quae est unum solum, ita quod nihil aliud, est essentia finita; sed divina essentia est Deus et nihil aliud: ergo etc.

²⁸⁵ *De civitate dei*, Book XII, chapter 18.

²⁸⁶ Item, omne illud quod est finitum summae veritati, est simpliciter finitum — et hoc patet, quia prima veritas iudicat de unoquoque, sicut est: patet etiam in simili, ut hoc est album et nigrum et bonum Deo, ergo simpliciter bonum — sed divina essentia est veritati divinae cognitionis finita, quia Deus ipsam comprehendit et novit perfecte, et «quod scitur, ut dicit Augustinus, scientis comprehensione finitur»; ergo etc.

it is the limit (*finis*) of nothing; and if this is the case, then the divine essence is not at all good.²⁸⁷²⁸⁸

Fifth, nothing infinite is comprehended by a finite thing; but God is comprehended by the Blessed, because otherwise they would not be blessed, unless they knew God perfectly - for their desire would always be borne on to something greater, and they would not find rest, and thus they would be not blessed - if therefore the divine essence is comprehended, it is not infinite.²⁸⁹

Sixth, no privation is nobler than a habit: therefore since the infinite expresses a privation, and the finite expresses a habit, and every nobler thing must be attributed to God, it is clear, etc.²⁹⁰

Resolution of the opposing arguments

On this point certain philosophers chose to say that the divine essence is finite under the account of essence (*sub ratione essentiae*), and infinite under the account of power (*sub ratione potentiae*). For essence is the name for God as he is in himself, and thus he is finite, because perfect; he is finite also because he is known by the finite, namely by the blessed; and they said this because of the simplicity of his essence, the whole of which they said is seen. Insofar as the divine essence is considered under the account of power, however, power expresses a relation to effects. And because there is not a stopping point there, for something more can always be

²⁸⁷ The editors remark: *The final conclusion of this argument*, then the divine essence is not at all good, *clearly follows from the foregoing premises, provided that this axiom is employed: a limit (finis) and the good (bonum) are the same thing or are interchangeable (convertuntur), which axiom comes up very often in Aristotle.*

²⁸⁸ Item, nullum infinitum finit aliud, quia nihil dat alii quod non habet: ergo si divina essentia est infinita, ergo nihil finit, ergo nullius est finis; et si hoc: ergo nihil bonum.

²⁸⁹ Item, nullum infinitum comprehenditur a finito; sed Deus comprehenditur Beatis, quia aliter non essent beati, nisi Deum perfecte cognoscerent — semper enim appetitus ferretur ad amplius, et non quiescerent, et ita non essent beati — si ergo comprehenditur, non est infinitus.

²⁹⁰ Item, nulla privatio est habitu nobilior: ergo cum infinitum dicat privationem, finitum dicat habitum, et omne nobilium Deo est attribuendum, patet etc.

added, they said that under the account of power it was infinite. But this position was manifestly mistaken. For those two things are not compossible, that his power is infinite while his substance exists as altogether finite, and because they are entirely the same thing, and because the foremost in the order of understanding is substance, and because to whatever the power extends itself under the account of power, to that also does the essence extend itself, as was shown.²⁹¹

And for this reason some said that there is an infinite *simpliciter* and an infinite to us: and they chose to say that both the divine essence and power are in truth finite, because they are finite to God, who is the truth; nevertheless they are infinite to us, because each exceeds us beyond proportion. Whence “God is said to be infinite, because he is grasped neither by place nor time nor understanding,” as John Damascene says. But again this position cannot stand, since, just as was proved above about the divine power, that there is no end to what it can do, and moreover, it is entirely in act, and therefore is regarded as truly infinite; and so also it can be proved about the divine essence.²⁹²

So it is necessary that the divine essence is altogether actually infinite. And this must be granted and must be held as true, all the more so because it is consonant with the Faith, which says that God is beyond measure, and because it is consonant with the witness of the saints, who

²⁹¹ RESPONDEO: Ad hoc voluerunt quidam dicere, quod divina essentia sub ratione essentiae est finita, sub ratione potentiae est infinita. Nam essentia nominat Deum ut in se, et sic est finitus, quia perfectus; finitus etiam, quia comprehenditur a finito, ut a Beatis; et hoc dixerunt propter essentiae simplicitatem, quam dixerunt totam videri. In quantum autem consideratur sub ratione potentiae, sic dicit respectum ad effectus. Et quia non est status ibi, quia semper est aliquid extra accipere, dixerunt, quod sub ratione potentiae erat infinita. — Sed ista positio erronea fuit manifeste. Nam ista duo sunt impossibilia, quod potentia sit infinita, omnino existente substantia finita, et quia idem sunt omnino, et quia prior secundum rationem intelligendi est substantia, et quia ad quicquid se extendit potentia sub ratione potentiae, et essentia, ut ostensum est.

²⁹² Et propter hoc dixerunt aliqui, quod est infinitum simpliciter et infinitum nobis: et voluerunt dicere, quod tam essentia quam potentia est finita secundum veritatem, quia est finita Deo, qui est veritas; sed tamen utraque nobis est infinita, quia impropotionaliter nos excedit. Unde «Deus infinitus dicitur, quia nec loco nec tempore nec comprehensione comprehenditur», sicut dicit Damascenus. — Sed iterum ista positio non potest stare, quoniam, sicut supra probatum est de potentia, quod ipsa non habet statum in possendo, et iterum, est omnino actu, et ideo ponitur vere infinita; sic etiam probari potest essentia.

all say that God is infinite, whence Damascene says that God is “a sort of infinite sea of substance”; and it is true also because it is consonant with the views of the professors, and it is true also because it is consonant with reason.²⁹³

Therefore for understanding the objections for the opposite position it should be noted that the *infinite* is expressed through the negation of an end (*finis*). So the infinite can be talked of in two ways, namely in the way of *negation*, and similarly in the way of an end (*finis*).²⁹⁴

In the way of an end (*finis*): for an end is spoken of in two ways, in one way (1) as a complement; and thus the infinite is expressed through the privation of the complement; and it is in this way that the infinite is spoken of in matter and in the genus of substance and in other genres; and in this way it does not occur in God because he is most perfect. In another way (2) an end is called a boundary (*terminus*), like the boundary of a field, and thus the infinite is called that which lacks a boundary (*terminus*) and a stopping point (*status*). And this can be in two ways according to negation (*secundum negationem*), because it can be understood privatively and negatively: (a) privatively, because it does not have a boundary, and yet it was made to have one, for the reason that it has a limited being (*esse*); and in this privative way the infinite means incompleteness and is not in God. In another way, (b) negatively, the infinite means that which does not have a boundary (*terminus*) nor was it made to have one; and it is in this latter sense that the infinite is posited of God because of his supreme immeasurableness.²⁹⁵

²⁹³ Necessesse est ergo, quod omnino infinita sit actu. Et hoc concedendum est et tenendum est tanquam verum, eo quod magis est consonum fidei, quae dicit Deum immensum, et magis consonum auctoritatibus Sanctorum, qui omnes dicunt ipsum infinitum, unde Damascenus dicit, quod Deus est «quoddam pelagus substantiae infinitum»; magis etiam consonum sententiis magistrorum, magis etiam consonum rationi.

²⁹⁴ Ad intelligentiam igitur obiectorum in oppositum notandum, quod infinitum dicitur per abnegationem finis. Potest ergo dupliciter dici infinitum, scilicet a parte negationis, et similiter a parte finis.

²⁹⁵ A parte finis: nam finis dicitur dupliciter, uno modo, quod est complementum; et sic infinitum dicitur per privationem complementi, et hoc modo infinitum dicitur in materia et in genere substantiae et in aliis generibus; et hoc modo non cadit in Deo, quia ipse est perfectissimus. Alio modo finis dicitur terminus, sicut finis agri, et sic infinitum dicitur quod caret termino et statu. — Et hoc potest esse dupliciter secundum negationem, quia potest intelligi privative et negative: privative, quia non habet terminum, sed tamen natum est habere, propter hoc quod

Individual replies to the arguments against the preferred position

- (1) In response to the first objection that the infinite is a passion of quantity, you could say that just as we can use the term “quantity” in the expression “quantity of power”, similarly we can use the term “infinite”. Moreover, the quantity of a power depends not only on the number of things it can do, but also upon the loftiness of its strength (*nobilitatem valoris*); and this is clear because, as Augustine says²⁹⁶, “in spiritual things ‘bigger’ and ‘better’ are the same thing.”²⁹⁷
- (2) In response to the second objection that the divine essence is one thing and not another [and so finite], it ought to be said that something can be compared to many things in two ways: either by comparison of causality or by comparison of identity. It belongs to the infinite to be compared to many things under the account of causality because it is infinite; but it does not belong to the infinite to be compared according to the account of identity. So because it is infinite, it extends itself to many things, but it does not follow that it *is* many things. Whence if essence or power are compared to things according to the account of identity, neither of them are more than one; so neither is the divine power other powers nor is the divine essence other essences; but if they are compared according to the account of causality, both the divine power and the divine essence are manifold.

habet esse limitatum, et hoc modo dicit incompletionem, et non est in Deo. Alio modo negative, quod non habet terminum nec est natum habere; et hoc modo ponitur in Deo propter summam immensitatem.

²⁹⁶ *De trinitate*, Book VI, chapter 8, n. 9: “Quae non mole magna sunt, hoc est maius esse quod est melius esse.”

²⁹⁷ Ad illud ergo quod obiicitur, quod infinitum est passio quantitatis; dici potest, quod sicut nomen quantitatis extenditur ad quantitatem virtutis, similiter nomen infiniti. Quantitas autem virtutis non tantum attenditur quantum ad opus, sed etiam quantum ad nobilitatem valoris; et hoc patet, quia, ut dicit Augustinus, «in spiritualibus idem est maius et melius».

For just as it belongs to the divine power to do many things, so also does it belong to the divine essence to be in many things.²⁹⁸

(3) In response to the third objection that what is finite to the supreme truth is finite, it ought to be said that this proposition has two meanings: for either (1) it is finite to the supreme truth because the truth judges that it is finite, or because (2) it does not exceed the truth's comprehension. In the first way, God is not finite to himself, but infinite. In the second way he is finite because he does not exceed himself, although he is infinite; and thus the argument is not valid, and there is in it a fallacy *secundum quid* and *simpliciter*: if it does not exceed the infinite, then it is simply finite.²⁹⁹

(4) In response to the fourth objection that the infinite does not limit something else, it should be said that the infinite through the privation of perfection does not limit something else; but the infinite through the negation of limitation does have the essence of limiting, because, since it is supreme, in it is every stopping point (*status*): for in this the infinite conflicts neither with simplicity nor with the complement.³⁰⁰

(5) In response to the fifth objection that the divine essence is comprehended, it ought to be said that it is not comprehended by means of inclusion, but by means of a perfect vision, love, and embrace, and this on the part of the thing which comprehends, not on the part of

²⁹⁸ Ad illud quod obiicitur, quod est unum ita, quod non est aliud; dicendum, quod aliquid comparari ad multa potest esse dupliciter: aut secundum comparationem causalitatis, aut secundum comparationem identitatis. Comparari ad multa sub ratione causalitatis hoc convenit infinito, quia infinitum; sed secundum rationem identitatis, non. Unde quia infinitum, ideo se extendit ad multa, sed non sequitur, quod sit multa. Unde si essentia vel potentia comparetur secundum rationem identitatis ad res, neutra est plurium; unde nec potentia divina est aliae potentiae, nec essentia aliae essentiae; si secundum rationem causalitatis, sic convenit et potentiae et essentiae. Nam sicut potentiae convenit facere plura, sic essentiae in pluribus esse.

²⁹⁹ Ad illud quod obiicitur, quod est finitum summae veritati; dicendum, quod haec est duplex: aut enim est finitum summae veritati, quia veritas iudicat, ipsum esse finitum, aut quia non excedit eius comprehensionem. Primo modo non est Deus sibi finitus, sed infinitus; vere enim scit, se esse infinitum. Secundo modo est finitus, quia se non excedit, cum sit infinitus; et sic non valet argumentum, et est ibi fallacia secundum quid et simpliciter: si non excedit infinitum: ergo est finitum simpliciter.

