

**The Importance of Time
In Augustinian and Contemporary
Theological Thought**

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Introduction

Almost every human experience is affected by time. Time is defined as “the measure of duration; a particular part or point of duration.”¹ Humans remember the past as time that has already been; experience the present as time that is now; and anticipate the future as time to come.

Time also plays a major role in Scripture. The first words of the Bible imply time: “In the beginning.” The first books of the Bible record the history of humanity, emphasizing the founding of the Hebrew nation as a holy people chosen by God for the great purpose of salvation. Throughout the Old Testament, men and women prophesied future events years, decades, and even centuries prior to their occurrences.

Throughout history, humans have debated the meaning of time, the nature of time, and the possible outcomes of time. Physicists have pondered whether time has a beginning, an end, or whether it is cyclical. The answers derived in these discussions catapulted technology into the Information Age in the 20th century.

Of all the Church Fathers, Augustine dealt most with the concept of time: its definition, its impact on human activities, and most of all, its implications in creation and the working of God in human affairs. Augustine’s influence in discussions of time continues in present scientific and philosophical circles.

This paper will discuss Augustine’s perspective on time and the importance of time in his beliefs about God, salvation, and the Church in the world. Next, contemporary views of time held by modern physicists will be compared with Augustine’s views. Lastly, Augustine’s concept

¹ *Webster’s Dictionary* (Miami: P.S.I. & Associates, 1991).

of time will be considered in light of modern scientific breakthroughs. Modern scientific advances in the concept of time will affect the Church's understanding of creation, soteriology, and the very nature of God Himself.

Augustine and Time

Augustine was not the first ancient thinker to ponder the enigma of time; nor was he the first to write about it. Zeno, Aristotle, and Simplicius all considered the so-called “paradoxes” of time prior to Augustine's era.² Zeno's paradoxes particularly revolved around the problem of time's divisibility: Into how small a unit could time be divided?

Eastern religions such as Hinduism held the same beliefs about creation and time as some Greek philosophers, that time is circular; that is, the universe is engaged in a continual circle of creation and destruction. Time itself revolves with the universe.

Teachings of time's circular nature removed a major problem for Greek philosophers. If there was a creation, who was the Creator? If there was a creator, what was His nature, given the presence of evil in the world? Various answers all arrived at concluding that a good Creator could not have created the evil present in the world. Therefore, either matter existed eternally without a creator, or else there were multiple creators at work. Dualism became the dominant theme of philosophies from Zoroastrianism to Manicheism.

Jewish —later to become Christian — Scriptures taught that time began with God's creating the universe and progressed linearly from the Creation. Christian Scriptures also taught

² Christopher Ray, *Time, Space, and Philosophy: Philosophical Issues in Science* (New York: Routledge, 1991), 5.

that God was infinitely good, that His creation was good, and that evil was the result of something gone wrong with the creation.

The nature of God figured prominently in Augustine's discussions concerning time. Augustine was well acquainted with both the Greek philosophies and Manicheism. As a rhetorician, Augustine learned the Greek philosophical system (albeit in Latin); as a young man, he had followed the Manichee religion for a time. Therefore, he was in a perfect position to combat those opposed to orthodox Christian teachings about God and the Creation.

Augustine wrote the *Confessions*, his autobiographical journey to conversion, in A.D. 397-98. The *Confessions* serves as a testimony of Augustine's conversion and also as an apologetic for the faith he adopted.

Augustine began the *Confessions* with a cry to God for aid, recognizing that his God was, in some sense, too vast for all creation to contain Him. Furthermore, since nothing exists without God, it is a contradiction to ask God for help when God is already aware of the need:

How shall I call upon my God for aid, when the call I make is for my Lord and my God to come into myself? ... Does this then mean, O Lord my God, that there is in me something fit to contain you? Can even heaven and earth, which you made and in which you made me, contain you? Or, since nothing that exists could exist without you, does this mean that whatever exists does, in this sense, contain you? ... For you, my God, have said that you *fill heaven and earth*, but I cannot go beyond the bounds of heaven and earth so that you may leave them to come to me.³

Immediately, Augustine informed his readers, both pagan and Christian, that the God he served could not wholly fit into creation. Instead, God is infinite in both time and space.⁴

³ Augustine, *Confessions* (London: Penguin Books, 1961), 22.

⁴ *Ibid.*, 26-27.

