Faith, reason, and the eternity of the world in Gregory of Rimini

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Faith, Reason, and the Eternity of the World in Gregory of Rimini

A Thesis Submitted in Partial Fulfillment of the Requirements for the S.T.L. Degree from the Boston College School of Theology and Ministry

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Introduction

The question of whether one can rationally demonstrate the world's temporal beginning was a source of considerable controversy among medieval thinkers. Access to more of Aristotle's works around 1200 largely occasioned the controversy,¹ since one typically interpreted Aristotle as arguing for an eternal world, although the exact mind of the Stagirite was itself not always clear to medieval thinkers.² Although there were numerous issues at stake in the debate, one especially interesting aspect of the discussion concerned the question of whether genuine philosophical reasoning could arrive at a conclusion inimical to divinely revealed truth. Since nearly all medieval European philosophers and theologians were Christians, they held the doctrine that the world exists after not existing as a divinely revealed truth, enunciated by Sacred Scripture and defined by the Fourth Council of the Lateran in 1215. Nevertheless, some argued that a philosopher, *qua* philosopher, could hold that the world is eternal, and yet *qua* Christian adhere to the faith. These thinkers believed that Parisian masters working in the Faculty of

¹ J. Wippel notes that until shortly after the death of Abelard, medieval scholars had access only to a portion of Aristotle's works in Latin translation. These works, which included the *De interpretatione* and the *Categories*, were collectively known as the *Logica vetus* (see John Wippel, *Medieval Reactions to the Encounter between Faith and Reason* [Milwaukee: Marquette U. Press, 1994], 8-10).

² At *In II Sent.*, d.1, p.1, a.1, q.2, Bonaventure rehearses four putatively demonstrative arguments of ² At *In II Sent.*, d.1, p.1, a.1, q.2, Bonaventure rehearses four putatively demonstrative arguments of Aristotle for an eternal world, drawn almost entirely from the *Physics*. Yet in the same question, he notes that many *moderni* interpret Aristotle to mean only that the world did not begin from natural causes (Bonaventure, *In secundum librum Sententiarum* [Quaracchi: Ex typographia Coll. S. Bonaventurae, 1885], 22-23. <u>http://archive.org/stream/doctorisseraphic02bona#page/n9/mode/2up</u>). L. Bianchi attributes Bonaventure's uncertainty regarding Aristotle's position to the immature state of Aristotle scholarship when Bonaventure was working on his *Sentences* commentary. The next fifteen years saw great strides in exegesis of Aristotle's texts. Thereafter, his doctrine of the eternity of the world could no longer be seen as a minor lapse in Aristotle's judgment, but rather as a constitutive element of his system (Luca Bianchi, *L'errore di Aristotele: La polemica contro l'eternita'del mondo nel XIII secolo* [Firenze: La Nuova Italia: 1984], 29). Although fourteenth century thinkers, e.g. Peter Auriol and William of Alnwick, often devoted an article of their respective questions on the eternity of the world to determining the opinion of Aristotle, by 1300 no one was in serious doubt about Aristotle's view of the matter.

Theology. One such Arts master, Boethius of Dacia, presents the autonomy of philosophy *vis-à-vis* theology as follows:

Whatever the natural philosopher denies or concedes *as* a natural philosopher, this he denies or concedes from natural causes and principles. Wherefore the conclusion wherein the natural philosopher asserts that the world and the first motion did [not] begin to be is false when it is taken without qualification; but if it is referred back to the arguments and principles from which the natural philosopher derives it, if follows from these.³

For Boethius, any science is limited by its principles. The theologian, the philosopher, the natural scientist, and the mathematician arrive at conclusions only on the basis of the principles of their respective sciences. Boethius distinguishes between asserting something to be the case *simpliciter*, and asserting it according to the perspective of one's discipline. While as a Christian Boethius professed that the world began in time, *qua* philosopher reasoning from strictly natural principles he concluded that the world was eternal. Boethius takes the philosopher to be justified in holding to a position he knows is false in an absolute sense.⁴

Opposed to the Aristotelians in the Parisian Arts Faculty was a conservative contingent in the Theology Faculty, represented by figures like Henry of Ghent (d.1293). Henry was a major force leading to Bishop Etienne Tempier's condemnation in 1277 of certain propositions (including some that affirmed the possibility of a world from

³ Boethius of Dacia, *On the Eternity of the World*, trans. John F. Wippel (Toronto: Pontifical Institute of Medieval Studies, 1987), 52.

⁴ The position of Thomas Aquinas relative to a possible eternal creation is akin to that of Boethius of Dacia. For Aquinas, it is impossible philosophically to demonstrate either that the world existed from eternity, or that it began in time. Reasoning from natural principles only, one can conclude only that either is possible. The theologian's task is only to show that no argument for the eternity of the world is demonstrative. Aquinas' disussion of the issue has the advantage over Boethius' that it does not does require the natural philosopher, even *qua* natural philosopher, to deny the world's temporal beginning. As Wippel notes, when Boethius says that a natural philosopher, *qua* natural philosopher, must deny conclusions that destroy his science, e.g. "God created the world in time", he prescribes a methodology that affords philosophy greater autonomy, but at the expense of undercutting the certainty of philosophical conclusions (John F. Wippel, *Medieval Reactions to Encounters between Faith and Reason*, 69-70). For Aquinas' treatment of the question, see Thomas de Aquino, *De aeternitate mundi* in *Opera Omnia* 43 (Rome: Editori San Tommaso, 1976), 85-89.

eternity) associated with thinkers like Boethius of Dacia and Thomas Aquinas. Henry addresses the question of a possible world from eternity in q. 7-8 of his *Quodlibet* I, a text based almost certainly on a disputation at Paris in December of 1276.⁵ Although Henry makes several arguments claiming to prove that a world from eternity is impossible, in this project I focus on the decades-long impact of one, namely his argument that if the world exists from eternity, God caused it necessarily.⁶ Briefly, Henry argues as follows: when something is, it exists necessarily, i.e. something cannot both be and not be at the same time and in the same respect. Further, after a thing has come to be, it cannot be made not to have been, since not even God can change the past. Thus a thing's existence can only be impeded in a moment that precedes its existence. However, if the world has existed from eternity, there never was such a preceding moment, and so neither was there a moment in which God could have freely chosen to create the world.⁷

The Augustinian hermit Gregory of Rimini (d. 1358) saw that no argument on behalf of the possibility of a world from eternity could be convincing without defeating Henry's "necessary creation argument." Moreover, Gregory made original and important contributions to medieval debates concerning the composition of continua and whether God can change the past. In what follows I will argue that Gregory's views on the

⁶ Henry notes that it was the teaching of the philosophers, e.g. Avicenna, that God created the world necessarily. Commenting on a passage from Avicenna's *Metaphysics* (VI, 2) Henry says, "Quod aliquid (inquit) sit *causa existendi causatum*, cum prius non fuit, hoc contingit quia *non est causa eius* per *suam essentiam*, sed *per aliquam* determinatam *comparationem* quam habet ad illud, *cuius comparationis causa est motus*. *Cum* igitur (ut dicit) *aliqua ex rebus per suam essentiam fuerit causa esse alterius rei, profecto semper erit causa quamdiu habuerit esse, eo quod absolute prohibet rem non esse. Et haec est intentio quae apud sapientes vocatur creatio.* Et sic posuerunt philosophi illi quod Deum esse causam creaturae non sit voluntatis dispositione sed necessitate naturae" (Henricus de Gandavo, *Quodlibet I*, q. 7-8, 29). ⁷ Henricus de Gandavo, *Quodlibet I*, q.7-8, 40-41. Although before Henry no medieval author dealt with this argument, proponents of the possibility of an eternal world had their ways of arguing that an eternal creation is compatible with divine freedom. For example, Thomas Aquinas argues that, since God does not deliberate, there is no reason why creation necessarily *temporally* follows God's will to create (Thomas de Aquino, *De aeternitate mundi*, 87).

⁵ Henricus de Gandavo, *Quodlibet I*, ed. R. Macken (Leiden: E.J. Brill, 1979), xvii-xviii.

composition of continua and God's omnipotence allowed him to answer Henry of Ghent's necessary creation argument against the eternity of the world. In this way Gregory supported the growing autonomy of philosophical thinking vis-à-vis theological principles in the fourteenth century.

The thesis has three chapters. In chapter one, I will establish the importance of Henry's necessary creation argument by examining its significance for two of Gregory's fourteenth-century predecessors, the Franciscans Peter Auriol and William of Ockham. In virtue of Henry's argument, Auriol concludes that a world from eternity is impossible. On the other hand, although Ockham agrees with Henry that if the world has always been, God created it necessarily, he nevertheless perseveres in the opinion that the world could have been from eternity. In chapter two, I will explain how Gregory's innovative account of the composition of continua helps him answer Auriol's denial of the possibility of a world from eternity. Finally, in chapter three, I will discuss Gregory's view that God's omnipotence extends as far as being able to undo the past, and the relevance of that view for the question of a possible world from eternity. As I hope to show, Gregory's view that God can undo the past permits him to fill a gap left by Ockham: unlike Ockham, Gregory offered a philosophical account for the possibility of a world from eternity that safeguarded God's freedom in creating.

Chapter One – The Context of Gregory's Question on the Eternity of the World: Peter Auriol and William of Ockham

Grasping the significance of Gregory of Rimini's contribution to the eternity of the world debate requires that we examine the context of what he said. In the first chapter of this work, I will discuss the contributions of two Franciscans who wrote in the first half of the fourteenth century, and with whose works Gregory was familiar: Peter Auriol (d. 1322), and William of Ockham (d. 1347). These two authors reveal a bit of what was being said in Paris and Oxford in the first half of the fourteenth century about the possibility of a world from eternity. Significantly for our study of Gregory, both highlight the momentous influence Henry of Ghent exerted on the eternity of the world debate in that period, especially through his argument that if the world exists from eternity, it exists of necessity. Moreover, both Auriol's and Ockham's treatments of the eternity of the world show they appreciated the force of their opponents' arguments. For example, though Auriol finally concludes that a world from eternity is impossible, he shows that some traditional arguments for that conclusion are incorrect.⁸ Similarly, though Ockham sees no logical contradiction in the view that an eternal world is possible, he agrees with Henry of Ghent that if the world has always been, its existence is absolutely necessary. In this way he risks running afoul of the doctrine of God's freedom in creating, a risk with

⁸ For instance, a typical argument for the necessity of the world's temporal beginning concerned the fact that God and the world are not consubstantial. Henry of Ghent took that view. For him, since a creature is of itself a non-being, it does not have being the way the Son among the divine Persons has being from the Father. Instead, because a creature only has participated being, it exists after not existing (Henricus de Gandavo, *Quodlibet I*, q.7-8, 36). On this score, Auriol disagrees with Henry. Borrowing an argument from Augustine, Auriol says that if, contrary to fact, fire were eternal, its radiance would be eternal too. In other words, an effect that isn't consubstantial with its (created) cause, but which the cause produces instantaneously, is coeternal with the cause. If this holds between a created effect and created cause, and God is more powerful than any created thing, then God can produce an effect of a different substance and yet coeternal with himself (Petrus Aureolus, *Scriptum super librum secundum Sententiarum* [Roma, 1605]), d.1, q.1, a.2, 14-15).

which he is obviously uncomfortable. In chapter one, I will first discuss Peter Auriol's question on the eternity of the world. I will highlight that for Auriol a world from eternity is impossible, for God's freedom in creating demands that creation occurred in an instant.

I. Peter Auriol

The Franciscan Peter Auriol, the Doctor facundus, read the Sentences in Paris in the years 1316-1318.⁹ Auriol examines the question of a possible world from eternity in his Scriptum super secundum librum Sententiarum, d.1, q.1, a.1-3. In the first article he asks whether it was Aristotle's opinion that the world has in fact been produced from eternity. Since my project focuses on what some medieval figures thought about the eternity of the world, and not on how they interpreted Aristotle, I will not attend to Auriol's first article. Article two asks whether something produced freely and contingently can be produced from eternity. Finally, Auriol concludes the question by considering whether it can be demonstrated that when the world began, it was as it is now, i.e. full of species and perfect from its parts. Gregory of Rimini studied Auriol's question closely¹⁰, and in the first section of chapter one I will report features of Auriol's discussion that later will help us appreciate the importance of Gregory's views. I intend to show that Auriol's question on a possible eternal creation raises three questions for Gregory: First, and most importantly, "Did God necessarily produce the world in an instant?" Second, "Does a world from eternity imply that a part is greater than the

⁹ Friedman, Russell L. "Peter Auriol." In *Stanford Encyclopedia of Philosophy*. Stanford University, 1997-. Article published September 10, 2009. http://plato.stanford.edu/archives/spr2014/entries/auriol/. ¹⁰ For example, above (n.9) we indicated Auriol's view that the impossibility of a world from eternity does not derive from the world being of a different substance than God. In his question on the eternity of the world (*Lectura super secundum*, d.1, q.3, a.1, 106-107), Gregory's views regarding the coeternality of different substances correspond largely to Auriol's and he quotes Auriol almost *verbatim* in a few places in that passage.

whole?" And third, "Does a world from eternity imply that an actual infinity of days has been traversed?"

To begin, Auriol's discussion of a possible world from eternity gives evidence of the long shadow Henry of Ghent cast over the whole subsequent debate. As I mentioned in the introduction, Henry's most important objection to a possible world from eternity was his view that, if God created the world from eternity, he created it necessarily.¹¹ For Auriol, Henry's argument presents the principal difficulty for the view that God could have freely created the world from eternity. He rehearses Henry's argument as follows:

The point and difficulty of the question consists in this, that what is or has been from eternity was unable not to be. For if it was able not to be, I ask in what instant. Not in a prior instant, because there is no instant before eternity; nor in an instant when it is, because it is a contradiction for something not to be in the instant when it is, because it would simultaneously be and not be; nor in an instant after it has been, because it was unable not to have been at least from eternity, and thus it was unable not to have been produced; but after it was produced, it was unable not to be, although it is. And then it follows that it was not produced freely and by choice.¹²

In what follows, I intend to show that Auriol agrees with Henry because Auriol thinks

that creation necessarily occurred in an instant. Moreover, if Auriol is correct in that

¹¹ Perhaps it has already occurred to the reader to ask himself why Henry of Ghent et al. think the supposed connection between a world from eternity and the world's necessity tells against the possibility of the former. The answer concerns in what respects medieval theologians regarded God as necessitated, and in what respects they thought of him as free. To mention one important example, Thomas Aquinas holds that since God's goodness is the proper object of God's will, God necessarily wills himself. Thus God *cannot* will not to be Triune – God simply is a Trinity of Persons and he necessarily wills himself to be Three-in-One. Yet, since God is eternally and supremely blessed in himself, vis-à-vis creatures God's will is absolutely free (*Summa theologica* I, q.19, a.3). Thus the necessary creation argument derives its force from the view (accepted by all medieval Christian thinkers I know) that vis-à-vis creatures God, in his dealings with creatures, necessarily does *x*, must be false.

¹² Petrus Aureolus, *Scriptum super II Sent.*, d.1, q.1, a.2, 12-13: "Punctus quaestionis et difficultas consistit in hoc, quod illud, quod est vel fuit ab aetrno non potuit non esse. Si enim potuit non esse, quaero in quo instanti. Non in priori, quia nullum instans est prius aeternitate; nec in instanti in quo est, quia contradictio est, quod aliud non sit in instanti in quo est, quia simul esset et non esset; nec in instanti postquam habuit esse, quia ad minus ab aeterno non potuisset non esse, et sic non potuisset non produci, sed postquam productum fuit non potuit non esse, et si hoc sit, tunc sequitur quod non producebatur libere et elective."

regard, it follows that the world necessarily began with some first being whose beginning was measured by the first instant. However, if there existed a first being whose production was measured by a first instant, then it is impossible for the world to be from eternity.

Consider what Auriol says in the following argument: "No production of a creature measured by a passing instant can be eternal; but every production of a creature, from the force whereby it is the production of a creature, is measured by a passing instant, therefore..."¹³ To prove the major premise, i.e. that no production measured by a passing instant is eternal, Auriol says that if the world was produced in a passing instant, and

If [that instant] was in act, therefore, the time which follows that instant has a beginning; since it is necessary that if an earlier instant has passed, and if it was in act, it was not continuous with the time preceding and following. For an instant that is continuous with the time preceding and following is not in act, but only in potency...and though something can be preserved in continuous time from eternity, nevertheless it cannot be produced, because production was measured by a passing instant in act, and because the instant could not actually be the end of preceding time and the beginning of the time following; therefore, an earlier time necessarily preceded [it]; therefore, that instant was not from eternity; therefore neither was the production.¹⁴

This text requires some unpacking. Most important is Auriol's point that a past instant, when it was in act, existed discretely, i.e. it was continuous neither with the instant that preceded it nor with the instant that followed. Any past instant existed only when the

¹³ Ibid., 15: "Nulla productio creaturae mensurata instanti transeunte potest esse aeterna; sed omnis productio creaturae, ex vi, qua est productio creaturae, habet, quod mensuretur instanti transeunte, ergo."

¹⁴ Ibid.: "Maior videtur esse evidens, ex quo enim ponitur instans transiens, si fuit in actu, ergo tempus quod sequitur instans illud habet initium, quia necesse est quod si prius instans transivit, et si fuit in actu, quod non fuit continuativum temporis praecedentis et sequentis. Instans enim quod continuat tempus praecedens et sequens non est in actu, sed tantum in potentia…licet et aliquid posset esse manutentum ab aeterno tempore continuo, non tamen productum, quia productio mensurabatur instanti in actu transeunte, et quia instans erat in actu non poterat esse finis temporis praecedentis et initium sequentis; ergo necessario praecedebat tempus prius; ergo instans illud non fuerat ab aeterno; ergo nec productio."

preceding instant had ceased to be and when the following instant still existed only in potency. Applying this view of time to the question of a possible world from eternity, Auriol can say that if the world was produced in an instant that is now past, that instant was continuous neither with a previous instant (for that instant had already ceased to be), nor with a subsequent instant (for that instant wasn't yet). Because an instant is not of a piece with preceding time or with the time to come, if God produced the world in an instant, then the world's production is temporally finite both *a parte ante*, and *a parte post*.

Of course, that point is useful for Auriol's purposes only if he can show the minor premise is true, i.e. that the world was in fact produced in a passing instant. Significantly for our purposes, it's in this portion of the argument that Auriol's agreement with Henry really comes to the fore. To prove the minor premise, Auriol argues that the force behind the initial production of a creature has limited effect. In fact, the power that propels a creature into existence cannot sustain it beyond its initial instant, for "if a creature's production were able to last from its own force, thus there would be no need of conservation...but this response is impossible, because the [creature's] production would be necessary, and the product could not be annihilated."¹⁵ In this passage, Auriol asks us to imagine a world in which creatures, in virtue of their production, could subsist beyond the instant of their production without being maintained in being. In other words, beings would endure after their production even without God conserving them. In this imaginary world existence would be similar to the motion of objects in outer space: as a propelled object moves indefinitely through a zero-gravity space at the same speed and on the same

¹⁵ Ibid.: "Quia si productio creaturae haberet, quod posset ex vi sua durare, sic quod non indigeret manutenentia...sed responsio est impossibilis, quia ex hoc videtur, quod productio illa esset necesse esse, et quod productum non posset annihilari."

trajectory, so the force of beings' production (*vis productionis*) would sustain them in existence during subsequent instants.

Auriol regards this imaginary world as impossible since he thinks God's freedom requires that creatures exist beyond the moment of their production only if God conserves them. As the passage quoted in the previous paragraph shows, for Auriol the continuing existence of creatures from the force of their production would limit God's freedom, because it would render God powerless to annihilate creatures after their production. Since even God cannot create and destroy a being at the same time, a creature is conditionally necessary in the instant of its production.¹⁶ If the force of production sustains a being subsequent to its production, it would continue to exist necessarily. Thus God, the source of the vis productionis, isn't free to destroy the creature after he produced it, for that would amount to God's working at cross-purposes with himself. Auriol distinguishes between God's production of a creature and his maintaining the same creature, because the distinction guarantees God's freedom to destroy what he earlier created. Auriol concludes that the imaginary scenario in which beings continue to exist by the force of their production is impossible. Creatures last after their production only if God maintains them. For our purposes and for Auriol's, affirming God's freedom in this way means that creation lasts only for an instant, i.e. the first instant of a being's existence, and thus could not be from eternity.