³⁰⁰ Ad illud quod obiicitur, quod infinitum non finit; dicendum, quod infinitum per privationem perfectionis non finit; sed infinitum per negationem limitationis habet rationem finiendi, quia, cum sit summum, in ipso est omnis status: in hoc enim infinitas non repugnat simplicitati nec complemento.

the one comprehended; and so because the one comprehending is perfected, he finds rest, although there is nothing beyond to attain.³⁰¹

(6) In response to the final objection, it was resolved; for it objects about the infinite, according to which it is called privative; but just as it is said about God, it does not express privation according to the thing, but only in the mode of signifying; and the final position answers to this point. For nothing is called immeasurable except that which has the highest and most perfect actuality and nothing restricting and delimiting it. Whence although it seems to be spoken of privatively, yet according to the truth, the meaning excludes every privation.³⁰²

Question III

The third question is about the infinity of divine power with respect to its operative ability, namely whether the divine power is capable of an actually infinite effect. And that the divine power is thus capable is shown in this way:

Arguments for the preferred position

(1) Power is disposed proportionately to its effect, so that a power of one degree can produce an effect of the same degree: therefore also a greater power produces a greater effect, and an actually infinite power produces an actually infinite effect.³⁰³

³⁰¹ Ad illud quod obiicitur, quod comprehenditur; dicendum, quod non comprehenditur per inclusionem, comprehenditur autem per perfectam visionem, dilectionem et tentionem, et hoc a parte comprehendentis et non comprehensi; et ideo, quia perficitur, requiescit, quamvis ultra non attingat.

³⁰² Quod ultimo obiicitur, solutum est; obiicit enim de infinito, secundum quod dicitur privative; sed prout dicitur de Deo, non dicit privationem secundum rem, sed solum quantum ad modum significandi; et respondet ei summa positio. Nihil enim dicitur immensum, nisi quod habet summam et perfectissimam actualitatem et nihil coarctans et determinans. Unde etsi videatur dici privative, tamen secundum veritatem excludit omnem privationem.

³⁰³ Potentia se habet proportionaliter ad opus, unde tanta potentia potest in tantum opus: ergo et maior in maius, et infinita actu in infinitum actu (771).

- (2) Every power, which operates wholly from itself, if it is infinite, produces an infinite thing, when it operates from the fullness of its strength; but the divine power, since it is most simple, operates wholly from itself: therefore it seems that it produces an infinite effect. If you say in reply that this cannot be because of the defect and limitation of its effect – on the contrary, vain is that power which is not reduced to actuality; whence also the Philosopher says that an active power is void to which a passive power does not correspond: therefore also the infinite divine power is void, or else an infinite effect and an infinite passive power correspond to it.³⁰⁴
- (3) Every power can manifest itself, therefore the divine power, since it is infinite, can manifest its infinity; but infinity is not manifest except in an infinite effect: therefore, etc. If you say in reply that it is manifest in the production of the Son and the Holy Spirit – then one would object that the Holy Spirit has an infinite power: therefore, it can manifest that power, but not in the production of an infinite person: therefore in the production of a creature.³⁰⁵
- (4) Everything possible can exist in reality; but God can produce infinite things: therefore it is possible that infinite things be produced, therefore infinite things can be supposed to exist. But “when the possible is supposed to exist, nothing contradictory follows”: therefore when it is supposed that God produces infinite things, nothing contradictory follows. But God can do everything that it is not contradictory to be able to do or to

³⁰⁴ Item, omnis potentia, quae operatur ex se tota, si est infinita, producit infinitum, cum operetur ex tota sua virtute; sed divina potentia, cum sit simplicissima, se tota operatur: ergo videtur, quod producat effectum infinitum. *Si tu dicas*, quod hoc non potest esse propter defectum et limitatem ipsius effectus; *contra*: frustra est potentia, quae non reducit ad actum; unde et Philosphus dicit, quod frustra est potentia activa, cui non respondet passiva: ergo aut potentia divina frustra est infinita, aut ei respondet effectus infinitus et potentia passiva infinita (771).

³⁰⁵ Item, omnis potentia potest se ipsam manifestare, ergo divina potentia, cum sit infinita, potest suam infinitatem manifestare; sed infinitas non manifestatur nisi in effectu infinito: ergo etc. *Si tu dicas*, quod manifestatur in productione Filii et Spiritus sancti; *tunc obiicitur*, quod Spiritus sanctus habet potentiam infinitam: ergo potest ipsam manifestare, sed non in productione personae infinitae: ergo in productione creaturae.

- do: therefore God can make it the case that there are actually an infinite number of things.³⁰⁶
- (5) Let ‘A’ designate the class of creatable objects; then I ask whether A is finite or infinite. If A is finite and God cannot create objects in addition to those of A: therefore, God can only create a finite number of things: therefore God’s power is finite. If A is infinite and God can create the objects in A: therefore God can make some things actually infinite.³⁰⁷
- (6) “The continuum is infinitely divisible”; I ask whether God can reduce the potentiality of the continuum to actuality. If he cannot, then the power of the continuum exceeds the power of God; which is absurd because then the divine power would be finite. If God can altogether reduce it to actuality – but this is not the case, unless it had actually been divided into infinite parts: therefore, etc.³⁰⁸

Arguments against the preferred position

- (1) It seems that God’s power cannot bring about an effect infinite in extension because nothing is greater than the infinite *simpliciter*: therefore if God produces an infinite effect, there would be nothing greater than that effect: so God would not be greater than that effect. So then if the fact of being equaled by nothing belongs to God’s

³⁰⁶ Item, omne possibile ponibile in esse; sed Deus potest producere infinita: ergo infinita produci est possibile, ergo ponibile. Sed “possibili posito in esse, nullum accidit inconveniens”: ergo posito, quod Deus faciat infinita, nullum accidit inconveniens. Sed Deus potest omne illud quod non est inconveniens posse vel facere: ergo Deus potest facere, quod sint infinita actu.

³⁰⁷ Item, appelletur A omne credibile; tunc quaero: A aut est finitum, aut infinitum. Si finitum, et Deus non potest nisi A: ergo non potest nisi finita: ergo potentia eius est finita. Si infinitum, et Deus potest facere A: ergo potest facere aliqua actu infinita.

³⁰⁸ Item, “continuum est divisibile in infinitum”; quaero, utrum Deus possit reducere potentiam continui ad actum. Si non potest: ergo potentiam continui excedit potentiam Dei; quod est absurdum, quia tunc potentia divina esset finita. Si eam potest reducere ad actum omnino; sed hoc non est, nisi cum est actu divisum in partes infinitas: ergo etc.

supreme excellence, the production of such an effect is contrary to the excellence of the divine power.³⁰⁹

(2) Everything which is actually infinite is absolutely simple. For if something is composite, then there is in it restriction and limitation. If therefore God were to produce an infinite effect, that effect would be as simple as possible; but even in the most simple thing, there is essence, goodness, and power: therefore if the effect is infinite in power and goodness, then it is the highest good, therefore it is not good because of another, so it is not good because of God: therefore neither is it from God, because *the Lord does all things on account of himself*³¹⁰, and likewise it is an end, which is also a first principle. Therefore if it is infinite, it is not from God: so it is not an effect.³¹¹

(3) Third, if God is capable of an actually infinite effect, then I ask you whether he is capable of another? If you answer ‘no’, then in acting God loses power, and his power is weakened by acting. If you answer ‘yes’, that he is capable of another actually infinite effect, then suppose he does it, let it exist. These two effects are similar in nature, therefore they are in the same genus: therefore if they are in the same genus, then they have something more, in which they are similar, and something unique, by which they differ from each other; therefore they are exceeded by

³⁰⁹ Sed contra: 1. Quod non possit in effectum *intensione* infinitum, videtur, quia infinito simpliciter nihil est maius: ergo si producit effectum infinitum, tunc ergo illo nihil est maius: ergo Deus non est maior. Si ergo hoc est summae nobilitatis in Deo, quod nihil possit ei aequari, producere talem effectum est contra nobilitatem divinae potentiae: ergo, etc.

³¹⁰ Proverbs 16:4.

³¹¹ Item, omne quod est actu infinitum, est summe simplex. Nam si est aliqua compositio, tunc est ibi coarctatio et limitatio. Si ergo Deus producit effectum infinitum, illud est simplicissimum; sed in simplicissimo idem est essentia, bonitas et potentia: ergo si effectus est infinitus in potentia et bonitate, ergo summum bonum, ergo non bonum propter aliud, ergo non bonum propter Deum: ergo nec a Deo, quia *universa propter semetipsum operatus est Dominus*, et idem est finis, quod et primum principium. Ergo si est infinitus, non est a Deo. ergo non est effectus; et sic patet etc.

something, and they are restricted by means of something. But everything like that is finite: ergo, etc.³¹²

(4) Fourth, that God is not capable of making an actual infinity of things is shown from the fact that there are not more things than an infinity of things: so if he produced an actual infinity of things, he could not produce more: therefore God is impotent. But nothing can make God impotent: ergo, etc.³¹³

(5) Fifth, when you have an actual infinity according to number, *status* and order and distinction fail; but the divine wisdom does not allow God to make something without mode and measure: ergo, etc.³¹⁴

Resolution of the opposing arguments

I answer that it must be said that the infinite is twofold: there is an actual infinite and a potential infinite.³¹⁵ God can and does make the potential infinite; the actual infinite he neither can nor does make. He cannot make it, I say, because (A) it is neither appropriate for him nor (B) proper for a creature [to be actually infinite].³¹⁶

³¹² Item, si Deus potest in effectum actu infinitum; quaero a te, utrum possit in aliud. Si non: ergo in agendo amittit potentiam, et sua potentia agendo debilitatur. Si ergo potest in effectum alium consimilem illi, esto quod faciat; ponatur ergo. Isti duo effectus sunt consimiles in natura, ergo sunt in eodem genere: ergo si sunt in eodem genere,¹ tunc habent aliquid in plus, in quo *conveniunt*, et aliqua propria, per quae *differunt*; ergo exceduntur ab aliquo, et arctatur per aliquod. Sed omnia talia sunt finita: ergo etc.

³¹³ Item, quod non possit facere infinita actu, ostenditur, quia non sunt *plura* infinitis: ergo si produceret infinita actu, non posset producere plura: ergo Deus est impotens. Sed nihil potest facere Deum impotentem: ergo etc.

³¹⁴ Item, ubi est infinitas actualis secundum *numerum*, ibi deficit status et ordo et distinctio; sed divina sapientia non patitur, Deum aliquid facere sine modo et mensura: ergo etc.

³¹⁵ Aristotle, *Physics* III, ch. 6 (206a6-14): “We must keep in mind that the word ‘is’ means either what potentially is or what fully is. Further, a thing is infinite either by addition or by division. Now, as we have seen, magnitude is not actually infinite. But by division it is infinite. . . . The alternative then remains that the infinite has a potential existence.”

³¹⁶ Respondeo: Dicendum, quod duplex est infinitum, scilicet in *actu* et in *potentia*. Infinitum in *potentia* Deus *potest* facere et *facit*; infinitum in *actu* non *potest* facere nec *facit*. Non *potest*, inquam, facere, quia nec convenit *sibi*, nec convenit *creaturae*.

- (A) It is not fitting for God, for since God is supremely good, he cannot make something unless it is good, and thus he cannot make a thing unless it is ordered to itself. Since therefore order presupposes number, and number presupposes measure, because something is not ordered to another unless it is numbered, and it is not numbered unless it is bounded. Therefore, it was necessary that God make everything in *number, weight, and measure*³¹⁷; and he could not nor can he do otherwise, nor can he make an actually infinite thing or an actually infinite number of things.³¹⁸
- (B) The other reason is that [to be actually infinite] is in no way proper for a creature. For an actually infinite thing is pure act - otherwise, if it had something of limitation or restriction, it would be finite; but that which is pure act is essentially its own existence, and no such thing receives existence either from another essence or *ex nihilo*. So if a creature, for the very reason that it is a creature, is from another and is *ex nihilo*, then in no way can it be pure act, in no way can it be infinite. And if one creature cannot be infinite, in no way can creatures be infinite in respect of number, because it is necessary that so many creatures be reduced to one creature; but to reduce infinite things to the finite is impossible. And that they are reduced to something finite is clear: because it is necessary to posit an ordering among creatures, not only as ordered to God, but also as ordered among themselves.³¹⁹

³¹⁷ “But thou hast arranged everything in measure and number and weight” (Wisdom 11:21).