At this point in *Confessions*, Augustine began his explanation of how God relates to time itself. Augustine wrote,

For you are infinite and never change. In you 'today' never comes to an end: and yet our 'today' does come to an end in you, because time, as well as everything else, exists in you. If it did not, it would have no means of passing. And since your years never come to an end, for you they are simply 'today.' ... And so it will be with all the other days which are still to come. But you yourself are eternally the same. In your 'today' you will make all that is to exist tomorrow and thereafter, and in your 'today' you have made all that existed yesterday and for ever before.⁵

God, according to Augustine, is not affected by time, nor is He restricted to the linear progression of time as is the Creation. God existed prior to time's inception. God's existence is truly eternal in the sense that He has always existed and shall always exist, regardless of the events of creation.

Creation began with God Himself in the person of the Word, Jesus Christ. Augustine said of Jesus that

He is therefore the Beginning, the abiding Principle.... He is the Beginning, O God, in which you made heaven and earth. In this wonderful way you spoke and created them in your Word, in your Son, who is your Strength, your Wisdom, and your Truth.⁶

Next, Augustine began to differentiate between the character of God in eternity and the work of God in Creation, including time. He began by recognizing the question many possessed both in his time and in the present: What was God doing before Creation? One senses Augustine's sense of humor as he facetiously quoted the reply, "He was preparing Hell for

⁵ Ibid., 27.

⁶ Ibid., 260.

people who pry into mysteries.”⁷ Following his humorous quote, Augustine first instructed his readers on the nature of eternity compared to time:

[T]ime derives its length only from a great number of movements constantly following one another into the past, because they cannot all continue at once. But in eternity nothing moves into the past: all is present. Time, on the other hand, is never present all at once. The past is always driven on by the future, the future always follows on the heels of the past, and both the past and the future have their beginning and their end in the eternal present.... [E]ternity, in which there is neither past nor future, determines both past and future time.⁸

God, therefore, was doing nothing in the “past” before time, because there was no time by which God’s actions could be measured until its inception at the Creation. Augustine said of God, “You are the Maker of all time... You must have made that time, for time could not elapse before you made it.”⁹ To answer his question of what God was doing before time was created, Augustine answered, “If there was no time, there was no ‘then.’”¹⁰ Time came into being only because God made time:

You made all time; you are before all time; and the ‘time’, if such we may call it, when there was no time was not time at all. It is therefore true to say that when you had not made anything, there was no time, because time itself was of your making.¹¹

Later, in the *City of God*, Augustine wrote that ‘there can be no doubt that the world was not created *in* time but *with* time.’¹²

⁷ Ibid., 262.

⁸ Ibid., 262.

⁹ Ibid., 263.

¹⁰ Ibid., 263.

¹¹ Ibid., 263.

¹² Augustine, *City of God* (London: Penguin Books, 1984), 436.

After establishing that God created time, Augustine began to explore the nature of time itself. He stated at the outset the difficulty of his problem: “I know well enough what it is, provided that nobody asks me; but if I am asked what it is and try to explain, I am baffled.”¹³ Augustine’s bafflement (as will be seen) continues into the present day.

Augustine first discussed the common division of time into past, present, and future. This division is not as easily to explain as it may seem, leading to Augustine’s puzzlement. “I can confidently say that I know that if nothing passed, there would be no past time; if nothing were to happen, there would be no future time; and if nothing *were*, there would be no present time.”¹⁴

Regarding the length of the past, Augustine encountered the problem of determining the nature of the past. Does the past or future even exist? “For the past is no more and the future is not yet.”¹⁵ Furthermore,

[W]e must not say that the past was long, because we shall not be able to find anything in it that could be long, for the simple reason that once it becomes the past it ceases to be. Instead we must say that the time of which we are speaking was long when it was the present, because it could have been long only while it was the present.... But as soon as it became the past it ceased to be long, because it ceased to be at all.¹⁶

If the past no longer exists, what about the present? In a brilliant move, Augustine began determining the nature of the present. Using the example of “the present century,” Augustine demonstrated the ephemeral nature of the present.

¹³ Ibid., 264.

¹⁴ Ibid., 264.

¹⁵ Ibid., 264.

¹⁶ Ibid., 265.

[W] must see whether a hundred years can possibly be present. If we are in the first year of the hundred, that year is present but the other ninety-nine are future. Therefore, they are not yet.... This proves that a hundred years cannot be present.... Let us see then, whether at least the one year in which we are is present. If we are in the first month, the other eleven are future.... So we cannot even say that the whole of the current year is present, and if the whole is not present, the year is not present.¹⁷

Using this analogy down to the day, hour, and minute, Augustine proved that the present has no duration at all.