¹⁶ A little earlier in article two, in the course of explaining why God may create the world from eternity, and yet freely, Auriol says that one may consider the affirmation, "When an agent acts, it can also not act", either *in sensu diviso* or *in sensu composito*. In the "divided sense" the affirmation is true, insofar as when an agent X, provided he is under no compulsion, posits an act A, he could have not have posited A. Yet the same affirmation is false if taken in the "composite sense", since when X posits A, he cannot simultaneously not posit A, since this would run afoul of the principal of non-contradiction (Ibid., 13).

As we've seen, then, Auriol argues that God's freedom vis-à-vis creatures requires that the vis productionis causes creatures to exist only for a single instant. Production occurs in an instant. Further, since a passing instant lacks duration, creatures' production by God cannot be from eternity. According to Auriol, that God created freely necessarily means he created the world in a first instant before which there was nothing. Finally, then, we're in a position to see why Auriol agrees with Henry of Ghent: God was not free both to create and not to create while he created. Thus if one, believing God acts as a free cause, conceives of creation as occurring *in an instant*, he reasonably asks about an instant in which God was free to create or not to create. However, as Henry argues, there was no such instant if the world was created from eternity: not before eternity, since there was no such "before"; nor in the instant God created, since something cannot both be and not be at the same time; nor after God created, since God cannot change the past. As Gregory will show, however, one problem with the argumentation of Henry and Auriol is its starting point: in fact, there is no reason to insist that God produced the world in an instant, and therefore, neither is there reason to posit an instant prior to creation in order to safeguard the truth of God's freedom in creating. Attempting to prove that the world could not have been eternal, Henry and Auriol assume the very thing that is in dispute, namely that creation began *in an instant*. As I hope to show in chapter two, Gregory will critique Henry's and Auriol's starting point on the basis of his view that spatial continua (magnitudes) and temporal continua are composed of an actual infinity of parts. If time is composed of infinite proportional parts, and not of successive indivisible instants, then Auriol is incorrect when he asserts that divine freedom in creating demands creation lasted only for an instant.¹⁷

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¹⁷ Those familiar with Auriol's thought will notice that what he says in the *Scriptum* about creation

This point affords us a further sneak preview of Gregory's argumentation. As I've tried to show, the basis of Auriol's agreement with Henry is the former's view that creation necessarily occurred in an instant. But perhaps one may take Auriol's argument a step further: if creation necessarily occurred in an indivisible instant, then there necessarily was a first creature, since time is the measure of beings' movement. The first instant measures the existence of a first creature. Further, if there was a first creature, the world wasn't eternal. If a first man began to exist at a first instant, then between the first man and the men who now exist there have necessarily been finite men. This follows, since between the first instant and the current instant there are a finite number of instants, such that even if a new man were produced in each instant, there would still be finite men. In other words, the existence of a first man in the succession of men implies that the world necessarily had a temporal start. However, as I will try to show in chapter two, part of Gregory's discussion of the possibility of a world from eternity will answer precisely this concern. As we'll see, Gregory will field an objection that since there was necessarily a first creature, e.g. a first horse, there necessarily have been finite horses. Moreover, I will attempt to show that along with Gregory's *de facto* answer, i.e. that there is nothing contradictory about an infinite succession of individual horses created in an infinite

necessarily occurring in an instant seems inconsistent with his overall account of time. We've seen that Auriol's argument against the possibility of a world from eternity succeeds only if the instant in which God created the world is indivisible. On the other hand, as Chris Schabel points out, Auriol does not subscribe to an atomist theory of time (Chris Schabel, "Place, Space, and the Physics of Grace in Auriol's *Sentences* Commentary," *Vivarium* 38 [2000]: 120). Moreover, in the *Scriptum* (II, d.2, q.1, a.1) Auriol defines time as a continuum. He opposes the view that since time is numbered, and nothing discrete (in this case, number) can be intrinsic to a continuum, time cannot be a continuum. For Auriol, time is materially a continuum, i.e. the succession of motion. Time is divided only formally, i.e. when the soul numbers the succession of motion from without, separating stretches of the continuum into years, weeks, days, etc. In other words, for Auriol time is composed of discrete units only inasmuch as it exists in the soul that numbers motion. But if the division of motion into units occurs only subjectively in the soul, how can Auriol insist that creation necessarily occurs in an instant? His argument against the possibility of a world from eternity implies that instants exist *extra animam*, with the result that a creature's continuous existence after its first instant requires that God conserve it. For Auriol's account of time, see his *Scriptum super II Sent.*, d.2, q.1, a.1-5.

succession of instants, Gregory's account of the composition of continua provides additional reasons for thinking that creation did not necessarily include a first creature or a first instant. In this way Gregory helps us see that Auriol and Henry are incorrect.

In article three of his question, Peter Auriol makes a couple additional arguments Gregory will have to answer to demonstrate the possibility of an eternal world. In article three, he asks whether it can be demonstrated that when the world began, it was as it is now is, i.e. full of species and complete from its parts. In his view, though one cannot demonstrate a priori that the world began perfect and full of species, one can demonstrate it *a posteriori*, i.e. from the *inconvenientia* that arise from the contrary view.¹⁸ Two of Auriol's inconvenientia are important for our purposes. The first regards the view that all infinities are equal. If the world has existed from eternity as it now is, then unequal infinities would have resulted. Specifically, though the sun's orbit around the earth is greater than the moon's orbit, both the moon and the sun would have circulated the earth an infinite number of times, with the result that both would have covered an infinite distance. Presumably, the sun would have covered a greater distance, since its orbit is larger; but this is impossible, since one infinite distance cannot be greater than another. Thus the part, i.e. the distance covered by the moon in infinite time, would be equal to the whole, i.e. the distance covered by the sun in the same infinite time. However, since a part cannot equal the whole, the world with its current features, i.e. heavenly bodies circulating the earth in different orbits, could not have existed from eternity.¹⁹

¹⁸ Petrus Aureolus, *Scriptum super II Sent.*, d.1., q.1, a.3, 16: "Nunc probo, quod mundum isto modo incaepisse possit demonstrari phylosophice a posteriori per inconvenientia manifesta, quae reputo impossibile evadere..."

¹⁹ Ibid.: "Secundum inconveniens est de infinitis circulationibus, ex quo sequitur, quod tot erunt circulationes Solis, quot Lunae; quia utriusque infinitae, et sic pars aequabitur toti…"

Another *inconveniens* Auriol derives from the hypothesis of a world from eternity is the possibility that a continuum would be actually divided.²⁰ Making sense of Auriol's point here requires we recall how in VIII *Physics* Aristotle answers a question about whether its possible to traverse an infinite number of temporal points. Aristotle writes

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 traveller 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.²¹

For Aristotle, a temporal continuum is composed of potentially (but not actually) infinite points. Continuous motion through time demands that time is continuous. If there had *actually* been an infinite number of "nows" between the moment I was born and my tenth birthday, I would never have reached that age, as it would have required me to traverse an actual infinity, which is impossible. Since the potentially infinite nows between any two nows are *actually* only when the one analyzing time counts them, it is possible to move continuously through time. Auriol's worry above is that, if the world has been from eternity, i.e. if infinite days have passed, then the temporal continuum is no longer only potentially infinite, but has become actually infinite. For Auriol, unlike the potential infinity that never becomes an actual infinity, a world from eternity implies an actually infinite number of past days, and he notes that Aristotle's own principles show us this is impossible.²²

²⁰ Ibid.: "Aliud inconveniens est, quia possibile esset quod continuum esset actu divisum."

²¹ Aristotle, *Physics* in *The Complete Works of Aristotle: Volume I*, ed. Jonathan Barnes (Princeton, NJ: Princeton University Press, 1984), 439.

²² Anneliese Maier explains that for Auriol, an actual infinity is impossible, since created infinities have a successive character. Commenting on Auriol's position, she writes, "Die Seinsform des Unendlichen ist darum immer eine Mischung von Akt und Potenz, wie bei der Bewegung. Diese Wesensbestimmung soll ganz allgemein für das Unendliche in jeder Form gelten, nicht nur für die fortschreitende Addition der Zahlenreihe oder der Teilungsprozess des Kontinuum...sondern auch für die simultane Unendlichkeit" (Anneliese Maier, *Die Vorläufer Galileis im 14. Jahrhundert: Studien zur Naturphilosophie der*

In sum, from Auriol's discussion, three questions emerge that will later occupy Gregory of Rimini: first, does creation necessarily occur in an instant? Second, are all infinities equal? And third, is a temporal continuum composed of an *actual* infinity of parts? For Gregory to demonstrate the possibility of a world from eternity, he'll have to find ways to answer all three questions differently than Auriol. As I'll aim to show in chapter two, Gregory's account of the composition of magnitudes and temporal continua permits him to give innovative answers to all three questions, and thus argue convincingly that a world from eternity is possible.

II. William of Ockham

Our discussion of Peter Auriol's question concerning a possible world from eternity highlighted the influence Henry of Ghent exerted on that debate in the early decades of the fourteenth century. William of Ockham penned his disputed question *Utrum mundus potuit fuisse ab aeterno per potentiam divinam* a few years later than Auriol's question,²³ and Henry shaped Ockham's thinking regarding this issue as much as he did Auriol's. Ockham's question is odd, for despite the philosophical strength of his argumentation, he contents himself with a modest conclusion, namely that one may reasonably adhere either to the possibility or to the impossibility of a world from eternity, and that one cannot sufficiently disprove either view.²⁴ One may wonder why Ockham

Spätscholastik [Rome: Edizioni di "Storia e Letteratura," 1949], 202). In other words, Auriol accepts the possibility only of an *infinitum in fieri* and denies that of an *infinitum in facto esse*.

²³ Richard C. Dales thinks that Ockham authored this question sometime between 1319 and 1324, when he departed Oxford for Avignon (Richard C. Dales, *Medieval Discussions of the Eternity of the World* [Leiden: E.J. Bril, 1990] 222).

²⁴ Guillelmus de Ockham, *Quaestiones Variae*, ed. Girardus I. Etzkorn, Franciscus E. Kelley, et Josephus C. Wey in *Guillelmi de Ockham: Opera Philosophica et Theologica: Opera Theologica VIII* (St.

does not make the stronger claim his argumentation seems to warrant, namely that an eternal creation is possible (period!). In this section of chapter one, I will argue that Ockham accepts Henry's view that a world from eternity is incompatible with the doctrine of God's freedom in creating. Ockham distinguishes himself from Henry, however, in that he does not for that reason reject the possibility of a world from eternity. Unlike Henry and Auriol he approaches the question of an eternal creation primarily as a philosopher. However, Ockham the theologian recognizes, *à la* Boethius of Dacia, that his philosophical conclusions must leave room for faith. So instead of asserting that the world could have existed from eternity through God's power, Ockham concludes that the question remains open. Nevertheless, his inability to find a philosophical reason to preclude an eternal world causes him to lean to the view that an eternal world is possible.²⁵

First, to show the strength of Ockham's argumentation on behalf of the possibility of a world from eternity, let's examine two famously difficult arguments purporting to demonstrate that a world from eternity is impossible. After stating that one may reasonably hold either that the world could have been from eternity by God's power, or that such was impossible, Ockham rehearses four arguments "that prove that it could not

Bonaventure, NY: St. Bonaventure University, 1984), q.3, 59: "Dico quod utraque pars potest teneri et neutra potest sufficienter improbari." Notice that this position is actually weaker than what Thomas Aquinas had proposed nearly about fifty years earlier: For Aquinas, the eternity of the world cannot be philosophically demonstrated or disproved. For Ockham, the *possibility* of an eternal world cannot be philosophically demonstrated or disproved.

²⁵ Ockham recognizes no "manifest contradiction" in this view, and thinks God is able to do whatever does not violate the principle of non-contradiction. For example, he writes, "Quia tamen non videtur includere manifestam contradictionem mundum fuisse ab aeterno…" (Ibid.). And again, after rehearsing a number of Henry's *rationes contra*, Ockham says, "Sed istis rationibus non obstantibus, videtur quod nulla sit manifesta contradictio creaturam fuisse ab aeterno nec repugnantia, nec ex parte Dei, nec ex parte creaturae...Et ita dico quod si Deus potest facere quidquid non includit contradictionem, potuit fecisse mundum ab aeterno (Ibid., 67-68).

have been from eternity," and "which seem to conclude more that the others."²⁶ For example, the second of the arguments contends that, if there have been an infinite number of celestial revolutions, since for every celestial revolution God could have created a human being endowed with an immortal soul, there now could be an infinite multitude of rational souls. But an actual infinity is impossible; therefore, the world could not have been from eternity.²⁷ Opponents of a possible world from eternity, especially leading Franciscans like St. Bonaventure²⁸ and John Pecham²⁹, had long used this argument against their opponents, who typically held Aristotle in high regard. In the late thirteenth and early fourteenth centuries this argument had occasioned great consternation among the partisans of a possible world from eternity, especially Thomas Aquinas and his Dominican successors, e.g. William Peter de Godino and James of Metz.³⁰ In contrast, the implication of an infinite multitude of souls doesn't bother Ockham at all. He is happy to concede that, if the world had been from eternity, there would now be an infinite number of souls in act. For Ockham, it's only important to affirm that God would remain the only infinitely perfect being, since infinite souls do not form a unity among themselves.31

²⁶ Ibid., 59-60.

²⁷ Ibid., 60-61.

²⁸ Bonaventure, In secundum librum Sententiarum, d. 1, p. 1, a. 1, q. 2, 21-22, 23.

²⁹ John Pecham, *Questions Concerning the Eternity of the World*, ed. V. Potter (New York: Fordham University Press, 1993), 27.

³⁰ Although Aquinas, in his opuscule *De aeternitate mundi*, dismisses many arguments purporting to demonstrate the impossibility of a world from eternity as unworthy of serious consideration, he calls this one "rather difficult" (*difficilior*). In the same work Aquinas tries to avoid the implication of an actual infinity of souls by arguing that God could have created a world without human beings from eternity, and fashioned human beings at some later moment. Godino and Metz, not satisfied with Aquinas' solution, attempted to evade the argument by other stratagems (for more on what early Dominicans had to say about the eternity of the world, see John W. Peck, SJ and Chris Schabel, "James of Metz and the Dominican Tradition on the Eternity of the World, ca. 1300," *Medioevo* 41 (forthcoming).

³¹ Guillelmus de Ockham, *Quaestiones Variae*, q.3, 68. As Dales notes, thinkers in the tradition of Bonaventure tried to strengthen the "infinite souls argument" by claiming that an infinite multitude of souls would possess infinite power, which is impossible (Richard C. Dales, "Henry of Harclay on the Infinite,"

Another of the arguments Ockham rehearses claims that if the world has been from eternity, then a part of the temporal continuum would be greater than the whole. This argument is similar to an argument we already encountered in Auriol, but the version Ockham rehearses is longer and bears more clearly the mark of its progenitor, John Pecham. The argument goes like this: let a be the whole of past time up to the beginning of today. Next, b is the whole of future time from the beginning of today. Let c be the whole past time before the end of today, and d be the whole future time from the end of today. Now, if the world is eternal, a and b are equal, and c and d are equal. Further, b is greater than d, since future time from the beginning of today is greater than future time from the end of today. Thus, as b is greater than d, and a and b are equal, a is also greater than d. Moreover, if c and d are equal, then a is greater than c. However, a must also be a part of c, since the whole past time before the start of today belongs to the whole past time before the end of today. But since c is equal to d, and b is greater than d, the equality of a and b implies that a is greater than c, i.e. the whole of past time up to the beginning of today is greater than the whole past time before the end of today. Thus, if the world is from eternity, a part is greater than the whole to which is belongs. Since this is *inconveniens*, it is impossible for the world to be from eternity.³²

John Pecham, in the tradition of Bonaventure³³, was the first to propose this argument.³⁴ As we saw earlier, Peter Auriol regarded a similar argument as convincing.³⁵

Journal of the History of Ideas 45 [1984], 297). By indicating that infinite souls would not form a unity among themselves (and thus would not possess infinite perfection), Ockham's reply to the objection appears aimed at thinkers in that tradition.

³² Guillelmus de Ockham, *Quaestiones Variae*, q.3, 62-64.

³³ The part-whole argument is an elaboration of Bonaventure's argument that the world cannot be from eternity since it is impossible to add to the infinite (*In II Sent.*, d.1, p.1, a.1, q.2). According to Pecham, et. al., if the world is from eternity then c = eternity + 1 day. Since it is impossible to add to the infinite, the world cannot be from eternity.

³⁴ John Pecham, *Questions concerning the Eternity of the World*, q.2, 26-27.

Scotus answers it by claiming that while "equal", "greater", and "less" apply only to finite quantities, the argument posits that the world has existed through infinite time. For Scotus, since it makes no sense to compare infinities, it is false to say that *a* would be greater than c.³⁶ It's tempting to follow Scotus and dismiss the argument as premised on a category mistake. Yet, the argument's subsequent history finds Scotus' reply excessively quick and facile.³⁷ The argument also appears in Henry of Harclay.³⁸ Harclay's reply is considerably stronger than that of Scotus. Simply put, Harclay denies that all infinities are equal, which means that, in the part-whole argument, *a* and *c* may be unequal, and yet both infinite. To prove his point, Harclay reduces to absurdity the view that all infinities are equal: since there are more numbers that exceed 2 than exceed 100, and numbers extend to infinity, the infinity of numbers exceeding 2 is greater than the infinity of

³⁵ Petrus Aureolus, *Scriptum super II Sent.*, d.1., q.1, a.3, 16. Auriol's argument concerns the respective revolutions of the moon and the sun, and concludes that if the world were eternal, a part would *equal* the whole (in Ockham's version, the part is *greater* than the whole). But both version are premised on the equality of infinities.

³⁶ Ioannes Duns Scotus, *Ordinatio* II, d.1-3 in *Opera Omnia VII* (Typis Polyglottis Vaticanis: Vatican City, 1973), d.1, q.3, 87.

³⁷ For example, Auriol, obviously countering Scotus' reply to the part-whole argument, says that the *ratio quantitatis* belongs especially to the infinite. One may presume that Auriol reasons as follows: since infinite quantities are so great, and quantities are either equal or unequal to one another, infinite quantities, even more than finite quantities, are properly equal or unequal (Petrus Aureolus, *Scriptum super II Sent.*, d.1., q.1, a.3, 16).

³⁸ Richard C. Dales, "Henricus de Harclay: *Quaestio 'Utrum mundus potuit fuisse ab aeterno'*," *Archives d'Histoire Doctinale et Littéraire du Moyen Age* 50 (1983): 242. Interestingly, in the critical edition of Ockham's question (p.62, n.8), the editors attribute the following remark about the part-whole argument to Harclay: "Videtur mihi quod potest probari demonstrative, licet videtur aliis quod ratio est sophistica. Ego tamen nullam responsionem possum videre, nec potero in aeternum ut credo." This remark, which one finds in Dales' critical edition of Harclay's question, does not refer to Pecham's part-whole argument; instead, it refers to an argument Harclay makes to show just the opposite, namely that the infinite can be exceeded in the direction in which it is infinite. Harclay observes that if the world were from eternity, the sun would precede every father-son pair, individually and collectively. Thus, even if there have been infinite fathers generating infinite sons, their infinite past duration would nevertheless be exceeded by the sun's "more infinite" past duration (Dales, "Henricus de Harclay: *Quaestio 'Utrum mundus potuit fuisse ab aeterno'*," 248).

numbers that exceeds 100. Otherwise, one has to claim that all numbers equal 2, which is absurd.³⁹

As with the argument concerning infinite souls, Ockham denies that the partwhole argument gives us reason to deny the possibility of a world from eternity. Essentially, he adopts the argumentation of Harclay. Like Harclay, he argues that infinities are not all equal. For example, if the world is eternal, though the sun and the moon have each made infinite revolutions around the earth, the moon's revolutions are "more infinite" than the sun's revolutions, since its orbit is smaller.⁴⁰ On the other hand, the part-whole argument presumes the equality of infinities, e.g. of *a* and *b*, and of *c* and *d*. Since a key premise of the part-whole argument is false, *a*'s being greater than *c* gives us no reason to conclude that a world from eternity is impossible.⁴¹ In sum, as with the infinite souls argument, Ockham deals easily with what the rest of the Franciscan tradition regarded as a convincing argument against the possibility of a world from eternity.