³¹⁸ *Sibi non convenit: cum enim summe bonus sit, non potest aliquid facere nisi bonum, et ita non potest facere nisi rem ad se ordinatam. Quoniam igitur ordo praesupponit numerum, et numerus praesupponit mensuram, quia non ordinantur ad aliud nisi numerata, et non numerantur nisi limitata; ideo necesse fuit, Deum facere omnia in numero, pondere et mensura, nec aliter facere potuit nec potest, nec infinitum nec infinita in actu.*

³¹⁹ Bonaventure’s editor suggests a reference to *Metaphysics* XII, ch. 10: “We must consider also in which of two ways the nature of the universe contains the good or the highest good, whether as something separate and by itself, or as the order of the parts. Probably in both ways, as an army does. For the good is found both in the order and in the leader, and more in the latter; for he does not depend on the order but it depends on him. And all things are

And the sum of the response is this, that it is not fitting for God to make a creature unless it have order and measure; and the reason is on the part of the creature, because it is necessary that every creature is limited, because it is *ex nihilo*, and for the very reason that it is composite.³²⁰

Individual replies to the arguments against the preferred position

- (1) In response to the first objection that a power of a given quantity can produce an effect or work of the same quantity; we must say that there is a work working and a work having been worked: a working work is, for example, to create, a work having been worked is, for example, a creature. So it must be said that the work working is infinite, just as the Creator himself, but the work having been worked is necessarily finite. So that which is objected, that the work is proportionate to the power - if it is understood about the work working or about the action generally, it is true; but if it is understood about the work having been worked, it is not true, except in the case when cause and effect are univocal and belong to one genus; however this is not the case here.³²¹
- (2) In response to the second objection that God works with his entire power; it ought to be said that the one acting with his entire power does something naturally, and he does this

ordered together somehow, but not all alike, - both fishes and fowls and plants; and the world is not such that one thing has nothing to do with another, but they are connected. For all are ordered together to one end.”

³²⁰ Ratio est etiam, quia hoc nullo modo convenit *creaturae*. Infinitum enim in *actu* est actus purus, alioquin, si aliquid haberet de limitatione et arctatione, esset finitum; sed quod est actus purus, est *suum esse* per essentiam, et nihil tale accipit esse ab alia essentia nec ex nihilo. Si igitur creatura, eo ipso quod creatura, aliunde est et ex nihilo, nullo modo potest esse actus purus, nullo modo potest esse infinita. Et si non potest esse *una* infinita, nullo modo possunt esse infinitae secundum *numerum*, quia necesse est, illas plures ad aliquam unam creaturam reduci; sed infinita ad finitum reduci, est impossibile: patet ergo etc. Et quod ad aliquod finitum necessario reducuntur, patet: quia necesse est ponere ordinationem in creaturis, non tantum ad Deum, sed etiam ad se invicem. Summa ergo responsionis est, quia non *debet Deum* facere creaturam, quin *ordinem* habeat et *mensuram*; et ratio est *ex parte creaturae*, quia necesse est, omnem creaturam esse limitatam, eo quod ex nihilo, et eo ipso quod composita est.

³²¹ Ad illud quod obiicitur, quod potentia tanta potest in tantum effectum sive opus; dicendum, quod est opus *operans* et opus *operatum*: opus *operans*, ut creare, opus *operatum*, ut creatura. Dicendum ergo, quod opus *operans* est infinitum, sicut ipse Creator, sed opus *operatum* necesse est esse finitum. Quod ergo obiicitur, quod opus proportionatur potentiae; si intelligatur de opere *operante* sive de actione generaliter, verum est; si autem intelligatur de opere *operato*, non habet veritatem, nisi cum causa et effectus se habent per univocationem et sunt unius generis; hoc autem non est hic.

as powerfully as he can, and the thing is as great as can be; that is, in the case of a similar production. He does something deliberately and voluntarily, and he does not do such a thing except according to the order and as much as he intends: from which it follows that by the same power he does both great and small things; and in such a way does God act. To that which is objected that power is vain which is not reduced to actuality; it is true about power which is completed and perfected in act; but divine power is not completed in action, and therefore it is not in vain, even if it does not have a corresponding passive power. Nevertheless that proposition is understood to be false of the power which can be infinite, if it is understood that it is altogether reduced to act; nevertheless it is reduced and can be reduced in part; and thus it is not in vain.³²²

(3) In response to the third objection that the divine power, since it is infinite, ought to manifest its infinity in an infinite effect; we must say that God manifests his infinity in the infinite in respect of his power, just as is clear, because, just as was shown above, a limitless duration manifests infinite power. In the infinite however in respect of an act it cannot be manifested *simpliciter*, because being infinitely exceeds non-being; and nevertheless God made being *ex nihilo*, and between being and non-being there is an infinite distance.³²³

³²² Ad illud quod obiicitur, quod Deus operatur ex tota potentia; dicendum, quod agens ex tota potentia quoddam agit per *naturam*, et hoc agit tantum quantum potest, et tantum quantum ipsum est; ubi est productio similis. Quoddam agit per *deliberationem* et *voluntatem*, et tale non agit nisi secundum ordinem et quantum vult: unde ex eadem potentia facit magnum et parvum; et sic agit Deus. Ad illud quod obiicitur, quod frustra est potentia, quae non reducitur ad actum; verum est de potentia, quae completur et perficitur in actu; sed divina potentia non completur per actum, et ideo non est frustra, etiamsi non habeat potentiam *passivam* correspondentem. Tamen illa propositio intelligitur non habere veritatem in potentia, quae potest esse infinita, si intelligatur quod *omnino* reducatur ad actum; reducitur tamen et reduci potest *secundum partem*; et ideo non est frustra.

³²³ Ad illud quod obiicitur, quod divina potentia, cum sit infinita, debet suam infinitatem manifestare in infinito effectu; dicendum, quod Deus suam infinitatem manifestat in infinito *secundum potentiam*, sicut patet, quia, sicut supra monstratum est, interminabilis duratio manifestat virtutem infinitam. In infinito autem *secundum actum* non potest manifestari *simpliciter*, quia non decet, sed *proportionaliter*, quia ens in infinitum excedit non-ens; et tamen Deus ex nihilo facit ens, inter quae est distantia infinita.

So the divine power is called infinite in a three-fold manner: by an eternity of duration, by the immeasurableness of strength and by the generality or number of its effects; the first is manifested by an infinitely long duration, which is actually finite, though potentially infinite; the second is manifest through the creature of things *ex nihilo*, where there is an infinite distance because of the altogether dissimilar nature of being and non-being; the third is manifest partly through positing and partly through removing, because he made such a number of things and still can make many more, and such a number of things he did not make, though he could yet make them; nevertheless this is manifested by another infinity manifested in two ways. And thus it is clear that it is not fitting that there exist an actual infinite.³²⁴

It can be said, however, just as was mentioned, that the strength of the Father is manifest in the production of the Word, and consequently the whole divine power, since the power of the Son and the Holy Spirit are one, and they are equal in power.³²⁵

(4) In response to the fourth objection about the creation of whatever is possible; we should say that there are two types of possibility: there is possibility by an infinite potentiality and possibility according to a finite potentiality. That which is possible according to a finite potentiality can be created because the power can be altogether reduced to actuality; but that which is possible according to a infinite potentiality cannot be created

³²⁴ Unde cum divina potentia dicatur infinita tripliciter: *durationis aeternitate, virtutis immensitate et effectuum generalitate sive numerositate*; *prima* manifestatur per infinitum duratione, quod est finitum actu, infinitum in potentia; *secunda* per creationem de nihilo, ubi est distantia infinita propter omnimodam improprietatem; *tertia* manifestatur partim per *positionem*, partim per *privationem*, quia tot fecit et adhuc potest in plura, et non tot fecit, quin adhuc potest in plura; tamen hoc manifestatur alia infinitate duplici manifesta. Et ita patet, quod non oportet, quod sit infinitum actu.

³²⁵ Potest tamen dici, sicut tactum est, quod virtus Patris manifestatur in productione Verbi, et per consequens tota virtus divina, cum virtus Filii et Spiritus sancti sit una, et aequales sint in virtute.

because it is forever in the process of being reduced, and is never in the state of having been reduced.³²⁶

(5) In response to the fifth objection where A is called the class of creatable things; let it be. That the objector asks whether A is finite or infinite; I say, that A is infinite, but it is not actually infinite, but potentially; and therefore it does not follow that if God can create the things in A that he can create the actually infinite. And if it is said, let it be supposed that God creates all the things in A; it ought to be said that it is not a possible supposition, for the reason already mentioned.³²⁷

(6) In response to the sixth objection about whether God can reduce the potentiality of the continuum to actuality; it ought to be said that just as the passive potentiality in the continuum is infinite with respect to division, so in God there is active infinite potentiality. Whence just as the continuum can be divided infinitely, nevertheless it is impossible that it is completely *divided*, otherwise it would not be infinite; thus it is possible to reduce “dividing infinitely” to actuality; but, just as it is impossible to mark the limit of divine power, so it is impossible that the divine power reach the end point of the division of the continuum. Whence God can reduce the potentiality of the continuum to actuality because it can be in the process of being reduced and can always be in that process, such that the divine power never outreaches the divine action: but nevertheless

³²⁶ Ad illud quod obiicitur de possibili, quod potest poni; dicendum, quod est possibile a potentia *infinita*, et possibile secundum potentiam *finitam*. Possibile secundum potentiam *finitam* potest poni, quia omnino potest esse ad actum reducta; sed possibile secundum potentiam *infinitam* non potest poni, quia semper est in *reducendo*, et nunquam in *reductum esse*.

³²⁷ Ad illud quod obiicitur, quod A appelletur omne creabile; esto. Quod quaerit, utrum A sit finitum, vel infinitum; dico, quod infinitum, sed non est infinitum actu, sed potentia; et ideo non sequitur, quod si Deus possit A, quod possit in actum infinitum. Et si dicatur: ponatur, quod Deus faciat A; dicendum, quod non est ponibile, ratione praedicta.

the continuum never can be in the state of having been reduced, just as neither can God be said to have so reduced it.³²⁸

Question IV

The fourth and final question is about the infinity of divine power with respect to the cause of its activity, and the question is whether the cause of its activity extends itself to the infinite. And for these reasons it seems that it does³²⁹:

Arguments for the preferred position

Because whatever God can do, he can do reasonably; but he can do infinite things: therefore he can reasonably do infinite things. And if this is the case, then the cause of the activity of his power extends itself to infinite things.³³⁰

Just as the cause of knowing is related to knowledge, so the cause of producing is related to power; but because the divine knowledge is infinite, therefore it has in itself infinite

³²⁸ Ad illud quod quaeritur, utrum possit potentiam continui reducere ad actum; dicendum, quod sicut potentia in continuo passiva infinita est ad divisionem, sic in Deo activa infinita. Unde sicut continuum potest dividi in infinitum, tamen impossibile est, quod totaliter sit divisum, alioquin non esset infinitum; sic dividere in infinitum est possibile ad actum reducere; sed, sicut impossibile est, divinam potentiam terminari, ita impossibile est, quod sit in termino divisionis. Unde Deus potest potentiam continui reducere ad actum, quia potest esse in reducendo et semper esse in reductum esse, sicut nec Deus in redivisse.

³²⁹ Quarto et ultimo quaeritur de infinitate divinae potentiae quantum ad rationem operandi, et quaeritur, utrum ratio operandi se extendit in infinitum. Et quod sic, videtur:

³³⁰ Quia quidquid Deus potest, rationabiliter potest; sed potest infinita: ergo rationabiliter potest infinita. Et si hoc, ergo ratio operandi ipsius potentiae se extendit ad infinita.

causes of cognizing: therefore since the divine power is infinite, likewise also it has infinite causes of producing.³³¹

The cause of activity in God is not something other than his goodness and wisdom; but the wisdom and goodness of God are infinite: therefore the cause of his activity is also infinite.³³²

The cause of activity in God is nothing other than God or the divine essence, whatever that cause is called; but the divine essence is infinite: therefore the cause of activity is also infinite.³³³

Arguments against the preferred position

- (1) Power issues in activity according to the constraints of the cause - for it omits nothing of those things which the cause demands - if therefore the cause is related to an infinite number of things, then it seems that the divine power produces infinite things, which is false.³³⁴
- (2) The cause of activity is itself an art and a disposition; but a disposition is only of finite things: therefore the cause of activity is only of finite things.³³⁵

³³¹ Item, sicut se habet ratio sciendi ad scientiam, ita ratio producendi ad potentiam; sed quia divina scientia est infinita, ideo habet in se rationes infinitas cognoscendi: ergo cum divina potentia sit infinita, similiter et rationes producendi habet infinitas.

³³² Item, ratio operandi in Deo non est aliud quam bonitas et sapientia; sed sapientia et bonitas est infinita: ergo et ratio operandi.

³³³ Item, ratio operandi in Deo non est aliud quam Deus sive divina essentia, quidquid dicatur illa ratio; sed divina essentia est infinita: ergo et ratio operandi.

³³⁴ Potentia se extendit ad opera secundum exigentiam rationis — nihil enim omittit de his quae ratio exigit — si ergo ratio se extendit ad infinita, ergo videtur, quod divina potentia producat infinita, quod falsum est.

³³⁵ Item, ratio operandi est ipsa ars et dispositio; sed dispositio non est nisi finitorum: ergo ratio operandi non est nisi finitorum.