If the past does not exist, and the present has no duration, then what about the future? Again, Augustine proved the future does not exist. This however, led to a major problem. If the future does not exist, how did the Spirit of God use prophets to accurately predict future events?

At this point, Augustine conceded defeat. He could explain the past, primarily in terms of human memory; He could describe the present as the immediate moment of human experience; but when confronted with future prophecies, Augustine could only say to God, “the means by which you do this is far beyond our understanding. I have not the strength to comprehend this mystery, and by my own power I never shall.”¹⁸

This admission stands as a moment of humility, but a crucial point must be made and never forgotten when studying Augustine’s further dealings with time. Augustine stated that humanity cannot understand *how* God predicts the future; he did not deny that God *does* predict the future, nor does he deny that God does, in fact, shape the future. In fact, Augustine used God’s future knowledge as the basis for one of his most important contributions to Christian thought: the role of grace in God’s redemption of fallen humanity.

¹⁷ Ibid., 265.

¹⁸ Ibid., 268.

Augustine and Grace: The Foreknowledge of God

Some time around the end of the 4th century, a British teacher named Pelagius traveled to Rome and began teaching there. Although Pelagius lived the lifestyle of a monk, he was never ordained or admitted into any monastic order.

Pelagius was a popular teacher in Roman circles and wrote numerous works, many of which were recommended for Christians of the time. Pelagius concerned himself primarily with the problem of the human will to and the ability of humanity to obey God's commands. In the face of Christians complaining about a lack of will power to live a Christian lifestyle, Pelagius argued, "we accuse God of a twofold ignorance,— that He does not seem to know what He has made, nor what He has commanded,— as if forgetting the human weakness of which He is Himself the Author, He has imposed laws on man which He cannot endure."¹⁹ Benjamin Warfield wrote of Pelagius,

The powers of man, he held, were gifts of God; and it was, therefore, a reproach against Him as if He had made man ill or evil, to believe that they were insufficient for the keeping of His law. Nay, do what we will, we cannot rid ourselves of their sufficiency: "whether we will, or whether we will not, we have the capacity of not sinning." "I say," he says, "that man is able to be without sin, and that he is able to keep the commandments of God;" and this sufficiently direct statement of human ability is in reality the hinge of his whole system.²⁰

On the face of it, these statements seem to contradict nothing in Christian teaching. No one would argue that God gave humanity an impossible task and then condemned the race for

¹⁹ Benjamin B. Warfield, "Introductory Essay on Augustin and the Pelagian Controversy," *NPNF1-05. St. Augustin: Anti-Pelagian Writings*, Philip Schaff, Editor (Grand Rapids, MI: Christian Classics Ethereal Library, 1886), 11.

²⁰ *Ibid.*, 11.

failing to achieve it. Scripture itself teaches that God's commandments are within our ability to obey.²¹ What, then, was the problem with Pelagius' teachings?

First of all, Pelagius denied the doctrine of original sin. According to Pelagius, if it were possible for any person to live a sinless life for the duration of his life, then that person had to have been born sinless in the first place. Christian doctrine clearly taught (and continues to teach) that only Jesus Christ was born and lived without sin.²² Pelagius wrote that "As we are procreated without virtue, so also without vice."²³

Secondly, Pelagius' teachings implied heavily that fallen humanity could redeem itself with no need for God's grace. Pelagius himself taught that sinful people had no need of prevenient grace to draw them to God. If God had truly granted humanity free will, then we were free to choose to live a sinless life and were able to do so on our own power.

Pelagius' teachings rocked the Church from Spain to Palestine. Pelagius' disciple Cœlestius was excommunicated as a heretic in Carthage, but he sailed to Ephesus and was there ordained as a presbyter. Pelagius himself faced two tribunals in Palestine in A.D. 415 but escaped condemnation. Pope Innocent I agreed with the African bishops in A.D. 417, but he died six weeks later. His successor, Zosimus, was barely on the throne before Cœlestius himself appeared before him to argue his case and urge him to undo Innocent's agreement with the African bishops. Zosimus agreed and sternly rebuked the African bishops for condemning Cœlestius and

²¹ Deuteronomy 10:12; Micah 6:8; 1 John 5:3.

²² Hebrews 4:15.

²³ Schaff, 12.

Pelagius.²⁴ The Africans held their ground, and Zosimus later joined them in condemning Pelagianism. The controversy did not fully die until the 5th century was finished.