It's puzzling that despite diffusing the power of two notoriously difficult arguments, Ockham manages to conclude only that regarding the possibility of a world from eternity, either view may be held and neither disproved. He sees no reason why one must deny the possibility of an eternal creation on the basis of the "infinite souls argument", which for decades had frustrated notable proponents of a possible eternal

³⁹ Dales, "Henricus de Harclay: *Quaestio 'Utrum mundus potuit fuisse ab aeterno'*," 245-246.

⁴⁰ Aquinas and Harclay provide the basis for this assertion by showing that, just as there may be a proportionality between a finite and an infinity, or a proportion between two finites, so there may be a proportion between two infinities. For example, as 8 is double of 4, so infinite 8s are double of infinite 4s (Aquinas, *Quaestiones disputatae de Veritate*, q.2, a.3, ad 4; Dales, "Henricus de Harclay: *Quaestio 'Utrum mundus potuit fuisse ab aeterno'*," 247). Concerning the infinite revolutions of the moon and the sun, since the proportion of the moon's revolutions to the sun's revolutions is 12 to 1 (at least according to medieval cosmology!), if the world has been from eternity, the proprtion of the moon's revolutions to the sun's revolutions would be infinite 12s to infinite 1s.

⁴¹ Guillelmus de Ockham, *Quaestiones Variae*, q.3, 80-81.

world like Thomas Aquinas. Moreover, he considers himself to have answered satisfactorily the part-whole argument, which was a favorite of the (mostly Franciscan) opposition to a possible eternal world. So why does he offer a conclusion far more timid than the one Aquinas had reached decades earlier?

To answer this question, let's examine how Ockham treats some of Henry of Ghent's arguments against the eternity of the word, especially his famous "necessary creation argument" that was so important for Auriol. When one reads Ockham's discussion of Henry's arguments, it's not immediately apparent that Henry exerts any special influence on Ockham's thinking regarding the eternity of the world. In fact, Ockham seems to handle Henry's arguments as capably as he did the earlier ones. For example, the first of Henry's arguments rehearsed by Ockham is as follows: a creature by itself and by its own nature is a non-being. Hence, another produces it, not only as to its *factum esse*, but also as to its *fieri*. In other words, a creature is non-being really precedes its being, and not only in the intellect or by nature. Further, since the act of creation is indivisible, lacking duration both *a parte ante* and *a parte post*, it cannot be from eternity.⁴³

Ockham shows that this argument fails in two respects. First, he points out that if a creature were a non-being by nature, then no power could make it a being. Actually, when some authors call a creature a *non-ens de se*, they mean to say only that, unlike

⁴² Already before Henry of Ghent, those who argued on behalf of a possible world from eternity claimed that it is possible for the world always to have been made (*factum esse*) without ever first becoming (*fieri*). Most notably, Aquinas says, "God is a cause producing his effect, not through motion, but instantaneously; therefore, it is not necessary that he preceed his effect in duration" (Thomas de Aquino, *De aeternitate mundi*, 86). For Aquinas, since God does not change or deliberate, it is possible (though not necessary) that God created the world such that the world has always been. In that case, God is responsible only for the world's *factum esse*, since the world never first became (*fieri*).

⁴³ Guillelmus de Ockham, *Quaestiones Variae*, q.3, 64-65.

God, it does not belong to the nature of a creature to exist.⁴⁴ Second, Henry's argument falls short inasmuch as it posits a necessary distinction between creation and conservation. For Ockham, this distinction relies on the notion of creation that belongs to Christian Revelation, which teaches that the world exists only after first not existing. In fact, one who holds that the world exists from eternity does not distinguish creation from conservation, *fieri* and *factum esse*.⁴⁵ While for Christians "creation" signifies that the negation of the thing produced really preceded the thing's existence⁴⁶, one who does not reason from revealed principles may define "creation" as "the total production of something by its efficient cause."⁴⁷ In that case, creation is not an event measured by a first indivisible instant; rather, things are created in each moment of their existence, "thus you are now created by God."⁴⁸

But now we proceed to Ockham's discussion of Henry's most important argument, i.e. that a world from eternity implies a necessary creation. As we'll see, though that argument doesn't compel Ockham to reject the possibility of a world from eternity, he agrees that a world from eternity is incompatible with God's freedom. The first step in Ockham's discussion is to correct Henry's reporting of what Aristotle says at *Perihermenias* I, 9 (19a23-24). In his first quodlibetal question, Henry reports that Aristotle says, "A being that is, when it is, is necessary."⁴⁹ Ockham, in contrast, indicates

⁴⁴ Ibid., 82: "Patet enim quod haec est falsa 'creatura est non-ens secundum naturam suam,' quia si sic, per nullam potentiam posset fieri ens. Et si aliqui auctores dicant quod creatura est non-ens de se, dico quod per tales affirmativas intelligunt negativas, scilicet quod creatura secundum naturam suam non est ens nec habet esse, etc."

⁴⁵ Ibid., 84-85.

⁴⁶ Ibid., 85-86.

⁴⁷ Ibid., 85.

⁴⁸ Ibid.

⁴⁹ Henricus de Gandavo, *Quodlibet I*, q.7-8, 40: "Secundum Philosophum esse quod est, quando est, necessario est." When Ockham rehearses Henry's argument, he places the following quote of Aristotle on

that Aristotle says the necessary proposition is rather "Everything that is, is when it is."⁵⁰ He then goes on to explain that the truth of such a temporal proposition requires the truth of both its parts for the same time the proposition is said to be true. For example, the proposition, "When Socrates is, he is necessary", is false, since the second part of the proposition is false relative to any creature. For Ockham, the proposition, "When *x* is, *x* is necessary", is true only if *x* is God, since the clauses "God is" and "God is necessarily" are both true for the same time, i.e. always.⁵¹

Next comes a key step for understanding Ockham's agreement with Henry that if the world is eternal, God created it necessarily. Ockham answers an objection from Scotus. The objection argues that the proposition, "Everything that is, when it is, is necessary," is conditionally necessary, though not absolutely necessary.⁵² In other words, although no creature is necessary *simpliciter*, when a creature is, i.e. on the condition that it is, it is necessarily by conditional necessity. If the objection succeeds, then one could hold that God retains his freedom in creating even in the event that the world has always existed. According to the objection, if the world were eternal, it would not be necessary *absolute et simpliciter*, but only on the condition that God wills it to be.⁵³ Ockham rejects

Henry's lips: "Secundum Philosophum, omne quod est quando est necesse est esse (Guillelmus de Ockham, *Quaestiones Variae*, q.3, 66).

⁵⁰ Guillelmus de Ockham, *Quaestiones Variae*, q.3, 87.

⁵¹ Ibid., 88-89.

⁵² Ioannes Duns Scotus, Ordinatio II, d.1, q.3, 79-80.

⁵³ This solution has a long history among those who favored the possibility of a world from eternity but wanted to safeguard the doctrine of God's freedom. As far as I'm aware, Godfrey of Fontaines was the first to answer Henry's argument by distinguishing between what is necessary *absolute et simpliciter* and what is necessary only *condicionata* (Godfrey of Fontaines, *Les quatre premiers Quodlibets de Godefroid de* Fontaines, ed. M. de Wulf and A. Pelzer, Institut Supèrieur de Philosophie de L'Université, Louvain 1904 (Les Philosophes Belges, Texts et Études, 2), 76-77]. Following him in this opinion were the Dominicans John of Paris (see Jean de Paris, *Commentaire sur Les Sentences. Livre II* [ed. J.P. Muller, Pontificium Institutum S. Anselmi, Rome 1964 (Studia Anselmiana Philosophica Theologica Edita a professoribus Instituti Pontificii S. Anselmi de Urbe, 12)], 28), William Peter de Godino, and James of Metz. For the questions of Godino and Metz, see Schabel's critical editions in Peck, SJ and Schabel, "James of Metz and the Dominican Tradition," Appendices I & II.

this view, however, on the grounds that it does not conform to the rules of logic, which dictate that every necessary proposition is absolutely necessary. For Ockham, there is no such thing as a proposition that is necessary by a merely conditioned necessity; rather there are two distinct types of absolutely necessary propositions, namely conditional (or temporal) and categorical.⁵⁴ Ockham's point is that a necessary proposition that includes a conditional is no less necessary than one lacking a conditional. Take the proposition "When Socrates is, Socrates is." Admittedly, when Socrates is, he is a contingent being. His existence depends on God causing him. Nevertheless, whether or not Socrates is, the proposition "When Socrates is, Socrates is" is every bit as necessarily true as the proposition "God is good and wise." Though God is necessary and Socrates is contingent, neither proposition can ever be false. As Ockham says, "Neither in the instant Socrates is, nor earlier, nor later is there potency to the contrary, namely that the conditional 'If Socrates is, Socrates is,' would be false, because it can never be false."⁵⁵ Therefore, there is no way to safeguard divine freedom by positing "conditional necessity."

Next, Ockham's hypothetical opponent, perhaps not grasping what Ockham has just argued, objects that if Socrates exists in instant a, his existence then is necessary in a, since he cannot both be and not be at the same time. Nevertheless, in a Socrates is only conditionally, and not absolutely necessary. Moreover, though in a Socrates exists necessarily by conditional necessity, before *a* it was possible for Socrates not to exist.⁵⁶ Of course, as one may anticipate, Ockham concedes all these points, since what concerns him here is *not* whether Socrates' existence is absolutely or conditionally necessary at a

⁵⁴ Guillelmus de Ockham, *Quaestiones Variae*, q.3, 89. As an example of an absolutely necessary conditional (or temporal) proposition, Ockham gives, "If [when] Socrates runs, Socrates moves"; on the other hand, "God is good and wise" is a absolutely necessary categorical proposition. ⁵⁵ Ibid., 90. ⁵⁶ Ibid.

or at any other moment. On the contrary, what is important for him is that the proposition, "If Socrates is, Socrates is", can never be false, though both the antecedent and the consequent signify contingent states of affairs.

Just when one wonders if Ockham has forgotten the purpose for discussing the necessity of different types of propositions, he draws us back to the question of Henry of Ghent's argument against the eternity of the world. Ockham concedes that, although the proposition, "When Socrates is, Socrates is", is always true, before Socrates is, it is possible for him not to be. There is a problem, however: as Henry argued, posita hypothesi that the world is from eternity, there never was such a "before." If "When x is, x is" is absolutely necessary, and the world has always been, then there has never been a moment when the affirmation, "The world exists", has not been absolutely necessary. There was never an instant before the world, in which there was the possibility for the world not to have been. Ockham observes that all true statements about the past are necessarily true since the past cannot be changed.⁵⁷ But in the case of the necessary truth of most affirmations concerning the past, e.g. "The battle of Gettysburg was fought from July 1-3, 1863", there was time before the past event when there was potency for the event not to occur. If the world has always existed, there never was a time in which "The world exists" could have been false.⁵⁸ Therefore, Ockham admits, if the world has been from eternity, then one can say God necessarily produced the world, as the Philosophers said, and not contingently.59

⁵⁷ Ibid., 91.

⁵⁸ Ibid.

⁵⁹ Ibid.

Perhaps one desiring to dispute my reading would point to what Ockham says two paragraphs later, at the very conclusion of his answer to Henry's argument that an eternal world would be a necessary world. Ockham writes

If we hold that these two things stand simultaneously, that the world is contingently produced by God and from eternity, then it is necessary to say, as it seems, that on this account the world was able not to have been in a, because earlier by nature or according to the understanding God was able not to have produced the world in a, because it was in his will to produce in a or not to produce.⁶⁰

Here Ockham suggests that, even if the world were eternal, God could still have freely caused it to exist in a, since God's act of causing the world precedes the world's existence, if not temporally, at least according to nature.⁶¹

These final lines of Ockham's answer to Henry's arguments strike me as incompatible with the whole discussion that preceded them. For one, the view that God's causing the world is prior to the world "by nature or according to the intellect" is tantamount to saying that the world is conditionally, but not absolutely necessary. As we've observed, however, unlike the many Dominican proponents of a possible world from eternity, Ockham rejects the distinction between conditional and absolute necessity as meaningless. Moreover, Henry of Ghent's argument is premised on the view that the

 $^{^{60}}$ Ibid., 92: "Si teneamus quod ista stant simul quod mundus sit contingenter productus a Deo et ab aeterno, tunc oportet dicere, ut videtur, quod propter hoc potuit mundus non fuisse in *a*, quia prius natura secundum intellectum potuit Deus non produxisse mundum in *a*, quia in voluntate sua fuit producere in *a* vel non producere."

⁶¹ Ockham was by no means the first to suggest this. Thomas Aquinas also distinguished between an "order of duration" and an "order of nature" to explain how even an eternal world must have been created by God *ex nihilo*. He writes, "The term 'after' unquestionably connotes order. But order is of various kinds; there is an order of duration and an order of nature. If, therefore, the proper and the particular do not follow from the common and the universal, it will not be necessary, just because the creature is said to exist subsequent to nothingness, that it should first have been nothing, in the order of duration, and should later be something. It is enough that in the order of nature it is nothing before it is a being; for that which befits a thing in itself is naturally found in it before that which it merely has from another" (See Thomas Aquinas, *De aeternitate mundi* in St. Thomas Aquinas, Siger of Brabant, St. Bonaventure, *On the Eternity of the World*, trans. and ed. Cyril Vollert, Lottie H. Kendzierski, and Paul M. Byrne [Milwaukee, WI: Marquette University Press, 1964], 21-22).

world's contingency depends on there having been some instant preceding the world's creation. Throughout his reply, Ockham concedes the truth of that premise. For example, a little earlier in the discussion Ockham's hypothetical opponent objects that, if the world has been from eternity, then one can say God necessarily produced the world. The opponent reminds Ockham that God does nothing outside himself necessarily. Ockham replies that, although in fact God does nothing outside himself necessarily, if one posits the counterfactual that the world is from eternity, then the proposition "the world has been from eternity" is absolutely necessary.⁶² Ockham wouldn't have felt himself constrained to reply in this fashion if he didn't admit Henry's key premise. Moreover, in the same paragraph as his suggestion for safeguarding divine freedom, Ockham answers the question, "If a being exists in a, does it have potency to non-being in a or before a?" He replies, "If by a you mean some instant of time, then I say that before a [the world] was able not to exist in a. If by a you mean eternity, then I say that neither in a was the world able not to exist in a on account of a contradiction, nor before a, because there is nothing before *a* in reality."⁶³ As before, this view requires Ockham to concede Henry's premise that, for something to exist contingently in some instant, there must have been a preceding instant in which the thing's cause could have refrained or been impeded from causing it. If a is a temporal instant, e.g. 2:37pm on 13 February 2015, then the world was able not to be in *a*, since God could have annihilated the world at 2:36pm of that day. On the other hand, if a represents eternity, then the world has never been in potency to non-being, since there is nothing prior to eternity. In the final lines of his answer to Henry, however, Ockham seems abruptly to change his mind, and says that natural

⁶² Guillelmus de Ockham, *Quaestiones Variae*, q.3, 92.

⁶³ Ibid.

priority may suffice for an agent's freedom. If this is really Ockham's view, one wonders why he spent the last several pages correcting Henry's reporting of Aristotle, distinguishing among different kinds of propositions, denying the reality of so-called "conditioned necessity," and explaining why creation from eternity implies that creation is necessary. After all, he could have avoided the need for all that argumentation had he just said, "Even if the world is eternal, God freely creates it since he precedes it naturally."

Earlier I claimed that the modest conclusion of Ockham's question is explained in light of his response to Henry's "necessary creation argument." Actually, Ockham's conclusion and the way he seems to change his mind about whether God may have freely created the world from eternity are both explained by the fact that he approaches the question primarily as a philosopher. In this respect his method is very different from that of Henry and Auriol. Reading closely the respective texts of Henry and Auriol, one sees that they did not approach the question of the world's eternity from a purely philosophical stance. Particularly when it comes to the "necessary creation argument", their conclusions were informed by principles derived from divine Revelation. For example, immediately after making the argument, Henry observes

If it is posited that [the world] always had being from God from eternity, not only did it never acquire being from God newly (*de novo*) from some beginning of time, but is it altogether impossible that it ever would have acquired being from God newly in some beginning of time. But this is simply false and impossible, since faith, which posits that the world was sometime made new by God, holds the contrary.⁶⁴

⁶⁴ Henricus de Gandavo, *Quodlibet* I, q.7-8, 41-42: "Sic creatura mundi, si ponatur habuisse esse a Deo ab aeterno, non solum numquam erat ei esse acquisitum a Deo de novo ex aliquo temporis initio, sed nec omnino possibile est ut sibi umquam fuisset esse acquisitum a Deo de novo in aliquo initio temporis. Quod falsum est simpliciter et impossibile, cum contrarium tenet fides, quae ponit quod mundus a Deo aliquando novus factus est."

Here Henry points to a distinction between those arguments for the possibility of an eternal world that do not exclude the contrary possibility, and those that do.⁶⁵ For Henry, the necessary creation argument belongs to the latter group. If one regards creation as necessary (which Henry thinks follows from the eternity of the world), then one excludes the possibility that God created the world at some time. However, that the world began as something new in time belongs to the teaching of faith. Therefore, it is impossible that the world exists from eternity.

Auriol's advocacy of the doctrine of divine freedom (and thus his agreement with Henry) also depends on his adherence to principles derived from faith. Recall that, for Auriol, the *vis productionis* causes a being to exist only for the being's first instant; afterwards, a thing continues to exist only if God maintains it. If the *vis productionis* could cause a being to last beyond its first instant, then the being would be necessary for that time, and perhaps for all time.⁶⁶ Regarding this argument, Auriol writes,

The consequent is contrary to the faith, because according to faith the creature needs something conserving it for any time, and thus if it lasts, this is due to another maintenance, whereby the thing produced is maintained, or from the production itself. Therefore, the production of a creature does not last from itself, except for an instant; therefore it is measured by a passing instant that cannot be eternal.⁶⁷

⁶⁵ As an example of the former, consider an argument Aquinas rehearses: "God does not withhold from any creature what is within its capacity in accordance with its nature. But there are some creatures with a nature capable of having always existed, as, for example, heaven. Therefore heaven seems to have received the gift of eternal existence. And if we grant that heaven existed, we ought also to grant that other creatures existed, as the Philosopher shows in Book II of *De caelo et mundo*" (*De potentia Dei*, in St. Thomas Aquinas, Siger of Brabant, St. Bonaventure, *On the Eternity of the World*, q.3, a.17, 45). The major premise of this argument is not true in all cases. God frequently allows creatures to die for lack of nourishment. That said, even one who for other reasons denies the possibility of a world from eternity can recognize that the argument, though not demonstrative, gives us some ground for regarding an eternal world as possible. Thus the argument speaks on behalf of an eternal world without excluding the possibility that the world is not eternal.

⁶⁶ Petrus Aureolus, *Scriptum super II Sent.*, d.1., q.1, a.2, 15: "Sed creatura vi productionis suae non habet, quod duret, nisi per instans, alias per aliquam durationem posset durare sine conservatione, et pari ratione, non video, quare non per totum tempus."

⁶⁷ Ibid.: "Consequens et contra fidem, quia pro quocunque tempore creatura indiget conservante secundum fidem; et ideo si durat hoc est ex alia manutenetia, qua manutenetur res producta, vel ipsa productio, ergo

According to Auriol, if the force of production could conserve a thing past its first instant, it would not need God to conserve it; but this is contrary to the faith, which holds that things' continued existence requires there be something conserving them; therefore, a being's production lasts only an instant and cannot be eternal. In sum, then, neither Henry nor Auriol rejects the possibility of a world from eternity on the basis of philosophical principles alone. On the contrary, their respective affirmations of God's freedom in creating (and, consequently, their rejection of the eternity of the world) flow from principles they regard as contained in divine Revelation. For Henry, creation cannot be eternal (and thus necessary) since that would contradict the article of faith that holds creatures acquired being newly from God. For Auriol, on the other hand, creation is necessarily measured by a non-eternal instant, since otherwise it would not need God to conserve it, which is likewise contrary to Christian faith.

But with Ockham we encounter a very different methodological approach to the question of a possible world from eternity. He works in the first place as a philosopher; at no point does he invoke the teaching of faith, the Bible, or ecclesiastical authorities as sources of his principles.⁶⁸ Specifically, when he answers Henry's necessary creation argument, he makes no appeal to Biblical Revelation or faith, as do Auriol and Henry. Nevertheless, though Ockham reasons as a philosopher about the possibility of a world from eternity, he remains a theologian. When he concludes his inquiry, he is mindful of the truth of faith that God precedes the world by duration, and not by nature only. He

productio creaturae de se non habet quod duret nisi pro instanti: ergo mensuratur instanti transeunte, quare non potest esse aeterna."