(3) The cause of activity is divine justice itself, because *all the ways of the Lord are mercy and truth*; but justice is only of finite things: therefore it seems no different in the case of the cause of activity.³³⁶

(4) There is an objection from prescience, which is also a cause of activity and reaches farther than the divine power, because God foreknows evil things but cannot do them; and nevertheless it does not reach as far as infinite things. If you should say that a disposition or prescience or justice does not embrace the full cause, through which the divine power can operate; on the contrary: if it does not embrace the whole than the divine power can reasonably operate without these things: therefore it is possible that God operates beyond a disposition, beyond justice and beyond prescience. But no such thing operates wisely or rightly: ergo etc. It remains, therefore, that it embraces the whole cause.³³⁷

Resolution of the opposing arguments

I answer: just as the Master says in the text, some chose to say that the cause of divine power is finite. And by this fact they wished to limit the divine power, both because he can do nothing except for the best reason, nor dismiss something, because he can do nothing except presciently and justly; and therefore since these things are of finite things, for example, of those things which he makes, they said that the divine power could not do other things than what he does (in fact) make. But this position is erroneous, as the Master shows in the text, because it

³³⁶ Item, ratio operandi est ipsa divina iustitia, quia *universae viae Domini misericordia et veritas*; sed iustitia non est nisi finitorum: ergo videtur, quod ratio operandi similiter.

³³⁷ Item, obiicitur de praesentia, quae similiter est ratio operandi et est in plus quam potentia, quia respectu malorum; et tamen non est respectu infinitorum. Si tu dicas, quod dispositio vel praesentia vel iustitia non complectitur plenam rationem, per quam potest operari divina potentia; contra: si non totam complectitur, ergo divina potentia sine his potest rationabiliter operari: ergo possibile est, Deum operari praeter dispositionem, praeter iustitiam et praeter praesentiam. Sed nullus talis operatur sapienter nec recte: ergo etc. Restat igitur, quod totam complectitur rationem.

detracts from the nobility of the divine power by limiting its immensity; and it is said that this was the opinion of Master Peter Abelard. Moreover the reason of this foolish position was that they did not know how to draw the right distinctions about the cause of divine power and its actuality. For the actuality of power is twofold: there is one actuality through the mode of a habit, namely *to be able*, another through the mode of activity, namely to operate.³³⁸

When therefore it is asked whether the cause of divine power is infinite, we should say that just as “actuality” has two senses, so “cause” can be taken in two ways. For with respect to the actuality, which is *to be able*, “cause” is understood as a disposition, namely the divine knowledge and the condescension of the divine goodness; and this cause extends itself to infinite things, just as also does power itself with respect to the actuality, which is *to be able*. But with respect to the actuality, which is *to do*, “cause” is understood as an activity, namely the divine arrangement of the world or foreknowledge of the events in the world and the constraint of merits. For God does nothing but what he decrees; nor, when he repays, does he repay anything except that which merits demand; he governs nothing nor does he rule in any other way than as his nature and natural justice demand.³³⁹

³³⁸ Respondeo: Sicut dicit Magister in littera, aliqui voluerunt dicere, quod ratio divinae potentiae est finita. Et ex hoc voluerunt divinam potentiam limitare, tum quia nihil potest facere nisi ex optimaratione, nec dimittere, tum quia nihil potest facere nisi praesciens, nihil nisi iuste; et ideo cum haec finitorum sint, ut puta eorum quae facit, dixerunt, divinam potentiam non posse alia, quam quae facit. — Sed haec positio est erronea, sicut ostendit Magister in littera, quia nobilitati divinae potentiae derogat eius immensitatem limitando; et dicitur fuisse Magistri Petri Baalardi.

Ratio autem huius stultae positionis fuit, quia nescierunt distinguere rationem potentiae nec actus eius. Actus enim potentiae duplex est: unus per modum habitus, scilicet posse, alius per modum actus, scilicet operari.

³³⁹ Quando ergo quaeritur, utrum ratio divinae potentiae sit infinita; dicendum, quod sicut duplex est actus, ita dupliciter potest accipi ratio. Respectu enim actus, qui est posse, accipitur ratio in habitu, scilicet divina scientia et divinae bonitatis condecencia; et haec ratio se extendit ad infinita, quemadmodum et ipsa potentia respectu actus, qui est posse. Respectu vero actus, qui est facere, accipitur ratio in actu, scilicet divina dispositio sive praescientia et meritorum exigentia. Nihil enim facit, nisi quod disponit; nihil etiam retribuit, nisi secundum quod merita exigunt, quando retribuit; nullam rem gubernat nec regit aliter, quam natura eius sive iustitia naturalis exigit.

Individual replies to the arguments against the preferred position

(1/2) And from this distinction the response to the first question and its arguments is clear:

for certain things proceeds according to one way, and certain others according to another.³⁴⁰

(3/4) In response to the argument afterwards raised about justice, one ought to say that justice, in as much as it expresses a fittingness to divine goodness and power, is thus a general cause, which embraces the whole of *to be able*; but inasmuch as it connotes an exigency on the part of merits, in this way it does not embrace the whole *to be able* nor the whole *to act*; but inasmuch as it connotes the fittingness of goodness with respect to some time in act, thus it embraces *to act*, but not *to be able*. Disposition and prescience similarly embrace *to act*, but not *to be able*; but *to act* is with respect to finite things, just as also those things are, but *to be able* is with respect to infinite things.³⁴¹

Then to the objection that God can operate reasonably without these things [justice and foreknowledge], one ought to say that it is false nor does it follow from the argument. For although God can do more things than he (in fact) chooses to do, nevertheless he cannot operate apart from a volition; since he can do nothing but what he can will to do, so also he can do nothing but what he can foreknow and decree. For it is necessary that the power of attainment is equal to these things, namely to the

³⁴⁰ Et secundum hanc distinctionem patet responsio ad primo quaesitum et ad rationes inductas: quaedam enim procedunt secundum unam viam, quaedam secundum aliam.

³⁴¹ Ad illud quod postea obiicitur de iustitia, dicendum, quod iustitia, secundum quod dicit condecetiam divinae bonitatis et potestatis, sic est generalis ratio, quae complectitur totum posse; sed in quantum connotat exigentiam a parte meritorum, sic non complectitur totum posse nec totum agere; in quantum vero connotat condecetiam bonitatis respectu cuiuslibet temporis in actu, sic complectitur agere, sed posse non. Dispositio similiter et praescientia agere complectitur, sed non posse; sed agere est respectu finitorum, sicut et illa sunt, sed posse est respectu infinitorum.

decision and the volition, but it is not necessary about power as powerful: therefore it does not follow that he can make without those things.³⁴²

Distinction XLIV

Article I

On the possibility of a better world

Question IV

The fourth question is whether God could have made the world older.³⁴³ And from the following arguments, it seems that he could have.

Arguments for the preferred position

In the last chapter of 2nd Peter: *A thousand years are as a day in God's sight*. And the psalm: *A thousand years before your eyes are as yesterday, which has passed away*; by

³⁴² Quod ergo obiicitur tunc, quod Deus potest sine eis rationabiliter operari; dicendum, quod falsum est nec sequitur ex illo. Quamvis enim Deus possit plura, quam velit, tamen non potest operari sine voluntate; quoniam nihil potest facere, quin possit velle, sic et praescire et disponere. Necesse est enim, potentiam exsequentem illis adaequari, scilicet dispositioni et voluntati, sed non oportet de potentia ut potente: ideo non sequitur, quod possit facere sine illis.

³⁴³ This is a question which, unfortunately, Aquinas does not pose in his own commentary on the *Sentences*. The Quaracchi editors of Bonaventure's commentary indicate that Peter of Tarentum (1102-1174), Albert the Great (1193/1206-1280), and Richard of Middleton (c. 1249-1302) treat of this question and reach the same conclusions as Bonaventure.

parity of reasoning, so are an hundred thousand years: therefore if God could make the world before yesterday, he could make it an hundred thousand years earlier. And if this is the case, then the world would be older: ergo etc.³⁴⁴

The divine power and operation depend neither on matter nor on time: by this reason, therefore, he can do at one point of time what he can do in another; but by this reason what he does at a later time, by the same reason he can do at an earlier time. And if this is the case, the world could become older: ergo etc.³⁴⁵

The divine essence and power were before the beginning of time; therefore either he was able to produce the world earlier, or not. If *not*: then he was unable; if *yes*: then he could make the world before he made it.³⁴⁶

I ask whether he could have made the world after he (in fact) made it. If 'yes'; but there is not a greater reason about *after* than about *before*: so by parity of reasoning he could have made it before. Or if he could not have made it after, neither could he have made it before, and thus it was necessary that he made it *then*: so it seems that compelled and not voluntarily he made the world *then*.³⁴⁷

³⁴⁴ Secundae Petri ultimo: *Mille anni apud Deum sicut una dies*. Et in Psalmo: *Mille anni ante oculos tuos tanquam dies hesternam, quae praeteriit*; pari ratione centum millia annorum: ergo si Deus potuit facere mundum ante diem hesternam, potuit per centum millia annorum ante. Et si hoc, esset antiquior: ergo etc.

³⁴⁵ Item, divina potentia et operatio non dependet nec a materia nec a tempore: ergo qua ratione potest in uno instanti, potest in alio; sed qua ratione in posteriori, eadem ratione in priori. Et si hoc, mundus potuit fieri antiquior: ergo etc.

³⁴⁶ Item, divina essentia et potentia fuit ante temporis principium; aut ergo fuit potens producere ante, aut non. Si non: ergo erat impotens; si sic: ergo potuit facere mundum, antequam faceret.

³⁴⁷ Item, ergo quaero, utrum potuerit facere post. Si sic; sed non est maior ratio de post quam de ante: ergo pari ratione potuit facere ante. Aut si non potuit post, nec ante, et ita necesse fuit quod tunc: ergo videtur, quod compulsus et non voluntarius mundum fecerit tunc.

Arguments against the preferred position

- (1) Before the beginning of time there was nothing except eternity: therefore if God could make the world before the beginning of time, he could make it also in eternity; but that which exists in eternity lacks a beginning, and no such thing can be created *ex nihilo*: ergo etc.³⁴⁸
- (2) Let us suppose that God could make the world before he (in fact) did. Then I ask a similar question: could he make it before that? and so on infinitely; but the infinite *a parte ante* is eternal: therefore if he could make it infinitely before he (in fact) did, he could also have made it from eternity. So if he could not make the world eternal, because then it would not be *made*, neither could he make it older.³⁴⁹
- (3) It is necessary that the world have a finite duration *a parte ante*; but in every finite thing it is necessary that there be some stopping point beyond which it cannot progress; but by the reason that there is a stopping point in some finite point of time, it is stopped in that instance in which the world was founded: ergo etc.³⁵⁰
- (4) Something cannot be thought or conceived earlier than the beginning of all the past; but time or the *aevum*, which begins with the world, is the beginning of all the past: therefore there could be nothing older than it.³⁵¹

³⁴⁸ Ante principium temporis nihil erat nisi aeternitas: ergo si potuit mundum facere ante principium temporis, potuit facere et in aeternitate; sed quod habet esse in aeternitate caret principio, et nihil tale potest esse creatum ex nihilo: ergo etc.

³⁴⁹ Item, si potuit facere ante; ponatur. Similiter ergo quaero, utrum ante? et sic in infinitum; sed infinitum a parte ante est aeternum: ergo si potuit in infinitum ante facere, potuit etiam ab aeterno. Si ergo non potuit facere mundum aeternum, quia non esset factus, nec antiquiorem.

³⁵⁰ Item, necesse est, mundum habere finitam durationem a parte ante; sed in omni finito necesse est alicubi stare, ultra quod non potest fieri progressus; sed qua ratione statur in aliquo instanti finito, statur in illo, in quo conditus est mundus: ergo etc.

³⁵¹ Item, principio totius antiquitatis non potest aliquid fieri vel cogitari antiquus; sed tempus vel aevum, quod incepit cum mundo, est totius antiquitatis principium: ergo eo non potuit aliquid esse antiquius.

Resolution of the opposing arguments

I reply that when it is asked whether God could have made the world older, this can be understood in two ways: either that he created it beginninglessly, although he produced it in time, and then it would be older; or in such a way that the world had existed for a greater amount of time, albeit a finite amount.³⁵²

I believe that the first option is simply impossible because it involves itself in a contradiction. For in as much as the world is thought of as being made, it is supposed to have a beginning. But when it is thought of as being beginningless, it is supposed to have no beginning. So the question, "Could God have made the earlier?" is the same as asking whether the world by having a beginning might not have had a beginning; and this is a contradiction.