Augustine at first commended Pelagius for his teachings regarding Christian morality. When the controversy broke, Augustine was busy dealing with the Donatist controversy in North Africa and was absent from Carthage when Pelagius and Cœlestius arrived there. However, Augustine recognized the danger of Pelagius' teachings: the denial of humanity's fallen condition through Adam's sin, the tendency toward legalism, and the temptation to attribute humanity's salvation to our own ability to achieve salvation. For Augustine, none of these doctrines could stand. In his defense of original sin, Augustine preached

“There was no reason for the coming of Christ the Lord except to save sinners. Take away diseases, take away wounds, and there is no reason for medicine. If the great Physician came from heaven, a great sick man was lying ill through the whole world. That sick man is the human race” (175, 1). “He who says, ‘I am not a sinner,’ or ‘I was not,’ is ungrateful to the Saviour. No one of men in that mass of mortals which flows down from Adam, no one at all of men is not sick: no one is healed without the grace of Christ.”²⁵

But it is in his defense of the necessity of grace that Augustine turned to time and God's ability to foresee the future. Augustine based his defense of grace on God's foreknowledge of human destiny.

Predestination is defined as “the divine decree according to which certain persons are infallibly guided to eternal salvation.”²⁶ The numerous works Augustine wrote against Pelagianism included the *Treatise on the Predestination of Saints*. Augustine wrote this work

²⁴ Schaff, 17.

²⁵ Ibid., 21.

²⁶ E.A. Livingstone, ed., *The Concise Oxford Dictionary of the Christian Church* (Oxford: Oxford University Press, 2000), s.v. “Predestination.”

around A.D. 428 and addressed it to Prosper and Hilary, two laymen in Gaul who were facing Pelagianism in their area. In this treatise, Augustine approached the necessity of grace from the perspective of predestination.

The doctrine of predestination figures prominently in Scripture. Scripture is unambiguous: God chooses people and nations for specific purposes to fulfill His plan for creation. In Genesis 6, God chose Noah to build the ark and survive the Flood. God chose Abraham as the ancestor of Israel, the nation through which He chose to bless the world with the Law and, eventually, salvation through His Son, Jesus Christ.

Jeremiah's call as a prophet provides another clear example of predestination. According to Jeremiah 1:5, God spoke to Jeremiah, telling him, "before I formed you in the womb I knew you, and before you were born I consecrated you; I appointed you a prophet to the nations."²⁷ Jeremiah honestly records his surprised reaction and his reluctant acceptance of his calling.

Predestination also appears in the New Testament. Jesus told His disciples in his last discourse in John, "you did not choose me, but I chose you and appointed you that you should go and bear fruit and that your fruit should abide, so that whatever you ask the Father in my name, he may give it to you."²⁸ In the same passage, Jesus told the disciples the world would hate them because "I chose you out of the world."²⁹

The Apostle Paul became predestination's premier advocate. In a dramatic conversion, Paul was called to serve the Church he had been intensely persecuting. When Ananias reminds

²⁷ Jeremiah 1:5, English Standard Version. Unless otherwise noted, all Scripture references will come from the ESV.

²⁸ John 15:16.

²⁹ John 15:19.

God of Paul's role as persecutor, God told him, "go, for he is a chosen instrument of mine to carry my name before the Gentiles and kings and the children of Israel."³⁰

Paul himself saw his conversion and calling as a repetition of Jeremiah's experience. When writing to the Galatians concerning the supremacy of grace over the Law, Paul described himself as an apostle "not from men nor through man, but through Jesus Christ and God the Father, who raised him from the dead."³¹ Paul later alluded to Jeremiah's experience in explaining his own calling, telling the Galatians that God "had set me apart before I was born."³²

Since predestination has a Scriptural basis, one must determine its nature: Does God choose those whom He knows will accept His grace, or does God accept those to whom He chooses to extend grace?

Augustine admitted to Prosper and Hilary that he had once considered predestination in the manner of the former approach:

I carried out my reasoning to the point of saying: 'God did not therefore choose the works of any one in foreknowledge of what He Himself would give them, but he chose the faith, in the foreknowledge that He would choose that very person whom He foreknew would believe on Him,—to whom He would give the Holy Spirit, so that by doing good works he might obtain eternal life also.' I had not yet very carefully sought, nor had I as yet found, what is the nature of the election of grace, of which the apostle says, 'A remnant are saved according to the election of grace.'³³

Augustine later came to believe his approach to be in error and accordingly changed his view:

"But it should further have been asked, whether even the merit of faith does not come from

³⁰ Acts 9:15.