⁶⁸ We already saw an example of Ockham's distinctive methodology above (p. 22-23) when we noted how in response to Henry's view that a creature's *fieri* is different from its *factum esse*, Ockham argued that the necessary distinction between *fieri* and *factum esse* in creatures (and the corresponding distinction between *creatio* and *conservatio*) depends on divine Revelation, and not from principles derived from philosophical reason.

hesitates to arrive at a philosophical conclusion that would not allow room for faith. As a philosopher, he has dealt to his satisfaction with all the important arguments against the possibility of a world from eternity. As a philosopher, he agrees with thinkers like Avicenna, who hold there is no contradiction in the proposition that God necessarily created the world from eternity.⁶⁹ And yet, his conclusion, i.e. that both the eternity of the world and its temporal beginning may be reasonably held, illustrates a point of contact between himself and Henry: when philosophizing about matters that touch on what the faith holds, one must avoid conclusions that exclude the teaching of faith. Since, for Ockham, the eternity of the world would imply that God created the world of necessity (which was not the case for Aquinas and members of his school), Ockham the theologian hesitates to conclude that the possibility of an eternal world is philosophically more likely than its impossibility.

So why is Ockham important for understanding Gregory's intervention in the eternity of the world debate? As I've attempted to show, Ockham's deceptively modest conclusion masks the strength of his philosophical argumentation for the possibility of an eternal creation. Unfortunately for Ockham, his engagement with Henry's thought, while philosophically defensible, calls into question an article of faith, namely God's freedom in creating the universe. To make clear that, *qua* theologian, he did not endorse all the views to which he arrived *qua* philosopher, Ockham phrased the conclusion of his question on eternity somewhat over-modestly. Thus what was needed after Ockham was a philosophically rigorous response to Henry's "necessary creation argument" that gave proper respect to the doctrine of divine freedom in creation. The challenge was to defend the possibility of an eternal creation, by showing that God could freely cause even an

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⁶⁹ See n.6 above.

eternal universe. As I will try to show in chapter three, this is another goal of Gregory of Rimini's discussion of the eternity of the world. I noted above that Ockham agreed with Henry that a world from eternity is incompatible with divine freedom partly because he believed that Henry was correct that God cannot undo the past.⁷⁰ In chapter three I will argue that Gregory addresses God's power to undo the past to show how an eternal world and God's freedom in creating the world may be compatible.

Having treated the arguments of Auriol and Ockham, two of Gregory of Rimini's most significant fourteenth-century predecessors, in chapter two I will turn to Gregory himself, in hopes of showing how his account of the continuum as composed of an actual infinity of parts equips him to answer the arguments of Peter Auriol.

⁷⁰ Guillelmus de Ockham, *Quaestiones Variae*, q.3, 91.

Chapter Two - Gregory of Rimini on the Composition of Continua and its Relation to the Possibility of a World *ab aeterno*

In chapter two, I will attempt to show how Gregory's account of the composition of continua permits him to respond to Auriol's arguments (and ultimately to Henry's) against the possibility of an eternal creation. At the outset a *caveat* is necessary, however. My exposition and interpretation of Gregory's views in chapter two, though faithful to his thinking, go a bit beyond the obvious sense of the text. Gregory's thinking about continua does indeed inform what he says about a possible eternal creation (esp. in some of his replies to objections). Furthermore, his views about continua help him see why Auriol is incorrect in his view that creation occurs in a single, durationless instant. Nevertheless, a good bit of careful reading is required to see these features of Gregory's thought. One could read *Lectura super Secundum*, d.1, q.3 and walk away with little sense of how Gregory's views about continua inform his answer to Auriol. For example, when Gregory explicitly engages Auriol's principal argument against the eternity of the world, he does not question Auriol's all-important premise that creation occurs in a durationless instant. In other words, Gregory engages Auriol on Auriol's terms. Study of other portions of *Lectura super secundum* (henceforth, *LSS*) however, shows that Gregory did not accept that premise. When one reads LSS, d.1, q.3 with an awareness of Gregory's teaching regarding the composition of continua, one recognizes that his answer to Auriol is fuller than first appears.

This chapter has two parts. First, I will show how Gregory overtly deals with Auriol's argument that unless God created the world in an instant, God's freedom is in jeopardy. In the second part I aim to show how Gregory's accounts of the composition of
magnitudes and temporal continua permit a fuller refutation of Peter Auriol. I divide part two into two sections. First, I will exposit the three theses Gregory proposes at *LSS*, d.2, q.2 concerning the composition of magnitudes. Second, I will show how Gregory applies his theory of the composition of magnitudes to the composition of temporal continua. The second section of the second part aims to show how, like magnitudes, temporal continua contain infinite proportional parts. In the course of section two of part two, I hope it will become clear how Gregory's thinking about the composition of magnitudes gives us good reason to deny Auriol's view that creation occurred in an indivisible, duration-less instant.

I. Gregory of Rimini's Answer to Peter Auriol

First, then, let's examine how Gregory handles Auriol's views on the eternity of the world. At *LSS* d.1, q.3, a.1, Gregory reports Auriol's argument in precisely the terms we've rehearsed above: "It is argued thus by others: No production measured by a passing instant can be eternal. But every production of a creature, from the force whereby it is the production of a creature, is measured by a passing instant. Therefore, etc."⁷¹ He notes that, for those advancing this argument, the major is true on account of the distinction between a creature's production and its maintenance. Since the instant of a creature's production is the beginning of its time of maintenance, its production is finite *a parte ante* and thus the world's production cannot be from eternity.⁷² Finally, the minor

⁷¹Gregorius Ariminensis, OESA, *Lectura super primum et secundum Sententiarum: Tomus IV, Super Secundum (dist. 1-5)*, ed. A. Damasus Trapp (Berlin: Walter de Gruyter, 1979), d.1, q.3, a.1, 100: "Quinto arguitur sic ab aliis: Nulla productio mensurata instanti transeunte potest esse aeterna. Sed omnis productio creaturae, ex vi qua est productio creaturae, habet quod mensuretur instanti transeunte. Ergo etc."

⁷² Ibid.: "Tum quia in omni mensurato instanti transeunte prooductio differt a manutenentia, et instans productionis fuit initium temporis mensurantis manutenentiam. Igitur tempus manutenentiae est finitum a parte ante, et per consequens productio non fuit ab aeterno, igitur nec res producta."

also holds, since if a creature is not produced in a passing instant, it could endure without anything conserving it, which is contrary to faith.⁷³

In his response to Auriol, Gregory tackles Auriol's major premise before proceeding to oppose the minor. To dispute the major premise, i.e. "no production measured by a passing instant can be eternal," he distinguishes two ways of taking it. According to the first, it asserts, "It is impossible that something produced in a passing instant is or has been from eternity."74 Or the phrase may be taken to mean, "It is impossible that something from eternity was produced in a passing instant."75 Although both ways of taking the phrase seem eminently reasonable at first glance, Gregory rejects both as false. Neither proposition is correct, for "it is possible that something has been produced and is also produced in an instant, and yet in no instant was it first produced or is it first produced."⁷⁶ In other words, it's not necessary to think of the world as having been produced by God in a first instant, and as thereafter conserved by God for as long as it exists. On the contrary, God may produce the world continuously in successive instants stretching infinitely into the past.⁷⁷ Accordingly, the phrase "no production measured by a passing instant can be eternal" is false in both senses, since God can produce a thing in every instant from eternity without any of those instants being itself eternal.⁷⁸ Gregory

⁷⁴ Ibid., 111: "Impossibile est aliquid productum in instanti transeunte esse vel fuisse ab aeterno."

⁷³ Ibid.: "Alioquin per aliquam durationem posset durare sine conservante, et pari ratione per totum tempus, quod est falsum et contra fidem." Interestingly, in reporting the objection Gregory retains Auriol's comment that to claim a creature can exist past its first instant by the *vis productionis* involves denying a doctrine of faith, i.e. that creatures always depend directly on God for their existence. That Gregory combats this objection is evidence that faith and philosophy do not have the same relation for Gregory as they do for Auriol. We will discuss this point further in chapter three.

⁷⁵ Ibid.: "Impossibile est aliquid ab aeterno fuisse productum in instanti transeunte."

⁷⁶ Ibid.: "Quoniam possibile est aliquid esse productum et produci etiam actu in instanti, et in nullo tamen instanti esse primo productum vel primo produci."

⁷⁷ As I indicated above (p.19), Ockham makes a similar argument (*Quaestiones Variae*, q.3, 85) in the course of articulating a non-Christian notion of creation, according to which one does not distinguish between creation and conservation.

⁷⁸ Gregorius Ariminensis, *Lectura super secundum*, d.1, q.3, a.1, 111.

also criticizes Auriol's view that production *necessarily* differs from maintenance. Auriol is correct to differentiate production and maintenance relative to beings that begin. A being cannot be said to be conserved in its first instant, as it belongs to the meaning of "to be conserved" that the thing in question existed immediately prior to being conserved. Nevertheless, for the creature that exists from eternity (and Gregory sees no reason why one couldn't), there is no distinction between production and maintenance.⁷⁹ For Gregory, this point also overcomes Auriol's view that, if the force of a thing's production lasts past the thing's initial instant, then the thing would be able to exist without God conserving it. On the contrary, if God produces a thing in each instant from eternity, the thing never exists independently of God. Finally, Gregory's argumentation should allay Auriol's greatest fear, namely, that creation from eternity would jeopardize God's freedom in creating. On the contrary, if God produces a being in every instant such that it never exists apart from his causal activity, then God remains free to cease producing it at any moment.

In other portions of Gregory's question, he explains at greater length why it is incorrect to posit a necessary difference between God's production and maintenance of the world. For instance, at *LSS*, d.1, q.3, a.1, Gregory's *prima conclusio* claims, "It is possible for something to come to be all at once from God, even though neither it nor any part of it begins to be then."⁸⁰ Gregory marshals two examples to prove his point, one from supernatural revelation, another from nature. First, he reasons that since God the Father produces the Son wholly, without the Son or any part of him beginning to be at any time, and God is no less able to produce one thing wholly and without beginning than

⁷⁹ Ibid.

⁸⁰Ibid., 104: "Prima est quod possibile est aliquam rem simul totam fieri a deo, et tamen nec ipsam nec aliquid eius tunc incipere esse."

any other thing, God's omnipotence includes the ability to produce some creature without that creature or any part of it ever beginning to be.⁸¹ Next, Gregory supports his view with observations of how air becomes light. He remarks, "Whenever air becomes lucid, it becomes its light." No part of the air becomes light before the other parts; instead, the whole mass of air becomes light at once. Moreover, air changes from darkness to light only in the instant when the light first shines upon the air, as when one opens the shutters of a dark room. Thereafter, the air continues to become light all at once without any part of it becoming light first. Moreover, as at any moment except the first the light converts air entirely to light, without the air beginning to be light, so God produces the world now without the world beginning to be now. Thus since God's power is eternal, it is possible that God makes the world come to be at every moment without it ever having begun.⁸² The upshot of Gregory's argument here is that since *fieri* and *primo fieri* are not coextensive, i.e. things often become though they have long existed, it's not philosophically necessary to differentiate production and maintenance. As the Father produces the Son without the Son ever beginning to exist, God may analogously produce the world at each moment without the world every having begun.

Gregory's *secunda conclusio*, namely, "It is possible for some thing to come to be all at once from God without any sudden or successive change," likewise forms part of his reply to Auriol.⁸³ Gregory reasons to this conclusion on the basis of what he showed immediately prior, i.e., that it is possible for something to come to be wholly without it or

⁸¹Ibid.: "Primam conclusionem probo sic primo...Antecedens patet de facto, nam nunc filius dei producitur a patre...Et constat quod totus simul [producitur], et quod nec ipse nec aliquid eius nunc incipit esse. Consequentia probatur, quia non magis est impossibile quod aliquid fiat, et cum fit, non incipiat esse quam quod aliquid generetur vel alias vere producatur, et cum producitur, non incipiat esse. Nec deus minus potest hoc possibile quam illud."

⁸²Ibid..104-105.

⁸³ Ibid., 104: "Secunda, quod possibile est aliquam rem totam simul a deo fieri sine aliqua mutatione subita vel successive."

any part of it coming to be then. If the *prima conclusio* holds and there is not a necessary difference between production and maintenance in being, then God can bring something about without that thing's becoming constituting a change. On Gregory's line of thinking, God does this every time he preserves a thing that existed in the previous moment. On the other hand, when change occurs, whether the change happens in an instant or over a stretch of instants, there is a passage from non-being to being. As Gregory writes, "If... something comes to be all at once and with change from non-being to being, therefore, when it comes to be, it is; and immediately before it was not, and through the consequent then it begins to be."84 This scenario sounds very much like what Auriol proposes in arguing against the possibility of a world from eternity. As we've seen, for Auriol God's production of the world necessarily occurs in an indivisible instant before which there was nothing and after which God conserves the world. Auriol regards creation as a sudden change from the world's non-being to its being. On the contrary, Gregory has labored to show that since production and maintenance are not necessarily different, God can cause something to exist without God's act of causing resulting in any sudden change. In other words, though by faith Gregory knows that creation *did* occur suddenly, there is no logical contradiction in the idea of a creation not involving a passage from non-being to being.

In each of these arguments, Gregory answers Auriol on the latter's terms. Recall that Auriol premises his position against the possibility of a world from eternity on the view that God produced the world in a single, indivisible instant, after which God maintains the world. Had the instant of the world's production had any duration at all, i.e.

⁸⁴ Ibid.,105: "Et huiusmodi mutatio non potest esse nisi ex non esse in esse, ut certum est. Si autem aliquid fiat totum simul et cum mutatione de non esse ad esse, igitur quando fit, est; et prius immediate non fuit, et per consequens tunc incipit esse."

had the *vis productionis* propelled the world past its initial "now," then for some stretch of time (and conceivably for all time), God would not have been free to destroy the world. Therefore, Auriol's view requires one to accept that the world's initial "now" was duration-less, i.e. indivisible. In the response to Auriol we've reported above, Gregory argues *as if* he accepts that view of an instant. In his question on the eternity of the world, instead of attacking Auriol's view of the nature of an instant, he indicates that something can be produced in an instant (or better in an infinite succession of instants), without any single instant being eternal. Again, when he criticizes the saying "in everything measured by a passing instant, production differs from maintenance," he forgoes questioning Auriol's notion of a "passing instant", electing instead to challenge the view that production and maintenance are necessarily different.

But what if Gregory *had* challenged the notion of an instant implicit in Auriol's argument, and then approached the question of the possibility of a world from eternity from his own perspective of the nature of instants and time? In what follows, I will discuss how Gregory conceives of "nows" and time, and how those conceptions give him significantly more resources to argue on behalf of a possible eternal creation. This portion of the chapter will proceed in a few steps: first, we will examine Gregory's views regarding the composition of magnitudes, i.e. a spatial continua, since this will help us understand his account of the composition of temporal continua.

II. Gregory, Continua, and the Eternity of the World

A. Gregory on the Composition of Space

Gregory of Rimini addresses the composition of spatial continua in the *LSS*, d.2, q.2. In article one, Gregory advances three theses: First, he claims that no magnitude is composed of indivisibles; second, that every magnitude is in turn composed of infinite magnitudes; finally, that no magnitude contains anything intrinsically indivisible.⁸⁵ Gregory supports his denial that magnitudes are composed of indivisibles with several arguments, some based on the principles of mathematics, others on the principles of physics. Let's look briefly at one of Gregory's physical arguments to get a taste of how he proves the *prima conclusio* of article one.

The argument (which he borrows from VI *Physics*) is a *reductio ad absurdum*. Gregory posits that two objects, one fast and another slow, travel regularly and continuously through space. He asks us to imagine that the space through which the two objects move is composed of indivisible points. Although one is fast and the other slow, if the two objects begin to move at the same time, both will reach the first point in space at the same time. Why? The faster object cannot reach the first point before the slower object, since then the slower object would be only *part* of the way to the first point, and that would require the first point to be divisible, which is contrary to the posited indivisibility of points. Nor can the slower object reach the first point earlier, for then it would be faster and not slower than the faster object. Thus, the faster and slower object would reach the first point (and all subsequent points, for that matter) at the same time. In effect, if space is composed of indivisibles, then all regularly and continuously moving

⁸⁵Richard Cross notes that in texts dealing with spatial continua, Gregory uses "magnitudo" and "continuum" interchangeably (Richard Cross, "Infinity, Continuity, and Composition: The Contribution of Gregory of Rimini", *Medieval Philosophy and Theology* 7 [1998]: 91, n.5). A magnitude is nothing other than a spatial continuum.

objects would move at the same speed, which is obviously absurd. Thus, space is not composed of indivisibles.⁸⁶

Gregory fields a number of objections to his position that magnitudes are not composed of indivisibles. His reply to the fourth objection is especially pertinent to our inquiry into the possibility of a world from eternity, since there he introduces the notion of proportional parts. The objection claims that in a line A, either there is some mean between the first point of A and all other points of the line, or there is not. If there is a mean, then there will be some point immediate to the first point. On the other hand, if there is no mean between the first point and all other points, then all the other points (considered as a whole series) will be immediate to the first point. If this weren't the case, then there would be empty space between the first point and the next point, implying there wasn't a line to begin with. As it turns out, therefore, a line is inevitably composed of points immediate to one another. Moreover, if the points are immediate to one another, they necessarily lack parts, since if the points were divisible, only parts of the points would be immediate to one another, and not the points *per se*, which is contrary to what was posited.⁸⁷

As I mentioned, Gregory answers the argument in terms of the proportional parts of a magnitude. The notion of proportional parts is simple: to divide a magnitude according to proportional parts, one begins at one edge of the magnitude, e.g. the right

⁸⁶ Gregorius Ariminensis, *Lectura super secundum*, d.2, q.2, a.1, 285-286: "Si magnitudo componeretur ex indivisibilibus, sequeretur quod aequales magnitudines vel spatia in eadem mensura primo pertransirent mobile velox, regulariter et continue motum, et mobile tardum, etiam continue et regulariter motum. Consequens hoc et est contra sensum et implicat contradictionem, sicut patet ex definitionibus horum nominum 'velox' et 'tardum.'"

⁸⁷ Ibid., 290: "Quarto, et fortius. Aut aliquod punctum est medium inter primum punctum huius lineae verbi gratia A et omnia alia puncta eiusdem, aut nullum punctum est medium inter punctum primum lineae A et omnia alia puncta eiusdem. Hoc patet, quia partes huius disiunctivae contradicunt mutuo: Si aliquod est medium, igitur illud est immediatum primo puncto; si nullum est medium, igitur primum punctum et omnia alia sunt immediata, et per consequens aliquod aliorum punctorum est primo immediatum."

edge, and proceeding toward the left, divides it by some proportion, e.g. by half. Next, continuing toward the left edge of the original magnitude, one divides the left half by half. Yet again, one moves further toward the left, dividing the left quarter of the original magnitude by half, etc., etc. Gregory observes that since magnitudes are not composed of indivisibles, this process can continue indefinitely. Answering the objection reported above, he presents a scenario according to which there are two immediate bodies, A and B. If B is divided according to proportional parts, such that the first part is the half of B immediate to A, the second is the quarter of B immediate to A, and the third is the eighth of B immediate to A, then there will never be a single part of B immediate to A, since all the proportional parts of B will be immediate to A. Moreover, since even the smallest of the proportional parts of B contains infinite parts, each of which themselves include infinite proportional parts, etc., there will never be a single proportional part of B immediate to A.⁸⁸ The upshot of Gregory's reply is that, given the infinite divisibility of any segment of a magnitude (including of a point), just as there is not single sliver of B immediate to A, so there is no single indivisible point of line immediate to the line's first point.