Likewise it seems that the second option is in some ways impossible because it contains an opposition in itself, since anteriority or antiquity begin simultaneously with time. For in eternity there is not *before* and *after*; and time begins, of necessity, simultaneously with the world, just as location begins simultaneously with place, and place begins simultaneously with the first sphere. So just as, if it were asked, whether the first sphere could have been made higher, there would be no question at all, rather, it involves a contradiction, namely that outside every place there is a place - and it comes from a mistaken imagination, because it is imagined that the whole world is in a local space, just as we imagine that the earth is surrounded by water - similarly it must be understood in this proposition, which implies a contradiction: it comes from a mistaken imagination because we imagine that before the beginning of the world there was a duration of time, in which the world could have been made earlier. Whence just as, if it were asked, whether the whole world could have been made outside of the whole world, made either

³⁵² Respondeo: Quod cum quaeritur, utrum Deus potuerit facere mundum antiquiorem; potest intelligi dupliciter: aut quod ipsum creaverit ab aeterno, cum produxerit ex tempore, et tunc esset antiquior; aut ita quod mundus durasset tempore longiori, tamen finito.

above or below, it is a foolish question involving opposites and coming from a poor imagination: they respond in this way if it is asked whether the world could have been made earlier or older. So they say that if something had come before the world, measuring this “before” in terms of time, the world certainly could have been made earlier. Similarly, if there were some place outside [of the world], the world could have been made higher.

Moreover, the reason for this bad imagination: when we imagine that eternity for an infinite period existed before time, we understand eternity as though it were an extended duration, in which there are different *nows*, in anyone of which time could have been made. But this line of thought comes to nothing because eternity is the most simple *now*, in which no diversity at all occurs. Therefore it ought to be admitted that, as the reasons already brought in prove, just as God could not make the world in another place, because the world is not in a place containing it, so neither could he make it earlier, because there is no past time but in it.

In response to the objection that with God there is not some power in some quantity of time, and that his power does not depend on time, etc.; they speak with one response to all these things, that although the divine power is limited with respect to nothing, nevertheless the divine power cannot make a thing to have begun without a beginning, nor can he make a temporal thing without time, and he cannot make the first temporal thing except at the beginning of time, and he cannot make a beginning of time except in the beginning of time. For the opposite conclusion does not indicate power, but contradiction and opposition. Yet neither is he limited to thus creating, because he might not have created at all. Whence just as it is a foolish question, if it is asked, whether he could have made the beginning of time before the beginning of time; similarly also the foregoing question.³⁵³

³⁵³ Similiter quantum ad secundum sensum videtur aliquibus impossibile, quia implicat in se oppositionem, quoniam anterioritas sive antiquitas incipit simul cum tempore. Nam in aeternitate non est ante et post; et tempus incipit de

But since it seems hard to say that God could not make the world older, and that he could not make another one, but only this one; for which reason others say that just as God could make a bigger world, so also he could make an older world without any distinction. But nevertheless this is not altogether similar because God could make the heaven bigger and at a greater distance from the earth, the nature of each being preserved; but if God is understood to have made that which is *now* to be at a greater distance from the beginning of time, this *now* is understood to be some other moment of time³⁵⁴, because even if the world would be understood to have been made earlier, yet it would not be older with respect to this *now*, because it would only be as distant as it is distant from the beginning of time; and thus it would not be older.³⁵⁵ And therefore it is neither simply to be denied nor simply to be granted, just as neither was this

necessitate simul cum mundo, sicut situs incipit simul cum loco, et locus cum orbe primo. Unde sicut, si quaeretur, utrum primus orbis potuerit fieri altior, nulla esset omnino quaestio, immo implicat contradictionem, scilicet extra omnem locum esse locum — et venit ex falsa imaginatione, quia imaginatur, totum mundum esse in locali spatio, sicut imaginamur, terram circumdari aqua — similiter intelligendum in proposito, quod est implicatio contradictionis; et venit ex falsa imaginatione, quia imaginamur, ante principium mundi fuisse durationem temporis, in qua mundus potuisset ante fieri. Unde sicut, si quaeratur, utrum totus mundus potuisset fieri extra totum mundum, vel supra, vel infra fieri, stulta est quaestio et implicans opposita et veniens ex mala imaginatione: per hunc modum respondent, si quaeratur, utrum mundus potuerit fieri ante vel antiquior. Unde dicunt, quod, si aliquid praecessisset, ante mensurans temporaliter, potuisset utique ante fieri; similiter si locus esset extra, potuisset altior fieri. — Ratio autem istius malae imaginationis est: cum enim imaginamur, aeternitatem in infinitum ante tempus fuisse, intelligimus eam quasi durationem extensam, in qua sunt diversa nunc, in quarum quolibet potuisset fieri tempus. Sed hoc omnino nihil est, quia aeternitas est nunc simplicissimum, in quo nulla omnino cadit diversitas. — Concedendum ergo, sicut probant rationes inductae ad hoc, quod, sicut non potuit mundum facere in alio loco, quia non est in loco, sic nec ante, quia nulla est antiquitas nisi in eo. — Ad illud quod obiicitur, quod apud Deum non est vis aliqua in aliquanto tempore, et quod potentia eius non dependet etc.; dicunt ad omnia unica responsione, quod quamvis divina virtus ad nihil arctetur, tamen principiatum non potest facere sine principio, et temporale non sine tempore, et primum temporale non potest facere nisi in principio temporis, et principium temporis non nisi in principio temporis. Oppositum enim non dicit potentiam, sed magis contradictionem et repugnantiam. Nec tamen arctatur ad sic faciendum, quia posset omnino non facere. Unde sicut stulta est quaestio, si quaeratur, utrum potuerit facere principium temporis ante principium temporis; similiter et praedicta.

³⁵⁴ Editors: “Or, in other words, this *now*, which is measured according to the fixed distance from the actual beginning of the world to the present time, supposing that (more) time is added to the beginning, would not be the same moment.”

³⁵⁵ Sed quoniam durum videtur dicere, quod Deus non potuit facere mundum antiquiorem, et quin alium mundum facere potuerit, sed tantum istum; propterea dicunt alii, quod, sicut Deus potuit facere mundum ampliorem, ita etiam potuit facere antiquiorem sine omni distinctione. — Sed tamen istud non est omnino simile, quia Deus posset facere caelum amplius et magis distare a terra, salva utriusque natura; sed si Deus intelligatur fecisse, quod istud nunc magis distet a principio temporis, intelligitur illud nunc esse aliud, quia etiamsi intelligatur mundus factus ante, adhuc non esset antiquior respectu istius nunc, quia tantum distaret, quantum distat a principio; et ita non esset antiquior.

proposition: God could make the world higher. For if you take this proposition without qualification, it is false, just as the first opinion says, and it is not intelligible, and involves a contradiction. But if you take the proposition while also allowing the existence of some other space, that is, that God could have made another world containing this one, in which it would be possible to be situated higher or lower, it is true. One ought to judge similarly about past time. And therefore if it is asked whether God could have made the world earlier, one must distinguish just like in the case of whether God could have made the world in another place or elsewhere; because an adverbially determination can occur under the amplification of the term, or outside it. If under the amplification of the term; then it is true, and there is a sense in which God could have made another place and in it have put this whole world. For he could have made an hundred such worlds, and yet one containing them all, and one in an higher place than another. So also it is to be understood in the case of time that God could have made a time before this time, and in that time he could have made the world.³⁵⁶ In another way the adverbial determination can occur outside the amplification of “is able”, and there is a sense in which God can make this world in another place, which is outside the world; and here there is the implication of something false, because there is not place except inside the world; and likewise one must understand the case of time.³⁵⁷

³⁵⁶ Et ideo non est simpliciter neganda nec simpliciter concedenda, sicut nec ista: Deus potuit facere mundum altiozem. Si enim intelligas de hoc absolute, falsa est, sicut dicit prima opinio, et non intelligibile, et implicatio contradictionis. Si autem intelligas per concomitantiam alterius loci, scilicet quia Deus potuit facere alium mundum amplectentem istum, in quo situm posset habere magis altum et minus, verum est. Similiter iudicandum de antiquitate. — Et ideo si quaeratur, utrum Deus potuerit ante facere mundum, distinguendum est sicut et haec: utrum Deus potuerit facere mundum in alio loco vel alibi; quia adverbialis determinatio potest cadere sub ampliatione verbi, vel extra. Si sub ampliatione verbi; tunc est vera, et est sensus, quod Deus potuit alium locum facere et in illo mundum istum totum ponere. Potuit enim facere centum tales mundos, et adhuc unum complectentem omnes, et unum in loco altiori quam alium. Sic et in tempore intelligendum est, quod Deus potuit facere tempus ante hoc, et in illo facere mundum.

³⁵⁷ Alio modo potest cadere adverbialis determinatio extra ampliationem de ly potest, et est sensus, quod Deus potest facere mundum istum in alio loco, qui est extra mundum; et hic est implicatio falsi, quia non est locus nisi intra mundum; et similiter de tempore intelligendum.

Individual replies to the arguments against the preferred position

- (1) In response to the objection that *before* there was nothing but eternity; one ought to say that this is true; and yet God could have made it the case that there was time earlier.³⁵⁸
- (2) In response to the objection about the infinite *a parte ante*, one ought to say that the infinite *a parte ante* exist in positing either actually or potentially. In the first way it means eternity, in the second way, not at all, because eternity means an actual infinity.³⁵⁹
- (3) In response to the objection that it is necessary to posit a stopping point; one ought to say that this is true; but stopping can be infinite; and although in power there is no positing a stopping point, yet because an act does not follow the whole power, but is in some stopping point, therefore it is in a finite stopping point. But why it is in this rather than in another, the reason is the highest and most power choice of the creator.³⁶⁰
- (4) In response to the objection that past time began with the world; one ought to say that this is true; but God could have made it the case that it began earlier; therefore that argument does not succeed. The arguments to the contrary are granted; for the proceed according to the first way.³⁶¹

³⁵⁸ Ad illud ergo quod obiicitur, quod ante non erat nisi aeternitas; dicendum, quod verum est; sed tamen Deus poterat facere, quod ante esset tempus.

³⁵⁹ Ad illud quod obiicitur de infinito a parte ante, dicendum, quod infinitum a parte ante potest esse apponendo aut secundum actum, aut secundum potentiam. Primo modo dicit aeternitatem, secundo modo minime, quia aeternitas dicit infinitum actu.

³⁶⁰ Ad illud quod obiicitur, quod necesse est ponere statum; dicendum, quod verum est; sed status possunt esse infiniti; et licet in potentia non sit ponere statum, tamen quia actus non consequitur totam potentiam, sed in aliquo statu est, ideo in statu finito. Sed quare magis in hoc quam in alio, ratio summa et potissima est voluntas facientis.

³⁶¹ Ad illud quod obiicitur, quod antiquitas coepit cum mundo; dicendum, quod verum est; sed Deus potuit facere, quod ante inciperet; ideo non valet ratio illa. Rationes ad oppositum sunt concedendae; procedunt enim secundum primam viam.

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- Baldner, Stephen & Carroll, William E. 1997. *Aquinas on Creation*. Toronto: Pontifical Institute of Mediaeval Studies. This is a very thorough introduction to Aquinas on creation in addition to a translation of the relevant material from A.'s commentary on the Sentences. Baldner reiterates his view of Bonaventure's position (with Carroll's concurrence, presumably): "Bonaventure did not find it self-contradictory to suppose that something should exist eternally in past time, nor even to suppose that something should be eternally caused in the past. What Bonaventure did find to be self-contradictory was to suppose both the eternal past duration of creatures and their having been created out of nothing" (53, note 95).

Baldner, Stephen. 1997. "St. Bonaventure and the Demonstrability of a Temporal Beginning: A Reply to Richard Davis." *American Catholic Philosophical Quarterly* 71: 225-36. There is nothing here by bolsters in any substantial way Baldner (1989). Still, I think that the case is very solid in both places.

Baldner, Stephen. 1989. "St. Bonaventure and the Temporal Beginning of the World." *New Scholasticism* 63: 206-28. "Is there sufficient textual evidence to support the conclusion that Bonaventure thought (I) that an eternal past necessarily implies the existence of an actual infinity and (II) that the creation *ex nihilo* of the world can be demonstrated? I intend to argue that there is considerably less textual evidence than has generally been supposed" (207). This article is right on target: this is the first place that I've seen a proper handling of Bonaventure's *responsio*; everyone else assumes that his arguments based on six per se known propositions represent Bonaventure's decided views on the question. Much of Baldner's article is occupied with considering texts for against the view that Bonaventure held the world's production *ex nihilo* to be philosophically knowable. For if it were philosophically knowable, then Bonaventure would have his case (because he thinks that *ex nihilo* creation rules out eternal past duration) against the eternity of the world (on a philosophical, not theological plane).

Barnes, Jonathan (ed.). 1995. *The Complete Works of Aristotle*. 2 volumes. Princeton, New Jersey: Princeton University Press.

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Bettoni, Efreem. 1964. *Saint Bonaventure*. Trans. Angelus Gambatese. Notre Dame, IN: University of Notre Dame Press. The relevant pages are 57-59. Baldner (1989) cites Bettoni as another scholar who recognizes "that, for Bonaventure, the real argument against an eternal world is the argument based upon creation" (n. 16). This is right on: "Once it has been established that the world was created by God 'ex nihilo,' creation 'ab aeterno' becomes inconceivable" (57) and "The eternity of the world becomes comprehensible only if one admits the eternity of matter" (58).

- Bigi, Vincenzo C. 1964/65. "La dottrina della temporalita e del tempo in San Bonaventura." *Antonianum* 39: 437-88; 40: 96-151. "Van Steenburghen commends Bigi for a penetrating analysis of Bonaventure's concept of the temporality of the world and for clearly indicating the fundamental difference between Aquinas and Bonaventure in their approaches to the problem of creation and eternity" (Bonansea). Baldner (1989) footnote 20: "Vincenzo Bigi confirms the view that Bonaventure did not regard arguments of type A or B as demonstrative. Bigi points out that, for Bonaventure, when creation is left out of account, there is nothing to prevent one from thinking of the being of this world as eternal."
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- Brown, Patterson. 1965. "A Medieval Analysis of Infinity." *Journal of the History of Philosophy* 3: 242-243. Richard Davis (1996) says that he endorses the reading of Bonaventure as against the eternity of the world, even philosophically. If you actually consult Brown's one paragraph note, however, there does not appear to be much understanding in it: Brown says that Bonaventure's argument from the number of solar revolutions somehow foreshadows Cantor's definition of the infinite. Rather: Cantor showed to be possible and consistent what in Bonaventure's argument was presented as mathematically preposterous. At any rate, there is nothing here which substantively supports the reading of Bonaventure as strongly against the eternity of the world.
- Burrell, David B. 1979. *Aquinas: God and Action*. Notre Dame, IN: University of Notre Dame Press. He has a brief discussion of Aquinas on creation (135-140), but nothing on the question of time and creation.
- Cartwright, Richard L. 1997. "Aquinas on Infinite Multitudes." *Medieval Philosophy and Theology* 6: 183-201. He examines the apparent inconsistency between Aquinas' statements that an infinite multitude cannot exist in actuality and that it is possible to proceed to infinity in a chain of efficient causes.
- Coccia, Antonius. 1974. "De Aeternitate Mundi apud S. Bonaventuram et Recentiores." *S. Bonaventura: 1274-1974*. Rome: Collegio S. Bonaventure. Pages 279-306. On page 281 Coccia introduces an interesting quotation from Aquinas: "Si enim intelligatur quod praeter Deum potuerit (mundum) semper fuisse, quasi possit esse aliquid aeternum praeter eum, ab eo non factum: error abominabilis non solum in fide, sed etiam apud

philosophos, qui confitentur et probant quod omne quod est quoquo modo, esse non possit nisi causatum ab eo qui maxime et verissime habet esse.” This makes me think that the pressure is really on to explain the workability of the coherent position which Bonaventure seems to concede to Aristotle: the world can be eternal if it wasn’t created. This quotation seems to state that there cannot be a world that is not created. Now I remember! This is another place where B. and A. disagree: A. thinks that creation can be known by reason alone, whereas B. doesn’t (cf. *II Sent.*, d. 1, p.1, a.1, q.1).

Copleston, Frederick. 1950. *A History of Philosophy: Volume 2*. Westminster, Maryland: The Newman Press. Pages 292-295 cover his discussion of Bonaventure on the eternity of the world. He makes out that Bonaventure endorsed all of the six arguments against the eternity of the world found in the ‘ad oppositum’, but no argument is given for this position.

Copleston, Frederick. 1972. *A History of Medieval Philosophy*. New York: Harper & Row. Pages 167-168 show that Copleston’s views had not changed since Copleston (1950). The discussion is, once again, brief.

Craig, William Lane. 1979. *The Kalam Cosmological Argument*. New York: Harper & Row Publishers. Richard Davis says that Craig endorses the reading of Bonaventure as against the eternity of the world, even philosophically.

Craig, William Lane and Smith, Quentin. 1993. *Theism, Atheism, and Big Bang Cosmology*. New York: Oxford University Press.

Cross, Richard. 1999. “Four-Dimensionalism and Identity Across Time: Henry of Ghent vs. Bonaventure.” *Journal of the History of Philosophy* 37: 393-414. “Medieval accounts of identity across time rely on talk of temporal parts. Since substances are intrinsically static, they do not have temporal parts. Their persistence is, thus, problematic. Bonaventure's theory of the *aevum* allows him to show how angels can have temporal parts without any real change” (Abstract). This is not an easy article, in particular, the discussion of Henry of Ghent’s rejection of Bonaventure’s position on the *aevum* is

complex. The most interesting thing here for me is Cross' claim that Bonaventure regards it as an essential property of creatures that they have "E-temporal parts", i.e. (at bottom) that they have temporal parts, and so are four-dimensional objects. Unfortunately, Cross does not discuss Bonaventure's views on the nature of time: is it a creature? Or does it piggyback on other creatures? The *aevum* is a curious posit that allows Bonaventure to talk of "temporal" succession where there are no real changes; the succession is the successive existence of creatures in relation to God. In Cross' words: "although an eviternal lacks any real non-relational change (any variation, aging, or renewal – the real exchange of forms), its relations to its primary cause (God) are successive, different from period to period, and moment to moment" (398). If Bonaventure is a big-time four-dimensionalist, then it would seem he ought to have a philosophical case against the eternity of the world: the world can't exist beginninglessly because at least one thing would have (timelessly) an actual infinity of temporal parts; but an actual infinity of anything cannot exist (timelessly). Two responses I see this direction, however. First, in this example, it is not the case that an infinity of temporal parts exists at time-1, but only that they (timelessly) exist. Should this be any more problematic than an infinite succession for the presentist? Second, Cross notes that Bonaventure makes these points in his discussion of the duration of angels and disembodied souls – could Bonaventure do an Aquinas-like move and say that it is unproblematic for an actual infinity to exist in the case of immaterial stuffs? Which would be the same as saying: Aristotle didn't have such things in mind when he laid down the principle of no actual infinities. Or, related, this response: although Cross notes that Bonaventure doesn't explicitly extend these points about the *aevum* and four-dimensionality beyond immaterial substances, Cross thinks that he might well have – but maybe he ought not to have and these points apply to kinds of things which Aristotle didn't think to exist, i.e. immaterial substances.

Dales, Richard C. 1984. "The Origin of the Doctrine of the Double Truth." *Viator* 15: 169-179.

Dales, Richard C. 1990. *Medieval Discussions of the Eternity of the World*. New York: E. J. Brill. The section on Bonaventure is extremely poor: first, Dales says that Bonaventure “also seems convinced of the efficacy” of the other five arguments ad oppositum (he explicitly endorses the sixth), but when Dales discusses Bonaventure’s Respondeo, he writes: “he then assumes a more limited position and concedes that if the world were not made from nothing but from preexisting matter the absurdity would disappear (and so he implicitly abandons his infinity arguments)” (91, 93). Indeed! Dales cites Hales and Grosseteste as major influences upon Bonaventure.

Davidson, Herbert A. 1969. “John Philoponus as a Source of Medieval Islamic and Jewish Proofs of Creation.” *Journal of the American Oriental Society* 89: 357-391.

Davies, Brian. 1992. *The Thought of Thomas Aquinas*. New York: Oxford University Press. Chapter 2, “Getting to God” (p. 21-39), contains sections on “Creation” (p. 33) and “The Beginning of the World” (p. 35). But Davies handling of the philosophical worries about these questions, especially the latter, is extremely superficial. His treatment is not much more than a repetition of Aquinas’ arguments.

Davis, Richard. 1996. “Bonaventure and the Arguments for the Impossibility of an Infinite Temporal Regression.” *American Catholic Philosophical Quarterly* 70: 361-380. This article questions Baldner’s (1989) claim that Bonaventure doesn’t regard the six arguments based on per se known propositions as sound; instead, the claim is that Bonaventure’s position against the eternity of the world is based on the principle that something created ex nihilo cannot be eternal. Davis contends that the weight of scholarship is against Baldner and that Baldner has adduced a sketchy amount of support for his own claim. While Davis admits that there might be some question about the matter, he claims that Baldner’s case is mainly one from silence. The weakest part of this article is the section in which Davis tries to handle the most convincing part of Baldner’s article, namely, the section in which Bonaventure’s respondeo is discussed. This is page 376 in Davis where he says “Thus, Bonaventure concedes that it is reasonable to hold that

if matter had existed from eternity, then (as Aristotle held) the world would be eternal, since the world could not have begun through nature.” And in a footnote, he makes even more explicit how he’s understanding Bonaventure’s presentation of Aristotle: “If we let P = ‘matter has existed from eternity’ and Q = ‘the world is eternal,’ then it seems to me that what Bonaventure is affirming is the reasonableness of the consequence – that is, P then Q – but not necessarily the reasonableness of the consequent, namely, Q. The latter follows from the reasonableness of P. To my mind at least, the possibility of P is precisely what arguments A, B and C are directed against.” I think that this is an extremely tendentious reading of the passage. If Bonaventure thinks that it can be demonstrated philosophically that the world is not eternal, how can he say that it is reasonable for Aristotle to maintain the world’s eternity? Instead, Bonaventure’s position is that, since Aristotle had no inkling of *creatio ex nihilo*, it’s quite reasonable for him to have maintained that the world is eternal.

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Melanges de science religieuse vol. 3, pages 33-44.

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Dowd, John D. 1974. “Matthew of Aquasparta’s ‘De productione rerum’ and Its Relations to St. Thomas Aquinas and St. Bonaventure.” *Franciscan Studies* 34: 34-73.

Eining, Peter. 1898. *De Deo creatore et consummatore*. Trier. Page 11 has this paragraph of note: “Circa quaestionem possibilitatis aliqua est controversia. Plures cum S. Thoma (1. Q. 46. A. 2) censent, ex ratione sola non posse evidenter probari repugnantiam creationis aeternae. Verum sententia opposita et theologice et philosophice nobis magis probatur. Et sane: mundum non potuisse esse aeternum, in quaestionibus dogmaticis versantes ex Patribus docent Irenaeus, Methodius, Athanasius, Basilius, Zacharius Mityl., Cyrillus Alex., Maximus Martyr, Damascenus, Augustinus, Fulgentius; ex theologis idem sentiunt Anselmus, Richardus Vict., Bonaventura, Henricus Gandav., Toletus, Gregorius de

Valentia, qui repugnantiam illam ex parte effectus volunt concludi spectati tum in quantum ad ea quae cum essentia entis contingentis connexa sunt tum quae secum fertur duratio sine initio.” And then Einig adds a quotation, the first lines of Bonaventure’s *Respondeo*, which only say, however, that a created eternal world is possible.

Fakhry, Majid. 1953. “The ‘Antinomy’ of the Eternity of the World in Averroes, Maimonides and Aquinas” in Dienstag, Jacob I., ed., *Studies in Maimonides and St. Thomas Aquinas*, Ktav Publishing House, Inc., 1975. Pages 107-123.

Fox, Rory. 2006. *Time and Eternity in mid-thirteenth-century Thought*. New York: Oxford University Press. This monograph focuses on questions of God’s relation to time.

Gierens, M. 1933. *Controversia de Aeternitate Mundi: Textus Antiquorum et Scholasticorum*. Rome: Universitas Gregoriana. In a fairly brief introduction, Gierens gives some indication of his take on Bonaventure’s position: “S. Bonaventura docet in suppositione facti creationis aeternitatem mundi cum omni certitudine excludi posse” (8). For the rest, this book is a collection of texts, without commentary from various ancient and medieval philosophers on the question of the world’s eternity.

Gilson, Etienne. 1956. *The Christian Philosophy of St. Thomas Aquinas*. New York: Random House. This book contains a chapter on “Creation” (p. 147-159), which also addresses the controversy over the eternity of the world.

Gilson, Etienne. 1965. (Originally published in French, 1924.) *The Philosophy of St. Bonaventure*. Translators: Dom Iltyd Trethowan & Frank J. Sheed. Paterson, New Jersey: St. Anthony Guild Press. Pages 167-184. “Gilson’s treatment of the theory of creation, Van Steenberghen [1974] continues, is confined to an objective presentation of Bonaventure’s thought with no attempt to critically evaluate it” (Bonansea).