The *secunda conclusio* Gregory proposes at *LSS*, d.2, q.2, a.1 is that every magnitude contains infinite magnitudes. Before showing why this is true, Gregory notes one may speak about the infinite in two ways. As we noted in chapter one regarding the so-called "infinite souls argument," Aristotle had distinguished between actual and potential infinities. Writing about Gregory of Rimini, Richard Cross notes that fourteenth

⁸⁸ Ibid., 292: "Si sint duo corpora A et B, dividendo B in partes proportionales sic quod prima pars sit eius medietas remotior ab A, et secunda sit medietas alterius medietatis, immediata priori medietati totius, et tertia sit medietas residui, et sic semper procedendo versus A, tunc haec est vera 'A et omnes partes proportionales B sunt immediata', et tamen haec est falsa 'aliqua pars proportionalis B est immediata ipsi A', cum talium nulla sit ultima versus A."

century thinkers often replaced Aristotle's distinction with one that was similar, yet more rigorous, namely that between syncategorematic and categorematic infinities.⁸⁹ For Gregory, continua and discrete things may be infinite syncategorematically. A continuum is infinite syncategorematically if it can be greater than anything finite (quantocumque *finito maius*). For example, some cosmologists speak of the universe as infinite inasmuch as it is continually expanding: there is no end to the universe, but it's not so great that it greater. On the other hand, discrete things are cannot become infinite syncategorematically if, given any finite number of things, there can always be more of them (*quotcumque finitis plura*).⁹⁰ For example, the number of future days is potentially unlimited. In contrast, a continuum is infinite *categorematically* if its extension is greater than all finite space (maius quantocumque finito), and discrete things are infinite categorematically if they are so numerous as to exceed all finite numbers (plura quotcumque finitis).⁹¹ In article one of LSS, d.2, q.2, Gregory argues that any magnitude contains infinite magnitudes, both syncategorematically and categorematically speaking.92

⁸⁹ Cross, "Infinity, Continuity, and Composition", 98.

⁹⁰ Gregorius Ariminensis, *Lectura super secundum*, d.2, q.2, a.1, 294.

⁹¹ Ibid. It's significant that in this passage Gregory gives two sets of definitions of syncategorematic and categorematic infinities, respectively. First, he says that a syncategorematically infinite continuum is *non* tantum quin maius, and syncategorematically infinite discrete things are non tot quin plura. On the other hand, a categorematically infinite continuum is *tantum quod non maius*, and categorematically infinite discrete things are tot quod non plura. However, he then proceeds to give the four definitions we mentioned above, which he says he are more proper. Maier gives a fine explanation of why Gregory prefers the second set of definitions: if one conceives of categorematically infinite discrete things as tot quod non plura, one risks confusing a categorematic infinity for a "maximum number" of things. Gregory, on the contrary, thinks of a categorematic infinity as "transfinite", i.e. "greater than any imaginable finite size or number." Each of Gregory's prefered appellations emphasizes that both actual infinities, syncategorematic and categorematic, are not to be conceived as maximums. Moreover, in distinguishing syncategorematic and categorematic infinities, the word-order Gregory uses is decisive. For example, when he says a syncategorematically infinite continuum is *quantocumque finito maius*, the sense is that it is greater than any [beliebige] finite size, but when he says a continum is mains quantocumque finito, the sense is categorematic, signifying that it is greater than all finite sizes (Anneliese Maier, Die Vorläufer Galileis, 214-215; 215, n. 124). ⁹² Gregorius Ariminensis, *Lectura super secundum*, d.2, q.2, a.1, 295.

Naturally, this claim requires ample explanation. Gregory argues for the claim in three steps. His first step is to show that every magnitude has parts. Of course, he had already done this work when he proved that magnitudes are not composed of indivisibles. If a magnitude did not include parts, then it would be indivisible, which we already know is not the case. Yet, in this step of the argument Gregory makes two additional observations: 1) some parts of a magnitude are distant from other parts, e.g. an extreme half of one part is distant from an adjoining part, and 2) of any magnitude, some parts are greater than others, e.g. a quarter is less than a half. Both of these sub-points are important for Gregory's attempt to show how magnitudes have infinite parts. Secondly, Gregory shows that every magnitude contains syncategorematically infinite parts. Again, this follows from his proof that magnitudes are not composed of indivisibles. If a part can be divided further without ever arriving at a basic unit, then there is no numerical limit to the parts of a magnitude thus includes syncategorematically infinite parts.⁹³

Next, Gregory attempts to ground the much bolder claim that a magnitude contains categorematically infinite parts. Yet again, he relies heavily on something he has already shown, namely that magnitudes are not composed of indivisibles. Keeping this in mind, let's imagine that we were able to see the complete division of a magnitude.⁹⁴

⁹³ Ibid., 295-296.

⁹⁴ One may ask how a magnitude can be completely divided if it is not composed of indivisibles. Since no part is indivisible, couldn't one continue to divide parts into smaller parts, e.g. into halves, *ad infinitum*? In fact, this objection confuses syncategorematic and categorematic infinities. If the division is an infinite *process*, such that however many divisions we've made of a line, we can always make more, the parts are *syncategorematically* infinite. In contrast, a *categorematic* infinite cannot be exceeded. Categorematically infinite parts are not the result of a temporally extended process of division. Rather, God's mind (and only God's mind) beholds a continuum's categorematic infinity of parts all at once. As Gregory writes, "Since God immediately and all by himself can conserve any entity whatever in being without anything else that does not belong to it essentially, he could actually divide each and every proportional part existing in a continuum from each and every other proportional [part] that is not part [of the first one], and conserve in existence all such parts. With that done, there will be an actual infinite multitude of discrete things..." (*LSP*, d. 42-44, q.4, a.1, 442; thanks to Russell Friedman for access to his translation of this passage). Or again, "In God's conception the continuum is totally actually divided into parts, of which each is also

Clearly, the number of divisions of a completely divided magnitude cannot be finite, e.g. 4 or 100, since if one were left with a finite number of parts, one could continue dividing them, since the original magnitude was not composed of indivisibles. Thus if one takes collectively all the parts of the whole magnitude, then the parts must be more than any determinate number, which is the very definition of a categorematic infinite.⁹⁵ Gregory also argues that, if the parts of a magnitude are syncategorematically infinite, it follows that they are categorematically infinite, too. This must be the case, for if a magnitude included a determinate number of parts, its parts wouldn't be syncategorematically infinite, since the magnitude's parts are finite only if no further division is possible. For Gregory, syncategorematic infinity implies categorematic infinity and vice-versa.⁹⁶ Thus one may summarize the distinction between a syncategorematic and categorematic infinite as it relates to the parts of a spatial continuum: on the one hand, a magnitude includes a syncategorematic infinity of parts, for no matter how many parts one has made through dividing, one can always continue to divide and so have more parts; on the other hand, a magnitude includes categorematically infinite parts, since if all possible divisions could be made (and they *are* all made in God's mind), the parts would exceed any finite number.97

totally divided, and includes infinitely many actually divided [parts]" (*LSP.*, d.35-36, q.1, 224; cited in Cross, "Infinity, Continuity, and Composition," 102).

⁹⁵ Gregorius Ariminensis, *Lectura super secundum*, d.2, q.2, a.1, 296: "Quaelibet pars partis est pars totius illius partis. Igitur, omnes partes totius collective sumendo et ad bonum intellectum, sunt plures quam 4 et quam 100, et sic quotcumque determinati numeri. Alias esset dare maximum numerum earum et tunc nulla illarum haberet partem et partem, quod repugnat antecedenti [i.e. cuiuslibet magnitudinis quaelibet pars habet partem]."

⁹⁶ Ibid., 297: "Generaliter de quibuscumque de inesse et praesenti vere dicitur quod sunt infinita syncategorematice, vere etiam dicitur quod sunt infinita categorematice, et econverso."
⁹⁷ Anneliese Maier notes that medieval thinkers had numerous ways of speaking about the same distinction.

⁹⁷ Anneliese Maier notes that medieval thinkers had numerous ways of speaking about the same distinction. For example, a categorematic infinite is infinite in the sense of "transfinite", while a syncategorematic infinite is infinite in the sense of "indefinite." The universe expands infinitely, i.e. indefinitely, but at no moment does the universe contain transfinite space. Alternatively, some medievals spoke of an *infinitum in*

Before proceeding to Gregory's third thesis about the composition of magnitudes, let's note that what we already know about Gregory's notion of proportional parts and his distinction between syncategorematic and categorematic infinities positions us to see why he isn't bothered by two of Peter Auriol's arguments against the eternity of the world reported toward the end of part one of chapter one. Recall that for Auriol, a world from eternity would present at least two *inconvenientia*: first, it would mean that a part would be equal to the whole, e.g. the moon's revolutions, though covering only a part of the distance of the sun's revolutions, would equal them, since one infinite cannot be greater than another. Second, if the world has been from eternity, then infinite days have passed. However, this implies the traversal of an *actual* infinite, which is impossible. Regarding the first purported *inconveniens*, Gregory's appeal to a magnitude's proportional parts reveals that not all infinities are created equal, or at least not in every respect. Obviously, the distance the sun covers in infinite revolutions is greater than that covered by the moon. Nevertheless, either distance, if completely divided into proportional parts by the same proportion, e.g. ¹/₄, includes categorematically infinite parts (*plura quotcumque finitis*). Thus, while one distance is greater than the other *simpliciter*, considered as completely divided into proportional parts, the distances are equal. Moreover, to the allegation that an eternal creation implies the traversal of an actual infinite, Gregory could answer Auriol that the total revolutions of the sun and the moon over infinite days represent syncategorematic infinities, i.e. actual infinities that are potentially greater. The process of the sun and moon revolving around the earth may continue *ad infinitum*, as the

fieri, i.e. syncategorematic infinite, and of an *infinitum in facto esse*, i.e. categorematic infinite (Maier, *Die Vorläufer Galileis*, 156-157).

process whereby a created agent divides a magnitude into proportional parts can likewise be never-ending.

Lastly, we arrive at the third conclusion Gregory advances in article one, namely that a magnitude includes nothing intrinsically indivisible. He proves the conclusion thus: if there is a point in a magnitude A, either there is precisely one, or many. But the first alternative is impossible, since if there were a magnitude A with only one point, there would be a part of A without any points, and this part would itself be a magnitude. Moreover, if one magnitude lacks points, then no magnitude includes points, since the same judgment is true of all magnitudes.⁹⁸ Neither can a magnitude include many points, however. If this were so, then besides all the points taken singly or altogether, either there would be some residual entity, or not. If not, then it is established that the whole magnitude is composed of indivisibles, which Gregory showed to be impossible when he proved the first conclusion. If there is an entity besides the points, it is infinitely divisible magnitude, since it does not include any indivisible points. However, as we just saw, if there is a magnitude bereft of points, then no magnitude includes indivisible points, which was the very thing Gregory was trying to show.⁹⁹ Effectively, Gregory's *tertia conclusio* denies the existence of indivisible points. If points existed, they would exist in space; but what exists in space is a magnitude; however, every magnitude is divided into infinite proportional parts, and thus necessarily lacks points, which are per definitionem indivisible.

⁹⁸ What Gregory means here is a bit obscure. It seems fallacious to argue that since one magnitude hasn't points, no magnitude has them. Presumably, Gregory means that if one magnitude lacks points, then it doesn't belong to the nature of magnitudes to have points. Thus, if another magnitude includes points, its including them is only coincidental to its being a magnitude.

⁹⁹ Gregorius Ariminensis, Lectura super secundum, d.2, q.2, a.1, 313.

B. Gregory on the Composition of Time

Why have we devoted so much space of this chapter to Gregory's account of the composition of magnitudes? The answer is simple: As we'll see, Gregory's views about the possibility of a world from eternity make sense once one understands how he conceives of the composition of *both* magnitudes and temporal continua; moreover, Gregory's account of the composition of time derives largely from his views about magnitudes.

To see how this is so, let's look at a passage from article two of Gregory's question on the eternity of the world. Similarly to the corresponding article of Auriol's question, there Gregory asks, "Whether it was possible that the whole world has been from eternity according the mode whereby it now is and has been since it began."¹⁰⁰ Gregory gives the following objection: If the world has been from eternity as it now is, then there has been an infinite succession of horses. Further, the world and the infinite horses were still caused by God, for otherwise they would not be. Yet, God does not create universals, e.g. a universal horse. Instead, God's creative acts terminate in particular beings, e.g. this or that specific horse. Therefore, if the world is from eternity, God must have created an eternal horse, to which one can trace the successive generations of horses, beginning with the horses that exist now. In other words, there must have been a horse created immediately by God before which there weren't horses. But between a first horse and the last horse, i.e. a horse that is now, there can be only a

¹⁰⁰ Ibid., 98: "Secundo, utrum fuerit possibile, ab aeterno fuisse totum mundum secundum modum quo nunc est, et fuit ex quo incepit." Gregory's manner of phrasing this question reminds us that he, like all medieval thinkers who weighed in on this debate, believed that the world began. The issue here is whether the world, which Gregory thinks has included the same species and parts since it began, could have existed as it does without a temporal start.

finite number of horses. Therefore, the world cannot have been from eternity as it now is.¹⁰¹

Gregory's answer illustrates how he applies his account of magnitudes to temporal continua. First, he concedes that if the world has been from eternity as it is now, there would have been infinite horses. But like Aristotle, he denies it follows from this that there was some horse *ante quem nullus*.¹⁰² To clarify this, Gregory explains what it would mean for horses to exist from eternity. He agrees with the objector that God does not create universals, but only this or that particular horse. Thus if the world were eternal, "[God] made only singular horses…and from eternity he made some singular horse [*aliquem equum singularem*], with another already generated horse mediating or concurring toward its generation."¹⁰³ In other words, given a world from eternity, there would have been an endless chain of horses, all created by God through secondary causes. To maintain that horses as a species are eternal does *not* imply there was some single horse generated by another horse from eternity. For Gregory, if the world has always been, there would have always been horses around the place, though none of them would be first.¹⁰⁴

To convince the objector that a world from eternity does not imply an eternal horse, Gregory compares creation to the continuous intension of a form [*intensio continua formae*]. The comparison connects to a debate among medieval theologians

¹⁰¹ Ibid., 119-120.

¹⁰² This fallacy, a good example of a quantifier-shift, seems common among those who opposed the possibility of a world from eternity, at least judging from objections rehearsed by those who favor the possibility. For example, the Dominican James of Metz, who ca.1300 authored a question on the eternity of the world, lists a similar argument among the *rationes ex parte creaturarum successivarum* (see Peck, SJ and Schabel, "James of Metz," Appendix I).

 ¹⁰³ Gregorius Ariminensis, *Lectura super secundum*, d.1, q.3, a.2, 121.
 ¹⁰⁴ Ibid.

concerning certain kinds of accidental change.¹⁰⁵ How does one correctly analyze the change occurring when an accidental form is intended (e.g. when coffee in a cup is heated from 100 degrees to 120 degrees) or remitted (e.g. when the same coffee is cooled from 120 degrees to 100 degrees)? Gregory considers a form

Which is intended through the addition of a degree. For infinite parts of a form are generated and the one generating does not generate some universal form, but only a singular. And still he generates no part first, nor among them was there any first [part], since before any part was generated, its half was generated.¹⁰⁶

In this text, Gregory asks us to imagine any accidental form inhering in an object. Sticking with the example offered above, we can consider what occurs when one heats coffee. As it turns out, Gregory thinks that like a magnitude, an accidental form, e.g. the heat of coffee, has infinite proportional parts.¹⁰⁷ Thus intending a form generates infinite parts for the accidental form that is intended. Interestingly, however (and this is Gregory's point for the example), even if one intends a form for an instant, the form's increased intensity has no first part. On the contrary, even the smallest part of the form's newly generated intension is divided into infinite proportional parts. Any putative "first

¹⁰⁵ When Gregory and his medieval colleagues speak of the intension and remission of forms, they are concerned with qualitative changes in a substance. Unlike substantial forms like "rationality," qualities like "whiteness", "heat", and "grace," etc., admit of more or less. For a treatment of the development of the medieval debate on the intension and remission of forms, see Jung, Elzbieta, "Intension and Remission of Forms," in *Encyclopedia of Medieval Philosophy: Philosophy between 500 and 1500*, ed. Erik Lagerlund (Dordrecht: Springer, 2011): 551-555.

¹⁰⁶ Gregorius Ariminensis, *Lectura super secundum*, d.1, q.3, a.2, 121: "Et huic simile apparet in intensione continua formae, quae intenditur per additionem novi gradus. Infinitae enim partes formae generantur et generans non generat formam aliquam universalem sed singularem tantum. Et tamen nullam partem primo generat nec inter illas aliqua fuit prima, quoniam cuiuslibet medietas prius genita fuit quam ipsa."

¹⁰⁷ In his *Lectura super primum Sententiarum*, d. 44, q.4, a.1 Gregory had already argued for the possibility that God can create some intensible or remissible form, e.g. *caritas*, infinite intensively in its species. One of the objections raised against this thesis is the supposed impossibility for something to have infinite parts at once. Answering this objection, Gregory concludes the infinite parts of an intensible form from the infinite parts of a continuum. He writes, "Nor [is the conclusion impossible on account of] the third [possibility], because it is not impossible [for there to be infinite parts of the same thing at once]: just consider the parts of the continuum." (Thanks are due to Russell Friedman for access to his translation of d.44, q.4 of *LSP*.) Since up to that point in d.44, q.4, Gregory has spoken only of *spatial* continua, i.e. magnitudes, it's clear that in this passage he infers the infinite parts of an intensible form from the infinite parts of a magnitude.

part" of the coffee's increased heat to which Gregory's opponent could point is already divided into infinite parts, with the result that there cannot be a first.

Gregory's analysis of continuous intension of an accidental form alerts us to an interesting feature of time, namely it is divided into infinite proportional parts the same way magnitudes are. We just noted how, for Gregory, intending an accidental form generates infinite proportional parts, even if one intends it for an "instant." What is the nature of this instant? Does it have duration? Simply put, the instant in which the coffee is heated is not a duration-less, indivisible unit; rather, it necessarily has duration corresponding to the coffee's increased heat. This is evident from the following reasoning: The coffee's increased heat includes infinite proportional parts, each of which was generated in an instant; moreover, since the parts were not added simultaneously, each of them must have been added at some distinct part of the instant; finally, since the parts are proportional parts, the instant in which the parts were generated must likewise be divided into proportional parts. In sum, then, in the course of showing why an eternal creation does not require that specific creatures are eternal, Gregory has subtly introduced the notion of an infinitely divided temporal continuum.¹⁰⁸

Another argument against the possibility of an eternal creation, along with Gregory's response thereto, helps show how he connects the composition of magnitudes to that of time. The objector posits that God makes a triangle, and then each day augments its three sides by some determinate quantity. If infinite days have passed since God made the shape, there would be an infinite triangle, having sides of infinite length. But the lengths of a triangles' sides are necessarily finite, since otherwise the sides

¹⁰⁸ Since Gregory deduces the infinite parts of an intensible form from the composition of a magnitudes (see n. 108), his derivation of the proportional parts of an instant is ultimately related to his theory of the composition of magnitudes.

wouldn't meet to form angles. Thus the sides of the infinite triangle would be both infinite and finite, which involves a contradiction. It follows that the world cannot be from eternity.¹⁰⁹

Gregory's answer is simply to deny the consequence, namely, that there would be a triangle whose sides would be both finite and infinite. As a matter of fact, Gregory argues, if God were to augment the sides of a triangle each day the way the argument posits, "on no day would there be a triangle, but a certain magnitude having only one angle, whose sides would be infinite in other directions."¹¹⁰ Then Gregory does something interesting, i.e. he makes himself even more clearly the target of the objection.

He writes

Notice that the aforesaid difficulties can be thrown at anyone positing that a continuum is not composed of indivisibles. Since when this is posited, in any hour there are infinite proportional parts of the same proportion. Therefore, let there now be posited some triangle or circle. Then I argue that in whatever proportional part of the one hour following, God could make a triangle or circle larger according to a certain determinate excess, or that he could augment the given one in that way... And it is established that God can do whatever he wills no less in a part of time however small, than in one day or in one year. But when this is posited, it is clear that it follows that at the end of an hour, indeed, certainly and in whatever part of its aforesaid proportion there will be an infinite circle and an infinite triangle.¹¹¹

Gregory's point is that, in a certain sense, the objection may seem even more effective

against one who, like himself, believes that a continuum is not composed of indivisibles,

¹⁰⁹ Ibid., 120.

¹¹⁰ Ibid., 122: "Quinimmo supposito tali augmento nulla die fuisset triangulus, sed magnitudo quaedam unum tantummodo habens angulum, cuius latera in aliam partem essent infinita."