Granger, Herbert. 1989. “Aristotle’s Natural Kinds.” *Philosophy* 64: 245-7.

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- Johnson, Mark F. 1989. "Did St. Thomas Attribute a Doctrine of Creation to Aristotle?" *The New Scholasticism* 63: 129-55.
- Jolivet, Jean. 1973. "Commentaire philosophique de Genese 1,1 chez Bonaventure et Thomas d'Aquin." From *In Principio: Interpretations des Premiers versets de la Genese*. Ed. Centre d'Etudes des Religions de Livre. Paris: Etudes Augustiniennes. Baldner (1989) cites pages 219-220 in support of the view that "several arguments above" (in Bonaventure's text) refers to the preceding quaestio. When I looked at the passage, nothing jumped out as especially to the point.
- Jungmann, Bernard. 1875. *Tractatus de Deo Creatore*. New York: Frederick Pustet. He addresses the question of whether the world could have been created from eternity on pages 11-12. He states that he favors the view that it is contrary to reason for something to be both created ex nihilo and eternal, he concedes that the question should be left to the

philosophers. “Nobis quidem opposita [ad Thomam] sententia praeferenda videtur, sed quaestionem philosophicam potius quam theologiam in medio relinquimus propter summi illius Doctoris reverentiam, necnon propterea, quod argumenta, quibus probari solet repugnantia rei ab aeterno creatae, revera non omnimoda evidentia eam evincunt” (12).

Kenny, Anthony. 2005. *Medieval Philosophy*. New York: Oxford University Press. Kenny covers Bonaventure on pages 60-63 and takes up the standard line (and without support): “It was impossible, [Bonaventure] thought, to accept both that the world was created and that it had existed from all eternity: accordingly, he proposed a series of arguments, similar to those used by Philoponus and the Kalam theologians, to prove that the world had a beginning in time” (62). This ignores the very important difference for Bonaventure between a beginningless created and a beginningless uncreated world. In his discussion of “Physics” (176-188), Kenny has a helpful summary of issues around time from Augustine to the early 1300s. It’s clear that he generally sides with Aquinas’ view (183-84), but there’s nothing substantive there.

Kovach, Francis. 1974. “The Question of the Eternity of the World in St. Bonaventure and St. Thomas (A Critical Analysis).” *Southwestern Journal of Philosophy* 5:141-72. Reprinted in Kovach, Francis J. and Shahan, Robert W. 1976. *Bonaventure & Aquinas: Enduring Philosophers*. Norman, OK: University of Oklahoma Press. Pages 155-186. This much cited article does a good job, I think, of laying out in a clear manner precisely what the disagreement between Bonaventure and Aquinas amounts to. Interestingly, Kovach endorses Baldner’s (1989) line: on the points of agreement between Aquinas and Bonaventure, “despite the possibility of temporal creation, the eternity of the world is also possible and conceivable from the *cosmological* point of view” (169).

Kretzmann, Norman. 1985. “Ockham and the Creation of the Beginningless World.” *Franciscan Studies* 45: 1-31. This is a very helpful article because of the quotations from Ockham, who does a masterful job, I think, of putting precise language upon the position

of those who defend the possibility of an infinite past. A key quotation: “. . . it is true in general that an infinite that *at some time* is *to be* gone through never can be actually gone through; nor can there ever be a last [element] of such an infinite. . . . But an infinite that *at no time* was *to be* gone through but *always had been* gone through *can* be gone through despite its infinity. This is the reason why in virtue of the very fact that something *has been* gone through which at some time was *to be* gone through, it is finite. But if anything *has been* gone through which *never* was *to be* gone through, it need not be finite but can be infinite. Now, however, if the world existed from eternity, it *never* was the case that *all* past years were *to be* gone through, because at no temporal instant would this proposition have been true: ‘All these years (indicating all those [now] past) are to be gone through.’” *Quaestiones Variarum*, q. 3.

Kretzmann, Norman. 1998. *The Metaphysics of Creation*. New York: Oxford University Press.

Kretzmann’s Chapter Five: “Could the Created World Have Existed Forever?” He appears to have Bonaventure all wrong, e.g. “Anyone who, like Bonaventure, takes that line of argument [i.e., the Traversal Argument] to provide a proof that the world must have begun to exist, would be unlikely to back down in the face of Aquinas’ brief rejoinder,” etc.

Lahousse, Gustave. 1904. *Tractatus de Deo creante et elevante*. Bruges: Charles Beyaert. This

work has nothing more to say about the philosophical question beyond: “Philosophi christiani in varias abeunt sententias, ubi inquirunt de possibilitate creationis ab aeterno” (46). It does have a great deal to say, however, from the theological side of things, and makes heavy use of the Hebrew in Genesis. Patristic support for the doctrine that “Mundus in tempore initium sumpsit” is given in a list on pages 47-50.

MacIntosh, J.J. 1994. "St. Thomas and the Traversal of the Infinite." *The American Catholic Philosophical Quarterly* 68: 157-77.

Mandonnet, Pierre. 1926. Thomas Aquinas: *Quaestiones Quodlibetales*. Paris: P. Lethielleux.

Maimonides, Moses. 1963. *The Guide of the Perplexed*. 2 volumes. Trans. Shlomo Pines. Chicago: The University of Chicago Press.

Marenbon, John. 1987. *Later Medieval Philosophy: An Introduction*. London: Routledge & Kegan Paul. See pages 27-34 for an “excellent discussion of the form and later development of the scholastic quaestio” (R. Davis).

Marenbon, John. 2003. “Eternity.” In *The Cambridge Companion to Medieval Philosophy*. Cambridge: Cambridge University Press. Pages 51-60.

Marenbon, John. 2007. *Medieval Philosophy: An Historical and Philosophical Introduction*. New York: Routledge. Marenbon has a superficial but helpful (*qua* summary) discussion entitled “Study B: Eternity and the universe: Augustine, Boethius and Philoponus” on pages 53-56. He appears to take a rather dim view of Philoponus’ moves against Aristotle, chalking them up to a “sleight of hand by which Philoponus introduces countability into the notion of what is potentially infinite” (56). He also has a discussion entitled “Study J: The eternity of the world: Bonaventure, Aquinas, and Boethius of Dacia” on pages 258-262. M. supports Baldner’s (1989) reading of Bonaventure: “From the detailed discussion in his Sentences commentary (1250) and from other works, it does not appear that he approached the problem as if reason, in the form of Philoponus’ arguments – strong though he found them – simply ruled out the possibility of an eternal world. . . . Rather, Bonaventure thought that there was a contradiction between the world’s being created from nothing and its being eternal” (259). This is a “study” worth referencing. Interestingly, though, in his annotated bibliography, he does not cite any sources in defense or support of the rather controversial position that he’s taking on Bonaventure.

Matthew of Aquasparta. 1956. *Quaestiones Disputatae de Productione Rerum et de Providentia*. Ed. P. Gideon Gal. Florence: College of St. Bonaventure. (Matthew’s dates: ~1235-1302). He takes up the relevant issue in Question 9 (201). Any number of sources say that Matthew was a “student” of Bonaventure, that he was “influenced” by

Bonaventure – but how close was this connection? At any rate, it is interesting to note that the arguments in Matthew’s Question 9 in support of the preferred position are 7, the first 4 of which are arguments from the nature of *creatio ex nihilo* against an eternal created world. The final one (G) is either a misunderstanding of the situation with time and causation, or (as I rather think) there is an interesting connection between it and Ratzinger (1959). Ratzinger claims that Aristotle and Aquinas regard the flow of history (time) as an accidentally ordered series; Bonaventure, on the other hand, regards it more in the light of an essentially ordered series. Matthew’s Argument G depends on this Bonaventurian understanding. Matthew’s arguments E and F are a very neat summary of what Baldner (1989, 1997) and Davis (1996) agree in calling argument types A and B in Bonaventure’s quaestio, that is, Type A (you can’t traverse the infinite) and Type B (an actual infinity of things can’t exist simultaneously). It gets even more interesting in the Respondeo – this is really good stuff. He says that arguments E, F, and G – that is, the arguments that everyone makes the fuss over and which many claim are endorsed by Bonaventure as sound – are only a posteriori arguments that hold “sub ista universitate et forma in qua mundus est” (210). He then goes through these three arguments and argues that they work – as things stand in the actual world. But since the world need not have been like this, he thinks that these three arguments “ad probandum creaturam nullo modo posse esse aeternam nihil valent” (212). Still, he thinks that “non tantum mundus, immo nec aliqua creatura potuit esse aeterna” and this for four reasons: (1) ex parte durationis, (2) ex parte productionis, (3) ex parte rei producibilis, (4) ex parte principii producentis (213). In the reasoning behind (1), there are four parts; the first is that an actual infinity “omnino repugnat creaturae”; the second is that time is not the kind of thing that could be actually infinite because the infinite is altogether simple, indivisible, and simultaneous; the third is that an actually infinite thing cannot be traversed; and the fourth is fascinating – he sees that there can be an infinite proper subset of an infinite set. The reasoning behind (2) is that *creatio ex nihilo* requires a finite past.

- May, Gerhard. 1994. *Creatio ex Nihilo: The Doctrine of 'Creation of out Nothing' in Early Christian Thought*. Trans. A. S. Worrall. Edinburgh: T&T Clark, Ltd. A translation of the German original, *Schopfung aus dem Nichts*, which was published in 1978. Useful for a discussion ancestors of the high middle ages' discussion.
- Mondreganes, Pius M. 1935. "De impossibilitate aeternae mundi creationis ad mentem S. Bonaventurae." *Collectanea Franciscana* 5:529-570. "[I]s a very good presentation of Bonaventure's thought on the eternity of the world and its philosophical background" (Bonansea). Bonansea is right: the background is what is chiefly of value here. Despite the length of this article – 41 pages – there is not a word here about the significance of the Respondeo section of Bonaventure's quaestio. While Mondreganes takes the six arguments in the 'ad oppositum' to be definitely Bonaventure's own case, he seems to maintain the line that what Bonaventure is attacking is an eternal creation, not necessarily an eternal world (uncreated) world. There is a wealth of old bibliographical information here.
- Murdoch, John E. 1982. "Infinity and Continuity." In *The Cambridge History of Later Medieval Philosophy*, eds. Norman Kretzmann, Anthony Kenny, and Jan Pinborg. New York: Cambridge University Press. This looks to be a very comprehensive discussion of work in natural philosophy in connection with infinity in later medieval philosophy, especially the early 14th century. It does not, however, deal with issues of creation or Bonaventure/Aquinas in any direct fashion.
- Noone, Timothy B. 1996. "The Originality of St. Thomas's Position on the Philosophers and Creation." *The Thomist* 60: 275-300.
- Noone, Timothy and R. E. Houser. 2005. "Saint Bonaventure." *The Stanford Encyclopedia of Philosophy (Fall 2008 Edition)*, Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/fall2008/entries/bonaventure/>.
- Ockham, William. 1984. *Opera Philosophica et Theologica: VIII*. Eds. Girard Etzkorn, Francis Kelley, and Joseph Wey. Binghamton, NY: Medieval & Renaissance Texts & Studies.

Potter, Vincent G. 1993. *John Peckham: Questions Concerning the Eternity of the World*. New York: Fordham University Press.

Palmieri, Dominic. 1875. *Institutiones Philosophicae: Volume II*. Rome: Della Pace.

Palmieri's discussion of creation begins on page 187; the question of time, creation, and eternity is taken up on p. 220. His discussion proceeds in two parts: first, he argues that there is no reason why matter must always have existed (220-23); second, he contends that, on the contrary, the existence of matter or of any contingent being *ab aeterno* is intrinsically a bad notion (224-232). He makes clear that he is disagreeing with Thomas on this question, but cites in support of his own view Bonaventure, Richard of St. Victor (*De trinitate* Book II, ch. 9), and Henry of Ghent (Quodlibetal 1, q. 7) – besides “many and most noble” Fathers of the Church. His conclusion is that it is not so much the notion of creation – as it is in Bonaventure's view – that rules out infinite past time, but the nature of created contingent being. Thus, he cites approvingly many of the arguments which appear in Bonaventure's “ad oppositum” (though Palmieri doesn't describe them as such). He concludes: “Ex quibus patet quod diximus, demonstrari impossibilitatem creationis ab aeterno non ex conceptu per se sumpto creationis, sed ex iis quae cum natura entis contingentis creati necessario connexa sunt; ex quibus consequitur necesse esse ut Deus duratione quoque praecedat suum effectum, et *non-esse-rei* praecedat *esse-eiusdem*” (232).

Pinard, H. “Creation.” in *Dictionnaire de theologie catholique*, III, 2, cols. 2178-2179.