¹¹¹ Ibid., 122-123: "Et adverte quod cuilibet possunt ingeri similiter difficultates praedictae, ponenti continuum non componi ex indivisibilibus. Quoniam hoc posito in qualibet hora sunt infinitae partes proportionales eiusdem proportionis. Ponatur ergo nunc aliquis triangulus vel circulus. Tunc arguam quod poterit deus in qualibet parte proportionali unius horae sequentis maiorem triangulum vel circulum secundum determinatum excessum facere, vel datum modo illo augmentare...Et constat quod non minus in quantumcumque parva parte temporis potest deus agere quidquid vult quam in una die vel in uno anno. Hoc autem posito, patet quod sequitur quod in fine horae, immo certe et in qualibet parte eius proportionis preaedictae erit circulus infinitus et triangulus infinitus."

or better said, who thinks a continuum is composed of infinite proportional parts. For if that is the case, since *posita hypotesi* an hour has infinite parts, then if God augments the sides of a triangle by some quantity at every part of an hour, even at the end of an hour there will be an impossible figure, i.e. and infinite triangle. Moreover, since God can accomplish as much in any part of an hour as he can in the whole, then even at the end of an infinitesimally short period there can be an infinite triangle. Apparently, then, Gregory is more vulnerable to the objection than his opponent anticipated: while the opponent thought that a contradiction, i.e. an infinite triange, would arise after infinite time, Gregory shows that for him the contradiction would arise much sooner.

What answer does Gregory make? Only that, "All should answer [the argument] generally in the aforesaid way."¹¹² In other words, what Gregory said initially in reply to the objection is still valid, namely, supposing God augments the sides of a triangle in the way posited, at no time would there be a triangle, but only a single angle with two infinite sides. This reply is significant, since it provides further evidence of the correlation between the infinite parts of a magnitude and the infinite parts of any stretch of time. Consider, for example, Gregory's claim that at the end of an hour there would be an infinite triangle. Gregory is certain of this only because of the infinite proportional parts of a hour, however. Since there are infinite parts to an hour, no matter by how much the triangles' sides are augmented in each part of an hour, the result will be an infinite magnitude. Further, Gregory's own example, e.g. "in whatever proportional part of the one hour following, God could make a triangle or circle larger according to a certain determinate excess, or that he could augment the given one in that way", evinces the 1:1

¹¹² Ibid., 123: "Respondendum est ergo ab omnibus communiter modo praedicto."

correspondence between the parts of the temporal continuum and the parts of magnitude God generates.

Other passages of *LSS* help us understand why Gregory thinks that temporal continua, like magnitudes, are composed of infinite proportional parts. At d.2, q.1, a.1, Gregory explains that "time" has two meanings. First, "time" may be taken as the duration "of motion, rest, and permanence of a mutable and not-necessarily-existing thing." According to this sense, time "is nothing other than a thing itself continuously moved, resting, or enduring."¹¹³ In a second sense, "Time is taken as some measure or as something whereby the duration of motion or rest can itself be properly measured."¹¹⁴ For Gregory, "time" refers either to the *duration* of things' motion, rest, or permanence, or to the *measure* of things' motion. In what follows, we'll concern ourselves exclusively with the first (objective) meaning of "time."

If Gregory conceives of time as the duration of things' motion, rest, and permanence, one naturally asks what he means by "duration." In the same passage of d.2, q.1, a.1, he explains that the duration of motion is "the thing itself continuously moved or which is continuously moved, about which namely it is true to say it was immediately moved, is actually moved, and also will be moved immediately." He says the same, *mutatis mutandis*, about the duration of rest and existence.¹¹⁵ A thing's duration is *the thing itself* as moved, moving, and about to be moved. Further, "If concerning some thing it is true to say 'this is and immediately will be', but it is not truly said 'this immediately

¹¹³ Ibid., d.2, q.1 (*add.*), a.1, 229: "loquendo de tempore primo modo accepto scilicet pro mora vel duratione motus et quietis ac permanentiae rei mutabilis et non necessario existentis, ipsum nihil aliud est quam ipsamet res continue mota vel quiescens aut durans."
¹¹⁴ Ibid., 219-220: "Alio modo potest accepi tempus pro aliqua mensura seu pro aliquo quo potest proprie

¹¹⁴ Ibid., 219-220: "Alio modo potest accepi tempus pro aliqua mensura seu pro aliquo quo potest proprie mensurari ipsa mora motus et quietis, id est per quod possumus certificari et cognoscere quamdiu aliquid movebatur vel quievit aut duravit."

¹¹⁵ Ibid., 229: "Unde duratio motus est ipsamet res continue mota sive quae continue movetur, de qua scilicet est verum dicere quod immediate movebatur, actu movetur, et immediate etiam movebitur."

was', the thing certainly is not enduring, though it may begin to endure by setting out by the negation of the present."¹¹⁶ In other words, motion, rest, or permanence in two consecutive moments is not sufficient to have duration; something must have been moving, be moving now, and be about to move in order to be temporal, according to Gregory's first sense of time.

In accord with this sense of time, it's easy to see why Gregory regards it as divided into infinite proportional parts the same way magnitudes are divided. When a thing moves continuously through space, the space through which it moves is itself a magnitude divided into infinite proportional parts. If time is the duration of a thing's motion, and the space through which an object moves is divided into proportional parts, then the object's enduring motion is also necessarily divided into infinite proportional parts. Further, even if an object is at rest relative to earth, it is still in motion relative to objects around it that are in motion relative to earth. Thus even when an object is at rest relative to earth, its duration is still divided into proportional parts, just like the magnitude it traverses.

That Gregory's account of time as composed of infinite parts derives from his theory of the infinite division of magnitudes becomes yet clearer if we consider what he says about the nature of an instant. Recall that earlier we showed how, according to Gregory's first meaning of "time", time is the mobile thing itself as moved. A little later at *LSS*, d.2, q.1, Gregory again mentions that meaning of "time." He writes

Time signifies the mobile thing by connoting that it was in the place where it is not, it is in the place where it immediately wasn't nor immediately will be, and immediately will be in the place were it is not. Thus nothing is called "time" unless these three things are true concerning it. But an instant signifies the

¹¹⁶ Ibid.: "Unde si de aliqua re sit verum dicere 'hoc est et immediate erit', non vere autem dicatur 'hoc immediate fuit', ipsa utique non durat, quamvis incipiat durare exponendo per negationem praesentis."

selfsame mobile thing by connoting the place where it is, and additionally by connoting that immediately it wasn't in that place and immediately won't be in it.¹¹⁷

This passage is interesting since it shows that Gregory's notion of an instant is analogous to his notion of time. As time signifies a thing as it is continuously moved through space, i.e. as it was immediately moved, is moving, and will immediately be moved, an instant signifies a moving object by referring to the place where is now, as distinct from where it immediately was and immediately will be. In other words, an instant is a sliver of a moving thing's duration. However, if an instant connotes a place, and place is divided into infinite proportional parts, then an instant must also be divided into infinite proportional parts. One may now apply to time the three conclusions Gregory reached at LSS, d.2, q.2, a.1 apropos of space: a temporal continuum is not composed of indivisibles; every temporal continuum is composed of infinite times; and, finally, there is no such thing as an indivisible instant. The argument of this section of chapter two has yielded an important result for our study of Gregory's discussion of a world from eternity: even an infinitesimally brief instant includes infinite parts, which themselves each include infinite parts. Durationless instants do not exist. Gregory first showed us this when he compared creation to the intension of an accidental form and showed why the increased intensity lacked any first part. Further, we have just seen that since an instant connotes space, it must be composed on infinite proportional parts. In sum, from the infinite divisibility of

¹¹⁷ Ibid., d.2, q.1, a.1, p.2, 258: "Tempus significat mobile connotando ipsum fuisse in loco in quo non est, et esse in loco in quo immediate non fuit nec immediate erit, et immediate fore in loco in quo non est. Ita quod de nullo vere dicitur quod est tempus, nisi haec sint vera de ipso. Instans vero significat ipsum idem mobile, connotando locum in quo est, et cum hoc etiam connotando quod immediate in illo loco non fuit et immediate in eo non erit."

magnitudes, Gregory has deduced the infinite divisibility of even small stretches of time.¹¹⁸

But what does the infinite divisibility of time and instants have to do the with the possibility of an eternal creation? After all, a magnitude infinite with respect to its proportional parts is still finite with respect to its extension. Similarly, how does knowing time is infinite with respect to its parts help us conclude it's possible for the world to have infinite duration *a parte ante*?

To grasp the importance of Gregory's arguments about the composition of continua for the eternity of the world, one only need recall the three main features of Auriol's position against a possible eternal creation: 1) the production of creatures necessarily occurs in an indivisible, durationless instant; 2) all infinities are equal; and 3) it is impossible to traverse an actual infinity. But Gregory's arguments for the infinite divisibility (and the actual division, in God's mind) of continua have disarmed all three of Auriol's theses. For one, instants are not indivisible and durationless; on the contrary, they include infinite parts. Since the "now" during which God created the world had duration and infinite parts of the that "now," there is no contradiction in affirming that God could produce the world during an infinite succession of days. Why not? Since an infinitesimally small part of an instant and a whole day are only quantitively, and not

¹¹⁸ As Maier notes, Gregory of Rimini is not the only medieval thinker to conclude the infinite divisibility of time from the indivisibility of space. Among fourteenth century theologians, she writes, "Es geht ja immer um das Eine…die Widerspruchslosigkeit des Unendlichkeitsbegriffs als solchen aufzuzeigen, und wenn das in einem Fall gelungen ist, so ist damit der Nachweis eigentlich auch für alle andern Fälle geführt – genau so wie die Entscheidung über die Struktur des Kontinuums, wenn sie einmal getroffen ist, in gleicher Weise für räumliche, zeitliche, and intensive Kontinuen Gültigkeit hat. Ueberdies, und das ist von den scholastischen Autoren nur zu oft mit aller Ausführlichkeit dargelegt worden: aus der Möglichkeit der infinitas in actu für eine Grössenart folgt, direkt oder indirekt, dieselbe Möglichkeit für alle andern" (Maier, *Die Vorläufer Galileis*, 204).

qualitatively different. Gregory has shown that a day, a week, or a year are macroversions of what an instant is in microcosm. Both an instant and a day include infinite proportional parts, the only difference being that each proportional part of a day is longer than the corresponding proprtional part of an instant. But if a part of an instant and a day are only quantitatively different, and God creates instants to have infinite parts, there is no reason to think God cannot create an infinite succession of days. This is doubly apparent if one considers that an infinite succession of days is only a syncategorematic infinite (*quotcumque finitis plura*, i.e. *infinitum in fieri*), while an instant contains a categorematic infinity (*plura quotcumque finitis*, i.e. *infinitum in facto esse*). If God can make the latter, *a fortiori* he can certainly bring about the former.

Secondly, Gregory's treatment of the infinite divisibility of magnitudes and time has established that although infinities are unequal with regard to their extension, they are equal with regard to being composed of syncategorematically and categorematically infinite parts. Thus, contrary to Auriol's view, no *inconveniens* arises if the distance the sun has travelled revolving around the earth is somehow "more infinite" than the distance covered by the moon in the same time. With respect to their proportional parts, both infinite distances are equal: it's only that each proportional part of the space traversed by the sun is larger than the corresponding part of the space traversed by the moon.

Thirdly, the argument of chapter two has shown that, for Gregory, actual infinities do exist. This is especially true from God's perspective, since God sees the complete division of every continuum into categorematically infinite proportional parts. Now, since God sees the complete division of a continuum into infinite parts, and God's "seeing" is what produces a continuum's parts, then God is sufficiently powerful to create an actual infinity of beings. Similarly to the way we argued above, we can now say that since, when God produces the infinite parts of a continuum, he produces a categorematic infinity, then *a fortiori* it is possible for God to produce a syncategorematic infinity, i.e. an infinite succession of days.

Having shown how Gregory's account of the composition of continua permits him to diffuse Auriol's arguments against the possibility of a world from eternity, we next proceed in chapter three to discuss how Gregory goes about showing the compatibility of a world from eternity and God's freedom in creating.

Chapter Three – The Relevance of God's Power to Undo the Past for Gregory's Contribution to the Eternity of the World Debate

In chapter three, we pick up a question that arose toward the conclusion of chapter one, namely whether one may reasonably accept the possibility of a world from eternity while also maintaining that God is always free to create or not create the world. This question first presented itself to us through our study of William of Ockham's question Utrum mundus potuit fuisse ab aeterno per potentiam divinam. A few things struck us about Ockham's question that it would be good to recall at the outset of this chapter: first, unlike Henry and Auriol, Ockham approaches the question of a possible world from eternity as a philosopher – he does not take his starting points from Scripture or Christian doctrine. Second, Ockham accepts Henry's view that, if the world has existed from eternity, it exists necessarily. The consequent is radically contrary to any Christian account of creation. Therefore, despite the autonomy Ockham accords to purely philosophical reasoning, because he knows that theologians cannot accept without qualification philosophical conclusions inimical to faith, he concludes only that one can neither demonstrate nor disprove the possibility of a world from eternity on philosophical grounds. Ockham cannot espouse the view that an eternal world is possible, since for him this position (though philosophically defensible) is of a piece with a denial of God's freedom in creating.

In this chapter, I hope to show that Gregory of Rimini's contribution to the eternity of world debate fills a gap left by Ockham. Like Ockham, Gregory sees no purely philosophical reason to exclude a world from eternity. Yet, unlike Ockham, Gregory thinks one can adopt this view without jeopardizing God's freedom in creating.

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How does Gregory argue for the compatibility of an eternal creation and God's freedom in creating? Simply put, Gregory preserves God's freedom in the event of an eternal creation by arguing that God's *absolute* power extends so far as to be able to undo the past. Thus, this chapter includes three steps: first, I will show that, if God can make past events no longer be past, Henry's "necessary creation argument" is effectively disarmed. Next, I will try to show that Gregory in fact holds that view. Thirdly, I will highlight several passages in Gregory's question on the eternity of the world in which his position regarding God's absolute power to undo the past assists him in arguing for the possibility of a world from eternity.

First, let's briefly show why the fourteenth century debate over God's power to undo the past is relevant to the eternity of the world debate. Recall that, according to Henry, in order for God freely to create or not create the world, there must have been some moment preceding creation in which God could have impeded the world's existence. For three reasons Henry argues that, if the world has always been, there could have been no such moment. First, *posita hypothesi*, there was no moment before eternity when God could have impeded the world, since there is no "before" eternity. Second, since even God is subject to the principle of non-contradiction, God cannot make the world not exist while it exists. Finally, after the world has been, and for as long as it was, God is powerless to impede its past existence. As Henry writes

According to the Philosopher, a being that exists, when it exists exists necessarily, so that as long as it exists there is no power to make it not exist, neither on the part of the being itself, nor on the part of any efficient cause, since nothing has power to make contradictory things be simultaneously. And similarly concerning what was: for as long as it was, its having been is necessary.¹¹⁹

¹¹⁹ Henricus de Gandavo, *Quodlibet I*, q.7-8, 41: "Secundum Philosophum esse quod est, quando est, necessario est, ita quod pro tempore quo est, non st potentia ut non sit, neque ex parte ipsius entis neque ex

If a creature exists at t_1 , then even if God destroys it at t_2 , this does not make it not to have existed at t_1 . If a creature exists at t_1 , it will always have existed then. Thus if the world has existed from eternity, then its having existed at infinite past moments is still necessary *today*. No change that God effects *today* can eliminate the necessity whereby the world existed before today, if it has always existed.

But what if God is powerful enough to undo the past? In that case, even if the world has existed from eternity, God no longer created it necessarily. To show why not, let's posit that before today the world has always existed. Nevertheless, if God can undo the past, then he could make the world not to have existed at any and every past moment. For example, God could now bring it about that there was no American Revolution, for he can make the events of July 4, 1776 never to have been. Thus even now the past existence of the world would not be necessary. Moreover, if God can make past events not to have been, he could have exercised that power on *any* day prior to today, which means that at no past moment has the world's existence been necessary. At any past moment t_x , God could have undone the world's past existence at any time prior to t_x , and thus rendered its existence at t_x contingent. Simply put, if God can undo the past, then a possible eternal creation would in no way jeopardize God's freedom in creating. In other words, Henry of Ghent's principal argument against the possibility of a world from eternity fails.

Now our burden becomes showing that Gregory of Rimini in fact holds this view. It's not entirely clear which if any of Gregory's medieval predecessors affirmed the view that God has the power to undo the past. The claim that God can change the past is

parte alicuius efficientis, quia super hoc nulla est potentia, quia esset ad contradictoria facere simul esse. Et similiter de eo quod fuit: pro tempore quod fuit, necessarium est fuisse."

traditionally attributed to Peter Damian in his *Letter on Divine Omnipotence*, but scholarly opinion is divided in that regard.¹²⁰ As Gaskin indicates, that God can make the past not to have been was by no means a popular position in the Middle Ages.¹²¹ Gregory broaches the question of whether God can undo the past in *Lectura super primum* (henceforth, *LSP*) d. 42-44, q.1, add.155.¹²² Admittedly, what Gregory says there is not unambiguous.¹²³ Part of what I hope to show in chapter three is that what Gregory says later about the eternity of the world clarifies his views regarding God's power to make a past event not to have been. In any case, according to W.J. Courtenay, to some extent the perceived ambiguity of Gregory's position owes more to how scholars have viewed Gregory in relation to other fourteenth century figures than to what Gregory actually says.¹²⁴

¹²⁰ For example, Marenbon interprets Peter as affirming the logical impossibility of any agent undoing the past in the sense of making an event not to have happened after it has happened. After Rome comes to be, not even God can make it not to have existed (John Marenbon, "Philosophy and its Background in the Middle Ages", in *Medieval Philosophy*, ed. John Marenbon [London: Routledge, 1998]: 112-113). In contrast, Gaskin argues that Peter isn't bothered by the contradictions involved in God's power to undo the past. Since God created the order in which the principle of non-contradiction holds, by his absolute power God can bring about contradictory things (Richard Gaskin, "Peter Damian on Divine Power and the Contingency of the Past," *British Journal of the History of Philosophy* 5 [1997]: 234).

¹²¹ Gaskin, "Peter Damian on Divine Power and the Contingency of the Past", 229.

¹²² Gregorius Ariminensis, OESA, Lectura super primum et secundum Sententiarum: Tomus III, Super Primum (dist. 19-48), ed. A. Damasus Trapp et Venicio Marcolino (Berlin: Walter de Gruyter, 1984), d.42-45, q1, additio 155: "Tertia conclusio est quod quamlibet rem praeteritam potest deus facere non fuisse."
¹²³ For example, at one point in d. 42-44, Gregory lists five argumenta contra tertiam conclusionem additionalem, i.e. against the conclusion that God can make a past event not to have been, which he then leaves unanswered (see Gregorius Ariminensis, Lectura super primum, d.42-44, q.1, 367). Naturally, some readers may interpret Gregory's leaving arguments against the conclusion unanswered as uncertainty regarding God's power to undo the past.

¹²⁴ Courtenay explains that before the mid-twentieth century, scholars typically viewed William of Ockham as a radical whose critical and skeptical views in metaphysics and epistemology destroyed the synthesis of faith and reason achieved in the latter thirteenth century. Scholars like Philotheus Boehner worked to correct this view, with the result that Ockham's thought came to be viewed "as a continuation, and in some areas, a further refinement of thirteenth century thought rather than a rejection of past approaches." One consequence of Ockham's rehabilitation, however, has been that figures who disagreed with Ockham or the Ockhamists came to be seen as the true radicals. One of these figures is John of Mirecourt, who following lectures he gave at Paris in the academic year 1344-45, was accused and later condemned for having taught that God is able to undo the past. This involves Gregory inasmuch as A.D. Trapp has claimed that Gregory was one of the key figures associated with the condemnation of Mirecourt ("Augustinian Theology of the Fourteenth Century: Notes on Editions, Marginalia, Opinions, and Book-Lore", *Augustiniana* 6 [1956]:

For Gregory of Rimini, God is able to make a past event not to have been in virtue of his *potentia absoluta*. Since Courtenay regards Gregory's explanation of the distinction between *potentia Dei absoluta* and *potentia Dei ordinata* as perhaps the clearest of all theologians of the thirteenth and fourteenth centuries,¹²⁵ let's begin our exposition of Gregory's position by examining his account of that distinction. First, Gregory is quick to say that *potentia Dei absoluta* and *potentia Dei ordinata* are not two separate powers in God.¹²⁶ To posit two such powers would run the risk of compromising the truth of God's simplicity. Instead, the distinction indicates that God's power extends beyond what he eternally wills. In other words, while the *potentia Dei ordinata* is nothing other than God's eternal, unchanging will, the *potentia Dei absoluta* signifies the endless worlds, things, and events God could have willed but doesn't.¹²⁷ While the *potentia Dei ordinata* exists actually and explains the world and all its positive features, the *potentia Dei absoluta* exists only in potentiality.