According to Bonansea (1974), Pinard takes up some difficulties involved with Aquinas' attempt to distinguish an actual infinity of souls (unproblematic) from an actual infinity of bodies (problematic).

Prezioso, P. Faustinus. 1942. *De Aristotelis creationismo secundum S. Bonaventuram et secundum S. Thomam*. Rome: Officium Libri Catholici. Prezioso does address the material in Bonaventure's Respondeo – which is a very good thing – and he summarizes it thus: “Si igitur materia Deo coaeterna foret, nihil prohiberet quominus mundus aeternus

eset. Quamvis ergo Aristoteles erraverit, tamen logicus fuit” (67-68). A little later, he slips in a way similar to Gilson (1965): “Praeterea si mundum aeternum posuit, etiam numerum actu infinitum, tum quoad hominum animos, tum quoad tempora ab initio usque nunc dilapsa, admittere necesse fuit” (68). But Bonaventure himself doesn’t mention this latter worry and doesn’t attribute to Aristotle ways out of it. And how could Bonaventure have thought it a genuine worry, unless he thought that Aristotle had been flat out inconsistent?

Quinn, John F. 1977. “St. Bonaventure and Arabian Interpretations of Two Aristotelian Problems.” *Franciscan Studies* 37: 219-228. R. Davis says that he endorses the reading of Bonaventure as against the eternity of the world, even philosophically.

Ratzinger, Joseph. 1959. *Die Geschichtstheologie des heiligen Bonaventura*. Munich: Schnell and Steiner. English translation: (1971) *The Theology of History in St. Bonaventure*, trans. Zachary Hayes, Chicago: Franciscan Herald Press. Pages 140-147. “[T]he presentation of Ratzinger [is confined to an objection presentation of Bonaventure’s thought], who discusses the problem of the origin of the world within the framework of Bonaventure’s theology of history” (Bonansea citing Van Steenburghen [1974]). This is not a fair assessment. Ratzinger does more than that, though what he says is not quite applicable to my direction of investigation. The most interesting thing he does is to provide another reason for thinking that Aristotle’s notion of infinite past time is radically incompatible with Bonaventure’s understanding of past time conceived as Christian history; Bonaventure’s view is also incompatible with Thomas’ view of history. For Thomas and Aristotle, says Ratzinger, past time can be infinite because it consists of an accidentally ordered series of events. Whereas “Bonaventure sees that this concept of history is incompatible with the Christian view. He demands an ordering of causality also on the horizontal level of world events and their temporal sequence. He must make this demand because he sees an entirely different form of world-history. For him, the history of the world is ordered in an egressus and a regressus; in the center of these stands

Christ. Any form of infinity in this closed and ordered movement is unthinkable from the very start. In this context, we can understand Bonaventure's own concept of time. For Aristotle and Thomas, time was the neutral measure of duration, 'an accident of movement.' For Bonaventure, it is not merely a neutral measure of change. Together with the caelum empyreum, the angelica natura, and the materia, time is included among the four realities which were the first to be created" (141).

Robinson, Paschal. 1907. "St. Bonaventure." In *The Catholic Encyclopedia*. New York: Robert Appleton Company.

Sertillanges, A.G. 1945. *L'idée de création et ses retentissements en philosophie*. Paris: Aubier, Editions Montaigne. Of interest is Chapter 2, "Creation 'ab aeterno'", pages 25-42. He writes: "L'argument essentiel, pour saint Bonaventure, part de ceci que Dieu a crée toutes choses ex nihilo, ce qui est admis de tous les chrétiens. Or, ajoute le penseur, dire que Dieu crée ex nihilo, c'est affirmer que le néant précède et que le monde suit. Donc la supposition d'un monde créé ex nihilo et cependant éternel, c'est-à-dire non précède du néant, est contradictoire" (26). Bonansea recommends especially pages 32-33 for the view that "Bonaventure would have fallen victim to a basic misunderstanding by assuming that the past is something *real*, whereas the truth of the matter is that it is only in our minds" (Bonansea 13, 1974).

Sorabji, Richard. 1983. *Time, Creation, and the Continuum*. Ithaca, New York: Cornell University Press. He does not have anything substantive to say about Bonaventure beyond the claim that Bonaventure's six arguments against the eternity of the world surely come from Philoponus, of which fact, he says, many are ignorant.

Stein, Edith. 2002. *Finite and Eternal Being*. Trans. Kurt F. Reinhardt. Washington, D.C.: Institute of Carmelite Studies Publications. Originally published: 1946, Verlag Herder, Freiburg im Breisgau: *Endliches und Ewiges Sein: Versuch eines Aufstiegs zum Sinn des Seins*. "We may accordingly call finite what does not possess its being but needs time in order to attain to being. Even if it were endlessly sustained in being, it would not on that

account be infinite in the true sense. What is truly infinite is essentially and intrinsically incapable of ending. The genuinely infinite does not receive being as a gift but is in possession of being; it is the master of being, yea, it is being itself. We call it eternal being. It does not stand in need of time; it is the master of time, too. Temporal being is finite. Eternal being is infinite. Finitude, however, means more than merely temporality, and eternity means more than merely the impossibility of coming to an end in time.

Whatever is finite needs time to become what it is” (61).

Tavard, Georges H. 1951. “On a misreading of St. Bonaventure’s Doctrine of Creation.”

Downside Review 69: 276-288. This is an important article and it nicely confirms the case made by Baldner (1989). What is shocking is that Baldner (1989) does not cite it! The article concludes with a few thoughts – though not much of an argument – reminiscent of Ratzinger (1959): “After all has been said – and rightly so – on the non-contradiction of eternal creation, it may be that the beginning of this world foretells the supernatural destiny of mankind: the world had to begin, if it was to bear the adopted sons of God” (288). But what’s most interesting about this article is Tavard rejects as a misreading of Bonaventure the view that has Bonaventure endorsing the six “ad oppositum” arguments. On page 282, though, I think that Tavard’s position can be improved by Balder’s (1989) reading of “manifeste erravit, sicut pluribus rationibus ostensum est supra”: Balder says that the “supra” refers (mainly) to the previous question, in which Bonaventure had established *creatio ex nihilo*.

Van Noort, Gerardus. 1920. *Tractatus de Deo creatore*. Bussum, Holland: P. Brand. Pages of 8-9 are all that is of relevance here. It is perhaps worth nothing that he doesn’t cite Bonaventure against the eternity of the world, *simpliciter*, but only against a created world; he quotes from Bonaventure’s “respondeo.” Here is what van Noort says: “De quaestione, num ratione probari possit mundum habuisse initium, a.v. *num repugnet mundus vel saltem aliqua creatura ab aeterno creata, non conveniunt auctores*. [There seems to be a little ambiguity here: are we asking this question about a created world or

any world?] Non agitur utique de creatura stricto sensu aeterna, sed quaestio est: num dari posset aliqua creatura, cuius duratio a parte ante non habuisset initium, quamvis a parte post continuo augetur. Iam s. Thomas, quem multi ex eius schola sequuntur, dicit: “Mundum non semper fuisse sola fide tenetur, et demonstrative probari non potest.” S. Bonaventura cum aliis plurimis docet: “Ponere mundum aeternaliter productum, omnino est contra rationem, hoc enim implicat in se manifestam contradictionem.” Consulantur philosophi. Monemus tamen argumenta pro existentia Dei ita esse construenda, ut non temporalitate, sed contingentia mundi nitantur. Quid enim reponeres adversario respondenti: ipse catholicae philosophicae coryphaeus, s. Thomas, materiam ab aeterno existentem impossibilem dicere non est ausus.”

Van Steenburghen, Fernand. 1966. *Hidden God*. Trans. Theodore Crowley. St. Louis: Herder. “St. Bonaventure confused creation ex nihilo with creation post nihilum” (172).

Van Steenburghen, Fernand. 1974. “Saint Bonaventure contre l’eternite du monde.” *S. Bonaventura: 1274-1974*. Rome: Collegio S. Bonaventure. Pages 259-278.

Van Steenburghen, Fernand. 1980. *Thomas Aquinas and Radical Aristotelianism*. Washington, D.C.: The Catholic University of America Press. This book contains three revised lectures given in March 1978 at CUA, the first of which is entitled “Eternity of the World” (p. 1-27). Fernand rejects the possibility of the eternity of the world in the past. An interesting passage: “How is one to account for the strange variations which we found in St. Thomas concerning the infinite? As for myself, I find no other explanation than his extraordinary respect for Aristotle, whose authority regarding the eternity of the world was confirmed by the unanimous agreement of the great Greek and Arabic philosophers. As I have indicated, it is in Aristotle’s *Physics* that Thomas found the idea that the infinite in succession is an infinite in potency. The Stagirite, who was forced into affirming the eternity of the world because he did not know the doctrine of creation, but who also rejected without reservation the infinite in act, found this means of escape in his attempt to reconcile the two theses: eternity of the world, and the impossibility of an

infinite in act. St. Thomas took up this notion that an infinite in succession is not an infinite in act” (22-23).

Van Veldhuisen, P. 1990. "The Question on the Possibility of an Eternally Created World: Bonaventura and Thomas Aquinas," in Wissink (1990), p. 20-38. He dodges the question of the status of the other arguments that Bonaventure gives ad oppositum. He rightly, as I think, notices that argument 6 ad oppositum, because it is explicitly endorsed in the Respondeo, is the heart (at least, if not the whole) of Bonaventure's case against an eternally created world (27).

Walz, Matthew D. 1998. "Theological and Philosophical Dependencies in St. Bonaventure's Argument against an Eternal World and a Brief Thomistic Reply." *American Catholic Philosophical Quarterly* 72/1 (Winter): 75-98. Walz writes: "According to the Seraphic Doctor, then, for something to receive its existence from another *in toto* entails a beginning in time for that something, in this case the world. St. Bonaventure simply accepts this statement as an indisputable philosophical *propositio per se nota*" (87). This is not the end of the story, though, because d. 43, about the nature of infinity, can shed more light on this point. If an eternal world would be actually infinite in some sense, then we clearly know why a *created* world could not be infinite: for that which is actually infinite is pure act, and that which is pure act does not receive its being from another. On the whole, this is a weak article and is heavily indebted to such predecessors as Baldner (1989 & 1997) and Bonasea (1974). Walz adheres to Baldner's (1989) line on the arguments ad oppositum.

Weinandy, Thomas Gerard, Daniel Keating, John Yocum, eds. 2004. *Aquinas on Doctrine: A Critical Introduction*. New York: T&T Clark, Ltd.

Weisheipl, James A. 1982. "The Interpretation of Aristotle's Physics and the Science of Motion." In *The Cambridge History of Later Medieval Philosophy*, eds. Norman Kretzmann, Anthony Kenny, and Jan Pinborg. New York: Cambridge University Press.

- Whitrow, G. J. 1978. "On the Impossibility of an Infinite Past." *British Journal of the Philosophy of Science* 29: 39-45.
- Wildberg, Christian. 1991. *Place, Void, and Eternity*. Ithaca, NY: Cornell University Press. This work contains two translations, "Philoponus: Corollaries on Place and Void", translated by David Furley, and "Simplicius: Against Philoponus on the Eternity of the World", translated by Wildberg.
- Wilks, Ian. 1994. "Aquinas on the Past Possibility of the World's Having Existed Forever." *The Review of Metaphysics* 48: 299-329.
- Wissink, J.B.M., ed. 1990. *The Eternity of the World: In the Thought of Thomas Aquinas and His Contemporaries*, Studien und Texte zur Geistesgeschichte des Mittelalters, Band 27. Leiden: E. J. Brill.
- Wolfson, Harry A. 1976. *The Philosophy of the Kalam*. Cambridge: Harvard University Press. Pages 455-65. Richard Davis says that Wolfson endorses his reading of Bonaventure for the philosophical impossibility of an eternal world.
- Zigliara, Tommaso Maria. 1891. *Summa Philosophica in usum Scholarum*. Volume II: Cosmology, Psychology, and Natural Theology. Lyons & Paris: Delhomme et Briguet. Cf. p. 46-53. Zigliara's view: "Existimo autem mundum uti nunc est, non potuisse ab aeterno creari, quidquid in contrarium suadere conetur P. Guerinois, in suo Clypeo philosophiae thomisticae Tom. III, P. II, Phys. Qu. I, Artic. II. Etenim si creatio ista foret possibilis, consequi videtur quod in successione ab aeterno usque ad praesens forent, in facta hypothesisi, actu infinitae successiones vel in tempore, vel in motu, vel in generatione, vel saltem in cogitationibus alicuius mentis creatae: quam infinitatem in actu in Ontologia demonstravimus repugnare" (47).