Gregory puts flesh on this rather abstract distinction by means of the following

example:

Simply speaking, Christ was able not to become incarnate and not to die... and yet he was not able [not to become incarnate] while his order stood, whereby he eternally proposed through his death to redeem the human race. For these things are incompatible: "God proposed that he would die" and "God will not die", referring to the same time. But although these are incompatible, still because the

^{146-274).} Thus it is thought that since Mirecourt held that God could undo the past, and Gregory worked for his condemnation, Gregory could not have held that God could make a past event not to have been. As Courtenay shows, however, a close reading of Mirecourt's *First Apology* and *Lectura* show that Mirecourt did not hold the view commonly ascribed to him. Moreover, Trapp's evidence for Gregory's involvement in the condemnation is tenuous (William J. Courtenay, "John of Mirecourt and Gregory of Rimini on Whether God can Undo the Past," *Recherches de Théologie Ancienne et Médiévale* 39 [1972]: 224-256; 40 [1973]: 147-174).

¹²⁵ Courtenay, "John of Mirecourt and Gregory of Rimini," 158.

¹²⁶ Gregorius Ariminensis, *Lectura super primuum Sententiarum*, d.42-44, q.1, 368: "Non quod in deo sint duae potentiae, una ordinate, alia absoluta."

¹²⁷ Ibid.: "Illud dicitur deus…posse de sua potentia ordinata, quod potest stante sua ordinatione et lege aeterna, quae non est aliud quam eius voluntas, qua aeternaliter voluit haec vel illa et taliter vel taliter se facturum, illud autem dicitur posse de potentia absoluta, quod simpliciter et absolute potest."

ordering is not necessary...therefore, that which is only impossible by the supposition of the ordering, as incompatible with it, is not absolutely impossible, but possible, and simply speaking God is able to do it.¹²⁸

For Gregory, God's absolute power transcends what one may know of it from any contingent, historical ordering God has instituted. Of course, even God's absolute power is subject to the principle of non-contradiction, since God cannot at the same time propose that Christ not die and that Christ die for the salvation of the human race. Nevertheless, the order God has *de facto* willed, according to which human beings are free, and the death of God's Incarnate Son was necessary to rectify humans' abuse of their freedom, is contingent simpliciter. Therefore, Gregory notes that strictly speaking, i.e. according to God's absolute power, the Son of God could have forgone the Incarnation – nothing compelled him to save human beings in this fashion or to save them at all, for that matter. Nevertheless, *secundum quid*, i.e. supposing God's eternal decision to save the human race by means of his Son's death, the Incarnation and Death of Christ are necessary. Since that necessity is relative to other decisions God has made, one must be careful not to confuse the "limits" of God's power relative to the order God has willed with the limits of God's omnipotence, *simpliciter*. In Gregory's view the former set of limits are self-imposed by God.

As I already noted, even as he distinguishes God's absolute and ordained power, Gregory admits that even God cannot posit an act that runs afoul of the principle of noncontradiction. In fact, the principle challenge Gregory faces in convincing us that God

¹²⁸ Ibid.: "Constat quod simpliciter loquendo Christus potuit non incarnari et non mori…et tamen istud non poterat stante ordinatione sua, qua aeternaliter proposuit per suam mortem redimere genus humanum. Sunt enim haec incompossibilia 'deus proposuit se moriturum' and 'deus non morietur' referendo ad tempus idem. Quamvis autem ista sint incompossibilia, quia tamen illa ordinatio non est necessaria…ideo illud, quod solum est impossibile ex supposition ordinationis, utpote ei incompossibile, non est absolute impossibile, sed possibile, et simpliciter loquendo illud deus potest facere."

can undo the past in virtue of his absolute power consists in showing there is no contradiction in causing a past event not to have occurred.¹²⁹ Let's look at some of the arguments whereby Gregory tries to prove that it does not involve a contradiction for God to undo the past. In the second argument Gregory advances to prove his thesis, he posits the counterfactual that

God did not will to produce Adam; therefore, God did not produce Adam, and further, Adam was not. The consequences are necessary; and the first antecedent is possible, therefore also the last consequence. And further it follows: it is possible that Adam was not; therefore, God is able to make it that Adam was not. But that the first antecedent is possible, is proved, because everything God was able to will from eternity, he is now able to have willed from eternity, and because he was able not to will, he is able not to have willed. Therefore, although from eternity he willed to produce Adam, nevertheless he is able not to have willed, and can have willed not to produce, as even he was able from eternity.¹³⁰

The first part of the argument is straightforward enough: presuming God didn't want Adam to exist, therefore Adam wasn't. The conditional necessity of the both consequents, i.e. "God did not produce Adam" and "Adam was not" points to Adam's contingency – his existence depends on God's will. Gregory's next move is more controversial, however. He constructs a syllogism, the antecedent of which is "it *is* possible that Adam was not." It's significant that Gregory uses the present tense of *esse*.

Although the first syllogism proved that it was possible for Adam not to be, it is by no

¹²⁹ Along with a host of medieval thinkers, Thomas Aquinas denies God can undo the past. At *Summa theologiae* I, q.25, a.4, he argues that making a past event not to have been involves a contradiction, since once a thing happens, its having happened will necessarily always be. In the same article, in the reply to the first objection, Aquinas compares undoing the past to raising the dead. He points out that raising the dead does not undo the past, since it's still true that the now-living person once was dead. Though raising the dead is impossible for a natural power, it is not beyond God's power. Undoing the past, since it involves a contradiction, surpasses even the power of God.

¹³⁰ Gregorius Ariminensis, *Lectura super primum Sententiarum*, d.42-44, q.1, 362: "Deus non voluit Adam producere; igitur deus non produxit Adam, et ultra, igitur Adam non fuit. Consequentiae sunt necessariae; et primum antecedens est possibile, igitur et ultimum consequens. Et ultra sequitur: Possibile est Adam non fuisse; igitur deus potest facere quod Adam non fuerit. Quod autem primum antecedens est possibile, probatur, quia omne, quod deus potuit ab aeterno velle, potest nunc ab aeterno voluisse, et quod potuit non velle, potest non voluisse. Quamvis igitur ab aeterno voluerit producere Adam, potest tamen non voluisse, et potest voluisse non producere, sicut ab aeterno potuit."

means self-evident that it is *now* possible for Adam not to have been. To prove the antecedent Gregory claims, "Everything God was able to will from eternity, he is now able to have willed from eternity." This claim is interesting, to say the least, for it shows just how thick is Gregory's notion of divine omnipotence.¹³¹

For Gregory, what God did vis-à-vis creatures yesterday in no way limits his power today. Gregory's claim that "everything God was able to will from eternity, he is now able to have willed from eternity," reveals that his theory of divine omnipotence is connected to his views with respect to divine immutability: since before God willed to create Adam, he was able not to will to create Adam, and God's power (which is identical with God) is immutable, then even after God created Adam, he remains eternally able not to have willed Adam. Being able to will x (or, alternatively, not to will x) belongs to God's immutable essence, such that even after God posits an act of his will, resulting in the existence of x, God can still will (and so bring it about) that x has never existed. Naturally, understanding Gregory's argument requires us to appreciate the distinction between God's ordained and absolute power. Gregory doesn't think there is any risk of God destroying Adam's past existence. God has created an order in which the past does not cease to be past. Nevertheless, that order is not the only one God could have created, and since God retains now the same prerogatives he has had from eternity, e.g. to will that Adam never was, even now God can will that Adam never was.

Next, Gregory elaborates on his point with another example. He writes, "Moreover, even though [God] willed from eternity to produce the Antichrist, still he is

¹³¹ Most medieval thinkers, e.g. Henry of Ghent, Peter Auriol, and William of Ockham, argue that although the "past-ness" of a past event is only *conditionally* necessary, it is still necessary. For example, although Adam's existence is not necessary *simpliciter* – God could have willed not to produce him – after God produced Adam, God's power is limited as a result of that decision. Although God may stop causing Adam to exist, God cannot make it so that Adam never was.

able never to have willed to produce [the Antichrist], and it is not less possible for him never to have willed to produce Adam than the Antichrist.³¹³² Here the argument is similar to what we saw above: God has eternally willed to produce the Antichrist; but this act of God's will is not identical with God's essence – willing the existence of Antichrist is not part and parcel of being God. On the other hand, the power either to will or not to will the Antichrist pertains to God's essence. Since God's *de facto* willing of the Antichrist does not change God, it is still possible for him never to have willed the Antichrist. Then an objection is raised: God's ability to cause Adam not to have been, on the one hand, and God's ability never to produce the Antichrist, on the other, are not of the same order, since while Adam has already been, the Antichrist hasn't yet existed. Adam's past existence is conditionally necessary, while the Antichrist is a future contingent being. Therefore, that God can undo the past and that he can impede the future are substantially different claims.¹³³

Thus Gregory's task is to show that past and future events are equally contingent. Moreover, he also still has to settle the issue of whether undoing the past involves a contradiction. How can something that has happened be made not to have happened? Would such an eventuality amount to making something both to have happened and not to have happened? Gregory attempts to answer both objections in the following text, in which he seeks to explain under what circumstances it would be impossible for God not to have willed to produce Adam:

If it were impossible that God didn't will to produce Adam, this would not be because he produced Adam, but because he willed to produce [Adam] and it was

¹³² Gregorius Ariminensis, *Lectura super primum Sententiarum*, d.42-44, q.1, 362: "Item, non obstante quod ab aeterno voluit producere Antichristum, adhuc potest numquam voluisse producere, et non minus est sibi possibile numquam voluisse producere Adam quam Antichristum."
¹³³ Ibid.

necessary that he willed. Because, grant *per impossibile* that it is necessary that he produced, and nevertheless it is not necessary that he willed to produce, still it will be possible that he did not will to produce. But it is established that it is not less true that God willed from eternity to produce the Antichrist than that he willed to produce Adam. Therefore, as the one is contingent, so is the other.¹³⁴

Under what circumstances would it be impossible for God *today* not to have willed to produce Adam? Gregory claims that, if God is unable today not to have willed to produce Adam, it's not because God already produced him. Instead, it would be impossible only if, subsequent to God's having willed to produce him, it were still necessary for him to have thus willed. In other words, the impossibility requires that in virtue of God willing to produce Adam at t_1 , God would necessarily will that at t_2 , t_3 , t_4 , etc., Adam was produced at t_1 . For Gregory, this cannot be the case. Now, of course, if God wills to produce Adam at t_1 , it is impossible that he should not will to produce Adam at t_1 , since according to the principle of non-contradiction, something cannot be both be and not be *at the same time* and in the same respect. But the conditional necessity of God's willing to produce Adam at t_1 does not perdure subsequently. If God wills to produce Adam at t_2 , and t_3 are not simultaneous, there is no logical conflict in any of this.¹³⁵

To drive the point home, Gregory posits a counterfactual: for the sake of argument, grant that it is necessary that God produced Adam. Even in that case, Gregory argues, "it is not necessary that he willed to produce [Adam]." On my reading, Gregory

¹³⁴ Ibid., 362-363: "Si impossibile esset deum non voluisse producere Adam, hoc non esset, quia produxit Adam, sed quia voluit producere et necesse esset ipsum voluisse, quia, da per impossibile quod necesse sit ipsum produxisse, et tamen non sit necesse ipsum voluisse producere, adhuc erit possibile ipsum non voluisse producere. Sed constat quod non est minus verum deum ab aeterno voluisse producere Adam. Sicut igitur illud est contingens, ita est istud."

¹³⁵ In other words, as Gaskin argues ("Peter Damian on Divine Power and the Contingency of the Past", 234) apropos of Peter Damian's discussion, for Gregory, "Power over the past, if God had it, would be the power, given Pp [that some event p occurred in the past], to bring about not – Pp, not in the *composed* sense (i.e. not – Pp as well as Pp), but in the *divided* sense (i.e. not – Pp instead of Pp).
means that for God to do something *when* God does not will to do it involves no *per se* contradiction. Though such a scenario may be absurd for other reasons, there is nothing contradictory about a being performing an operation while at the time not willing to do so. Thus *a fortiori* there is no contradiction in saying that God, *after* willing to produce, wills that Adam never was. Of course, God is atemporal - his acts of willing do not temporally succeed one another – so we need to rephrase the scenario Gregory is proposing to accommodate God's atemporality. I take Gregory to mean that it is possible for God, in a single eternal act of willing, to will that Adam is produced at t_x and that at some later moment t_y Adam shall never have existed. Furthermore, since Gregory regards this scenario as involving no contradiction, the past production of Adam and the future production of the Antichrist remain equally contingent events. Although God wills both from eternity, since his will may stipulate that what has come about will later never have been, a future event is no more contingent than a past one.

It is not clear that Gregrory argues convincingly that the power he attributes to God over the past does not violate the principle of non-contradiction. For the sake of argument, let's concede Gregory's point that God's power to undo the past does not imply a contradiction arising in time. After all, Gregory thinks that, in the event God does undo some feature of the past, that feature would not have been and not have been at the same moment t_x . Nevertheless, doesn't Gregory's view imply that there is a contradiction in God's eternity? If I have interpreted Gregory correctly as claiming that "in a single eternal act of willing," God can "will that Adam is produced at t_x and that at some later moment t_y Adam shall not have existed at t_x ," doesn't this mean that God eternally wills both to produce Adam at t_x and not to produce him then? Luckily, for our purposes it's

not necessary to answer these questions. What is important for this study, and what I hope to have shown, is that Gregory attributes to God the power to render a past event not past. Gregory's views about God's power over the past (even if he hasn't convinced us that God has such power) permit him respond to Henry of Ghent in a way not open to Ockham.

Having shown that Gregory does advocate for God's ability to undo the past, we proceed to connect the argument of LSP, d.42-44, q.1, to LSS, d.1, q.3, Gregory's treatment of the possibility of an eternal creation. Recall that the primary concern of our study is how Gregory's question on the eternity of the world answers Henry of Ghent's "necessary creation argument." Significantly, the counterfactual Gregory posits in order to show that Adam's past existence remains contingent involves God creating Adam necessarily. As we've seen, Gregory's purpose for the counterfactual is to show that Adam's past existence is every bit as contingent as a future event. This has important implications for our study of Gregory's contribution to the eternity of the world debate. The "necessary creation argument", both in its original version in Henry, and as repeated by Auriol and Ockham, claims that an eternal world implies a necessary creation. This is bothersome, since a necessary creation implies that God's will is under compulsion to create. However, Gregory's argument at LSP, d.42-44, q.1 has attempted to establish that God remains free to undo the past existence of his effects. Therefore, neither does the endless past existence of the whole world restrict God's will from willing that it not be past.

Shortly after explaining under what circumstances it would be impossible for God not to have willed to produce Adam, Gregory tells us that God's power to undo the past

will be touched upon again in book II of the *Lectura*.¹³⁶ It should be no surprise to us that the portion of *LSS* to which Gregory directs is none of than d. 1, q.3, the question on the eternity of the world. Thus, in the final section of chapter three we return to that text, in order to show how Gregory's account of God's ability to undo the past influences his argumentation on behalf of the possibility of an eternal creation. At *LSS*, d.1, q.3, the first and most manifest allusion to God's power to undo the past comes in the *quarta conclusio* of article one. Gregory writes

A fourth conclusion can probably be posited, if it is held that the past can not have been through divine power, as some teachers have held and some still hold, as was touched upon in Book I, dist. 42, q.1. And that fourth conclusion (which, nevertheless, I do not assert) would be: That it is possible even now that something other than God has been from eternity, and I speak always concerning God's absolute power.¹³⁷

Initially, one is struck by the tentativeness with which Gregory proposes the fourth conclusion. He insists that he is not asserting it, but only that it "can probably be posited." Gregory's hesitation in this passage is all the stranger given that the *quarta conclusio* is the the *terminus ad quem* of the preceding conclusions Gregory proposes in d.1, q.3, a.1. So how does one explain the way Gregory distances himself from this important thesis?

On account of political developments at the University of Paris after Gregory lectured on the *Sentences* but before the *Lectura* was published, it must have appeared prudent to him not to own the fourth conclusion too strongly. On the basis of a few pieces of evidence (including a 12 January 1345 letter of Clement VI requesting that Gregory be

¹³⁶ Gregorius Ariminensis, Lectura super primum Sententiarum, d.42-44, q.1, 364.

¹³⁷ Gregorius Ariminensis, *Lectura super secundum Sententiarum*, d.1, q.3, a.1, 104: "Quarta conclusio posset probabiliter poni, si teneretur quod praeteritum potest per divinam potentiam non fuisse, sicut aliqui doctores tenuerunt et adhuc aliqui tenent, ut in Primo distinctione 42 quaestione 1 tactum est. Et esset conclusio ista quarta quam tamen non assero: Quod possibile est nunc etiam aliquam aliam rem a deo fuisse ab aeterno, et loquor semper de potentia dei absoluta."

promoted to *Magister* at Paris), Chris Schabel thinks Gregory lectured on the *Sentences* in 1343-44, but that he remained in Paris revising the *Lectura* until late 1346, by which time he was back in Rimini.¹³⁸ As Courtenay has already brought to our attention, John of Mirecourt lectured on the *Sentences* the year after Gregory, and his views regarding God's power to undo the past drew considerable fire from other members of the Theology faculty, finally leading to a condemnation issued by the Chancellor Robert de Bardis in 1347.¹³⁹ Given that the prosecution of Mirecourt must have occurred during the time Gregory was revising the *Lectura* for publication, and the fourth conclusion relies on the notion that God can undo the past, it's understandable that Gregory would only rehearse (and not assert) the fourth conclusion.

Nevertheless, Gregory proposes, albeit meekly, that *even now* God through his absolute power can cause the world to have been from eternity. How does he prove it? He writes, "From eternity God can have willed to make A…Therefore God can [*potest*] have made A from eternity." Proving the consequent of this little argument is simple, for if God cannot make from eternity what he has willed from eternity, his will is not omnipotent. Since God is omnipotent, the consequent is clear.¹⁴⁰ The truth of the antecedent ("From eternity God can have willed to make A") is not so evident. Notice that Gregory does not say, "From eternity God could have willed to make A"). Instead, the

¹³⁸ Schabel, Christopher. "Gregory of Rimini." In *Stanford Encyclopedia of Philosophy*, Stanford University, 1997-. Article published September 2, 2007.

http://plato.stanford.edu/archives/sum2010/entries/gregory-rimini/.

¹³⁹ As Courtenay argues ("John of Mirecourt and Gregory of Rimini," 236), Mirecourt himself did not hold that God can undo the past. It seems instead that the theological commission that tried Mirecourt issued the condemnation because he did not oppose sufficiently strongly the view that God can undo the past (256).

¹⁴⁰ Gregorius Ariminensis, *Lectura super secundum Sententiarum*, d.1, q.3, a.1, 107: "Patet consequentia, quia sequitur: Deus voluit ab aeterno fecisse A, igitur deus ab aeterno fecit A. Alias sua voluntas non fuisset omnipotens."

antecedent claims that, even though God did not make A from eternity (after all, Christians know from divine Revelation that God created the world in time), even now he still can. In other words, God can undo his past work to make a world that always has been.

To grasp meaning of the antecedent, we have to know the precise significance of the phrase *facere* (or *producere*) *ab aeterno*. Just a little later in the same question, Gregory unpacks the meaning of this phrase, when he says, "'To have made from eternity' is not to have produced first in any eternal instant, but it is to have produced before any finite time [*ante quodlibet tempus finitum*], actual or possible or imaginable. From this it is manifestly denied that there was any such first eternal instant."¹⁴¹ Gregory explains that "creation from eternity" does not signify creation in an instant before time taken as a whole. Instead, the phrase signifies that God creates before any or whatever time (*ante quodlibet tempus*). In other words, events occurring at t_1 , t_2 , t_3 ... are each immediately caused by God. For Gregory, God's creative activity works something like the following mathematical expression:

$$3(2+6+7)$$

As any third-grader knows, to calculate the numerical value of the expression, she needs to distribute 3 to all three numbers inside the parentheses:

$$3(2) + 3(6) + 3(7)$$

When Gregory says that God creates *ante quodlibet tempus*, he means that God distributes his power through time such that it precedes each temporal event taken individually, just as 3 is distributed individually to each number within the parentheses.

¹⁴¹ Ibid.,109: "'Ab aeterno produxisse' non est produxisse primo in aliquo instanti aeterno, sed est ante quodlibet tempus finitum actuale vel possibile vel imaginabile produxisse. Ex quo manifeste negatur fuisse aliquod tale primum instans aeternum."

Gregory denies that God created the world in a "first eternal instant." On the contrary, God creates every temporal thing or event immediately. Since God distributes his creative power in this way, i.e. immediately before each temporal event, there is no philosophical reason why that "distribution" could not have taken place from an endless past. Thus the meaning of the antecedent, "From eternity God can have willed to make A," is: "Even though God didn't create A before any finite time (actual, possible, or imaginary), he still can even now."

Unsurprisingly, in support of the antecedent Gregory quotes the same text from *Sentences* I, d.43, which he had earlier given as evidence that God is able to undo the past. In that passage Gregory quoted the Lombard as saying that God "has the power of willing both now and from eternity, what nevertheless he does not now will, nor willed from eternity."¹⁴² For Gregory, since God could have produced something other than himself from eternity (the third conclusion of article 1), but he could have produced nothing except by willing, then God could have willed to produce A from eternity. Moreover, as we saw from the discussion of God's power to undo the past, for Gregory God's past creaturely effects do not limit his power vis-à-vis creatures today. God's creating doesn't diminish his omnipotence in any way. Therefore, though God did not create the world from eternity, he could have, and thus still can now.

Gregory's claim that God's omipotence extends so far as to be able even now to create a world from eternity is critical for our account of how his question on the eternity of the world answers Henry of Ghent and fills a gap left by Ockham. For Ockham, there was no purely philosophical answer to Henry's "necessary creation argument." But this is precisely what Gregory's application of his views about God's power to undo the past to

¹⁴² Ibid., 107.

the question of the eternity of the world offers us. Simply put, Gregory's fourth conclusion shows us that the possibility of a world from eternity does not compromise God's freedom in the act of creating. If God can even now render "not past" his having created the world in time and instead produce a world from eternity, then in the event that God had created a world from eternity, he could likewise undo the past to create a world that began in time. Contrary to what Henry of Ghent, Peter Auriol, and William of Ockham all thought, if there had been no instant "before" God created the world, the world's existence would be nonetheless contingent, since at any instant (including the present) God was free to make the world's past existence not to have been.

Other passages of *LSS* d.1, q.3 give strong evidence of the relevance of Gregory's views on God's power to cancel the past for his position regarding the possibility of an eternal world. For example, in article 1 Gregory confronts the following objection:

If God could produce B from eternity, he could produce B from eternity either before he produced B, or when he first produced B, or after he produced B: Let B be some singular produced new by God... It cannot be said that he could before, because then it follows that he could in some instant before he could. But this consequent is impossible, since then in this instant he was able to do the same thing, sc. produce B from eternity. Neither can it be said that then when he produced, because, let that instant be grasped and let it be the present instant, it follows that now God can have produced B from eternity, which is false: then because this cannot be through any sudden or successive action. Then because God cannot now make it so that the past did not exist, therefore neither can he make it so that "what was not the past before A" is the past before A. And for the same reason it is clear that not after he produced B, could he produce it from eternity.¹⁴³

¹⁴³ Ibid., 102: "Si deus potuit B producere ab aeterno, aut antequam produxit B, potuit producere B ab aeterno; aut quando primo produxit B, potuit, etc; aut postquam produxit B, potuit etc: Sit B aliquod singulare de novo productum a deo…Non potest dici quod ante, quia tunc sequitur quod in aliquo instanti ante potuit. Hoc autem consequens est impossibile, quia tunc in hoc instanti posset idem facere scilicet producere B ab aeterno. Nec potest dici quod tunc, quando produxit, quia, accipiatur illud instans et sit instans praesens, sequitur quod nunc potest deus produxisse B ab aeterno, quod est falsum: Tum quia hoc non potest per actionem aliquam subitam neque successivam. Tum quia deus non potest nunc facere praeteritum non fuisse, igitur nec potest facere 'non praeteritum ante A' fuisse ante A. Et per idem patet quod non postquam produxit B, potuit ipsum producere ab aeterno."

This objection is strikingly similar to Henry of Ghent's argument without the consequence that God must have created the world necessarily. Gregory posits that God created B de novo, i.e. at some instant B was new. Now if God could create B from eternity, he would have to create it before, when, or after he in fact created B: not *before*, since what begins to exist before one instant necessarily begins in another (albeit earlier) instant, which implies that it is not from eternity. Again, God could not have produced B from eternity when he produced it, because nothing that begins in any instant "when" is from eternity. Finally, not after he created it, since that would require something impossible, namely, that God cancels the past, according to which B begins to exist de *novo* in time. This argument is compelling for the same reason as Henry's "necessary" creation argument": both arguments challenge us to locate an instant in which God could have created the world from eternity, and both conclude that no such instant possibly exists. While Henry's argument concludes that if God created the world from eternity, there was no instant when God worked freely, the upshot of the present argument is that the world was created in an instant, and since no instant is from eternity, God could not have produced the world from eternity.

In his answer to the argument, Gregory admits it's the most difficult of the fifteen he entertains in this question.¹⁴⁴ He then argues that if one accepts the fourth conclusion posited above, i.e. "That what wasn't can have been through divine power," then "It must be said that before he produced B, when he produced, and similarly after, he could have produced [B] from eternity; and it must be conceded that even now he can have produced

¹⁴⁴ Ibid., 116: "Ad quartum decimum, quod pro certo inter omnia est difficilius meo iudicio..."

from eternity."¹⁴⁵ Interestingly, as we noted above with respect to Gregory's criticism of some of Auriol's arguments against the possibility of a world from eternity, Gregory's answer to the above argument does not contest its key premise that the world was created in an instant. Instead, Gregory meets the argument on the objector's terms. He admits for the sake of argument that the world was created in an instant, but argues that if God can undo the past, then at any instant relative to when he produced the world (*antequam*, quando, postquam), God can have created the world from eternity. For example, let's posit that the universe begin 100 billion years ago, implying that there was a considerable incubation period before the "Big Bang" occurred merely 14 billion years ago. For Gregory, in virtue of God's absolute power, today God can cancel the void that preceded the universe's production, such that 100 billion years ago the world had already existed from eternity. At the conclusion of his answer, Gregory remarks, "Let the one who doesn't like this answer find one better."146

Finally, then, let's review the course of the this chapter's argument. First, we explained how Henry's necessary creation argument is premised on the absolute necessity of the past as past, such that if the past were contingent even according to God's potentia ordinata, Henry's argument would no longer succeed. In fact, it was Ockham's agreement with Henry's view that the past is absolutely necessary as past that kept him from seeing a way around the purported logical connection between a world from eternity and a necessary creation. Then I argued that for Gregory, although according to the order God has instituted, the past is necessary as past, God is able to

¹⁴⁵ Ibid.: "Si teneretur quarta conclusio supra posita scilicet quod illud quod non fuit, potest per divinam potentiam fuisse, tunc esset dicendum quod, et antequam produxit B et quando produxit et similiter post, potuit ipsum produxisse ab aeterno; et concedendum quod etiam nunc potest produxisse ab aeterno."¹⁴⁶ Ibid.: "Cui non placet haec responsio, procuret meliorem."

undo the past by his *potentia absoluta*. Since Gregory is *not* saying that God *praeterito supposito* can make the past not to have been, for him no contradiction arises in God's undoing the past. Thus a past event is every bit as contingent as a future event. Finally, we noted how Gregory applies the argument of *LSP* d.42-44, q.1 to *LSS* d.1, q.3. Since a key premise of Henry's necessary creation argument doesn't hold, i.e. that the past as past is absolutely necessary, in the event that God had created the world from eternity, at any time he could make the world's eternal past existence not to have been. Therefore, an eternal creation does not imply that God created the world necessarily. In sum, by showing how God could *freely* produce a world from eternity, Gregory has filled in a significant gap left by Ockham.

Conclusion

Finally, I wish to conclude my work by explaining what I think this thesis has achieved. Although its topic has been the eternity of the world in Gregory of Rimini, the thesis has logged (albeit partially) the developing importance of a single medieval argument against the possibility of an eternal creation, namely Henry of Ghent's "necessary creation argument." We've followed how three medieval thinkers spanning a period of about seventy years have answered Henry's argument. I've tried to show that one can appreciate Gregory of Rimini's contribution to the eternity of the world debate only if one recognizes how Gregory answers Henry (his remote interlocutor) by correcting and developing the answers of Peter Auriol and William of Ockham (his more proximate interlocutors).

An important, though unsurprising achievement of this thesis is the way it shows the intersection of a few important debates at Paris in the first half of the fourteenth century. Although in 1277 Etienne Tempier condemned the proposition that an eternal world is possible, theologians and philosophers continued to debate the issue. As was the case even before the condemnation of 1277, the debate over the eternity of the world in the first half of the 1400's was entangled with other important questions of the day. This thesis has touched upon two of them: first, the question (beloved of ancient philosophers) of whether spatial and temporal continua are composed of indivisible units. Though in fact Henry of Ghent was no atomist, his "necessary creation argument" implied a form of temporal atomism, a feature that emerged clearly in Peter Auriol's arguments against the possibility of an eternal creation. In his *Lectura* on the *Sentences*, Gregory of Rimini argued that magnitudes and temporal continua, even when completely divided, still

include infinite parts, which themselves each contain infinite parts. I hope to have shown that Gregory's account of the composition of continua permits him to correct Auriol's view that creation necessarily occurred in an indivisible instant. For Gregory, since even an instant includes infinite proportional parts and thus no first part, there is no purely philosophical reason that the whole of time cannot span infinite days without any one day being first.

Secondly, I have been at pains show the import of the debate over God's power to undo the past for Gregory's question on the eternity of the world. Ockham agreed with Henry that an eternal creation implies creation by necessity partly because he thought Henry was correct that even God cannot change the past. For that reason, although his philosophical argumentation merits a strong conclusion, Ockham did not say that a world from eternity is philosophically possible (period!). In the wake of Henry's necessary creation argument, arguing for the philosophical possibility of an eternal creation required reconciling the eternity of the world with God's freedom in creating. This is what Gregory tried to accomplish in arguing that God can undo the past. Even if we're not entirely convinced by Gregory's argument in that regard, we must admit that attempting to safeguard divine freedom in this way represents a genuinely new feature of the debate about the eternity of the world. I know of no other figure who adopts that strategy to answer Henry.

Most importantly, however, this study has illustrated the developing realtionship between theological and philosophical thinking in the first half of the fourteenth century. Interestingly, the distance between philosophy and theology grew because theologians like Henry of Ghent and Peter Auriol smuggled properly theological principles, i.e.

principles derived from divine Revelation, into their otherwise philosophical arguments. If one studies earlier contributions to the eternity of the world debate, one sees that the explict appeal of fourteenth century thinkers to principles of faith was a novelty. For example, consider the arguments of Bonaventure against the possibility of a world from eternity. Ostensibly, Bonaventure was the intellectual lodestar of those opposing the possibility of an eternal creation. In the question of his *Sentences* commentary devoted to the possibility of an eternal world, he makes six arguments against such a possibility, all of which are properly philosophical and founded on solidly Aristotelian principles. Five of the arguments concern the nature of the infinite and the absurdities which would arise in the event of a world from eternity.¹⁴⁷ The sixth claims that a thing whose matter and form are produced out of nothing necessarily has a temporal start.¹⁴⁸ Next, in the question's *respondeo*, Bonaventure argues,

To propose that the world is eternal or is eternally produced by positing that all things have been produced from nothing is entirely contrary to truth and reason, as the last argument proves; and it is so contrary to reason, that I don't believe any philosopher, no matter how little his intelligence, has posited this.¹⁴⁹

Bonaventure regards it as logically contradictory to claim that something created *ex nihilo* has always existed. Perhaps indulging in a bit of rhetorical hyperbole, he claims the contradiction entailed in the possibility of a world from eternity has been clear to all philosophers. The crucial point is that Bonaventure (whether correctly or incorrectly) opposed the possibility of an eternal creation on purely philosophical grounds. Though he must have been pleased that what he regarded as philosophical truth corresponded to the

¹⁴⁷ For example, Bonaventure's second argument states that there is no order among what is numerically infinite. This is on account of the fact that any order requires that there be a first. If the earth's revolutions are infinite in number, then there was no first revolution and thus the cosmos lacks order, which is false, etc., (see Bonaventura, *In secundum librum Sententiarum*, d.1, p.1, a.1, q.2, 20-22).

¹⁴⁸ Ibid., 22.

¹⁴⁹ Ibid.

doctrine of supernatural Revelation, his contribution to the eternity of the world debate shows a respect for the difference between natural and revealed starting points.

Our study of the developing importance of the "necessary creation argument" has revealed that, at least by the time of Henry of Ghent, medieval theologians were not all as careful as Bonaventure about distinguishing between theological arguments founded on revealed principles, and philosophical arguments founded on natural ones. For example, we've seen that Henry claims it is possible to prove the world's temporal beginning when certain things are supposed which right reason must suppose.¹⁵⁰ Statements like this give the impression that a divinely revealed truth, i.e. that the world had a temporal start, is also knowable by natural reason apart from faith. Nevertheless, we observed that immediately after making the necessary creation argument, Henry dismisses the possibility of an eternal (and thus necessary) creation on the ground that faith holds the opposite: if the world exists necessarily, then it has never acquired being *de novo* from God, and this is contrary to faith, therefore, etc. Although Henry claims to be able to prove philosophically a doctrine that also belongs to supernatural faith, he smuggles in revealed premises when adequate philosophical arguments appear to be lacking. One wonders whether his approach to the question of an eternal creation is philosophical, theological, or a mix of both.

We observed a similarly confusing methodology in the way Peter Auriol explains his agreement with Henry that the necessary creation argument gives us reason to reject the possibility of an eternal creation. Instead, Auriol argues, God created the world in an

¹⁵⁰ Henricus de Gandavo, *Quodlibet* I, q.7-8, 34: "Quod autem non possit probari creaturam incepisse secundum modum quo ponebant philosophi creaturae naturam et eam habere esse a Deo, bene verum est et in hoc concordant dicta exempla sanctorum. Probare autem eam incepisse secundum modum quo ponunt catholici naturam et eam habere esse a Deo, bene est possibile, suppositis quibusdam quae recta ratione supponenda sunt, ut iam videbitur."

instant lacking duration. To ground this claim, Auriol makes two related arguments: first, if the vis productionis could conserve the world after the world's initial instant, then the world could exist without an agent conserving it, which is contrary to faith. Second, if the vis productionis could conserve the world after the world's initial instant, God would not be free to destroy the world he had created. This too, Auriol notes, is contrary to faith. As these examples prove, Auriol's agreement with Henry that an eternal world would exist necessarily, and with it his rejection of the possibility of an eternal world, rest ultimately on revealed principles. This is not to deny that Henry's necessary creation argument and Auriol's explanation of his agreement with it are not in some respects genuinely philosophical. Their arguments do count as philosophy inasmuch as they aim to establish a logical connection between a hypothetical eternal creation and limits on God's freedom. However, in the positions of Henry and Auriol regarding the possibility of a world from eternity, one distinguishes philosophical arguments from theological ones only with difficulty. Thus there are manifest differences between the methodology of Bonaventure, on the one hand, and that of Henry and Auriol, on the other.

One does not find this sort of sloppy relatioship between philosophy and theology in William of Ockham's arguments concerning the eternity of the world. As our reading of Ockham's question has tried to show, Ockham approaches the question as a philosopher. After the confused methodologies of thinkers like Henry and Auriol, Ockham redraws the boundaries between philosophy and theology. We observed, for instance, that Ockham rejects Henry's view that God's creation and conservation of the world are necessary distinct. Ockham reminds Henry that this distinction derives from divine Revelation. As a philosopher, Ockham inclines to the view that an eternal creation

is possible. What's more, thanks to Henry's argument that if the world exists from eternity, qua philosopher Ockham is inclined to adopt a position similar to that of Avicenna, i.e. that the world can exist from eternity even though this seems to conflict with God's freedom in creating. Nevertheless, as a Christian theologian he recognizes (\dot{a} *la* Boethius of Dacia) that even as a philosopher he cannot assert to be true *simpliciter* what is contrary to the revealed truth of Christian faith. Therefore, despite all the strength of his philosophical argumentation (including effective responses to the difficult arguments concerning *infinitae animae rationales* and *pars maior toti*). Ockham concludes that one may reasonably hold either that a world from eternity is possible or that it is impossible. Of course, after Ockham's strong arguments in favor of such a possibility, one may ask what reason there is for holding that the world necessarily began in time. The answer is simple: given Henry of Ghent's argument that an eternal world implies a necessary creation (an argument which Ockham finds convincing), Christian theologians, qua theologians, reasoning from revealed principles, must hold that the world could not have been from eternity. In sum, Christian faith does not directly inform Ockham's question on the eternity of the world, but it keeps Ockham the philosopher from asserting his views simpliciter.

So the following narrative has arisen: although mid-thirteenth century opponents of the eternity of the world, e.g. Bonaventure, made do with purely philosophical arguments, beginning with Henry philosophical arguments didn't seem to suffice. Instead, Henry and Auriol employ arguments that mix philosophical and theological principles to demonstrate the impossibility of a world from eternity. Next, perhaps in reaction to arguments like those of Auriol, Ockham proceeds to treat the issue again from

a purely philosophical point of view, this time with results quite different from those of Bonaventure. So the stage is set for Gregory of Rimini: on the one hand, in contrast to thinkers like Henry and Auriol, he wants to argue on the basis of philosophical principles alone. Nevetheless, like Henry and Auriol, he is eager to safeguard God's freedom, albeit not on the basis of revealed principles. In this way he distinguishes himself from Ockham, who fails to offer a philosophical defense of God's freedom in creating. Thus in Gregory of Rimini's contribution to the debate, we see a next step in the evolving relationship between theology and philosophy. To be sure, Gregory is a theologian. He does not separate philosophy and theology in such a way as to permit philosophical reason to operate completely independently of the data of Christian faith. We found a good example of that in the way Gregory answers Henry's argument partially by making a philosophical argument for God's power to make a past event not to have been. In this way, Gregory succeeds in arguing for the possibility of an eternal creation (like Ockham), while also maintaining the doctrine of God's freedom in creating (like Henry and Auriol). Yet, ironically, it's possible that Gregory's work of philosophically defending the notion of divine freedom, an aspect of revealed truth, paved the way for philosophy to operate with greater independence vis-à-vis theology.

To explain what I mean, it's necessary to highlight a puzzling aspect of the medieval eternity of the world debate: As we noticed earlier, Henry of Ghent and Peter Auriol both reject the possibility of an eternal creation on the grounds that it implies what is contrary to faith, i.e. the necessity of creation. Isn't that unusual? If revealed principles are the criterion for judging the reasonableness of philosophical conclusions, why not reject the eternity of the world *tout court* as itself contrary to faith? Why discuss the

eternity of the world at all? In some ways, desire of thinkers like Henry and Auriol to safeguard Christian faith would have been better served by such an immediate rejection of the possibility of an eternal creation than by a methodology that confused theological and philosophical thinking. When these thinkers entertained the possibility of a world from eternity, and (unlike Bonaventure) managed to reject it only on theological grounds, they implicitly issued a challenge to thinkers like Ockham and Gregory to find philosophical reasons why the eternity of the world, in fact, does not imply that God created the world necessarily. In other words, they challenged their successors to expose the weaknesses of arguments grounded on theological principles. Although Ockham did not fulfill this challenge, Gregory makes a respectable (if not completely satisfying) attempt when he argues for God's ability to undo the past and applies his views on that question to the eternity of the world controversy. So in the wake of Gregory's intervention in the debate, not only are the partisans of a necessary temporal beginning to the world left without solid philosophical grounds for their position (thanks to thinkers like Ockham), but one of their traditional "faith-based" motives for rejecting a possible eternal world, i.e. the incompatibility of an eternal creation and God's freedom, has likewise been in part *philosophically* discredited. It's not difficult to imagine the effect such a development may have had on the subsequent relationship between medieval philosophy and theology: when thinkers like Gregory are able to diffuse philosophically the power of theological arguments against positions long held by Greek and Arab philosophers, it's no wonder that the symbiotic relationship that prevailed between philosophy and theology in Europe in the Middle Ages began to disolve in favor of more independence for philosophy.

By introducing revealed principles into what had been a philosophical debate,

figures like Henry and Auriol render arguments based on revealed principles vulnerable to defeat by philosophical arguments. Naturally, when philosophical arguments are more convincing than those based upon revealed truth, philosophy asserts itself with new vigor. One begins to suspect that philosophical argumentation can answer all of one's questions about the world. When theology transgresses its boundaries and invades what had been territory for philosophical thinking, the very place of theology within the intellectual life is theatened.

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