³¹ Galatians 1:1.

³² Galatians 1:15.

³³ Schaff, 819.

God's mercy."³⁴ In Augustine's new perspective, God chooses those to whom He will extend the gift of grace. Only to those to whom God extends mercy is grace offered. In Augustine's eyes, the choosing of the elect eliminated any reason for pride on the part of believers:

In this the apostle's most evident intention, in which he speaks against human pride, so that none should glory in man but in God, it is too absurd, as I think, to suppose God's natural gifts, whether man's entire and perfected nature itself as it was bestowed on him in his first state, or the remains, whatever they may be, of his degraded nature. For is it by such gifts as these, which are common to all men, that men are distinguished from men? But here he first said, "For who maketh thee to differ?" and then added, "And what hast thou that thou hast not received?"³⁵

The Pelagians had argued, as Augustine once believed, that God called those He foresaw would choose salvation. Augustine countered:

"Therefore," says the Pelagian, "He foreknew who would be holy and immaculate by the choice of free will, and on that account elected them before the foundation of the world in that same foreknowledge of His in which He foreknew that they would be such. Therefore He elected them," says he, "before they existed, predestinating them to be children whom He foreknew to be holy and immaculate. Certainly He did not make them so; nor did He foresee that He would make them so, but that they would be so." Let us, then, look into the words of the apostle and see whether He chose us before the foundation of the world because we were going to be holy and immaculate, or in order that we might be so. "Blessed," says he, "be the God and Father of our Lord Jesus Christ, who hath blessed us in all spiritual blessing in the heavens in Christ; even as He hath chosen us in Himself before the foundation of the world, that we should be holy and unspotted." Not, then, because we were to be so, but that we might be so. Assuredly it is certain, — assuredly it is manifest. Certainly we were to be such for the reason that He has chosen us, predestinating us to be such by His grace. Therefore "He blessed us with spiritual blessing in the heavens in Christ Jesus, even as He chose us in Him before the foundation of the world, that we should be holy and immaculate in His sight, in order that we might not in so great a benefit of grace glory concerning the good pleasure of our will."³⁶

³⁴ Ibid., 820.

³⁵ Ibid., 823.

³⁶ Ibid., 844.

Augustine saw election as the counterargument the Pelagians could never overcome. The Pelagians could never dismiss the tendency of pride on the part of those believing themselves sinless — and therefore sinning in their pride. Augustine pointed out from Paul that viewing grace as a gift given in God’s foreknowledge eliminated any reason for pride in the first place.

Building an argument on foreknowledge carried a considerable risk. If God determined those to whom grace would be offered, has He predestined all actions in history? And if so, do humans have any free will to act? If not, how can we be held responsible for our actions?

Augustine firmly believed in the free will of humanity to do good and our accountability in failing to do so. In *City of God*, Augustine wrote of Cicero and his attempts to discredit pagan prophecy. Cicero, in his battles with the philosophers, could not accept their reliance on fate. Unfortunately, he could not do so without denying “the foreknowledge of God” in the process.³⁷ Augustine countered Cicero’s notion by stating “to acknowledge the existence of God, while denying him any prescience of events, is the most obvious madness.”³⁸ Augustine continued:

Now what was it that Cicero so dreaded in prescience of the future, that he struggled to demolish the idea...? He reasoned that if all events are foreknown, they will happen in the precise order of that foreknowledge; if so, the order is determined in the prescience of God. If the order of events is determined, so is the causal order... If the causal order is fixed, determining all events, then all events, he concludes, are ordered by destiny. If this is true, nothing depends on us and there is no such thing as free will. ‘Once we allow this,’ he says, ‘all human life is overthrown. There is no point in making laws, no purpose in expressing reprimand or approbation, censure or encouragement; there is no justice in establishing rewards for the good and penalties of the evil.’³⁹

Continuing Cicero’s argument, Augustine wrote

³⁷ *City of God*, 190.

³⁸ *Ibid.*, 190.

³⁹ *Ibid.*, 191.

The argument proceeds thus: if there is free will, everything does not happen by fate; if everything does not happen by fate, there is not a fixed order of all causes; if there is not a fixed order of all causes, there is not a fixed order of events for the divine prescience, for these events cannot take place unless preceded by efficient causes; if there is not a fixed order for God's prescience, everything does not happen as he has foreknown them as due to happen. Thus, he concludes, if everything does not happen as foreknown by God, then there is in him no foreknowledge of all the future.⁴⁰

Is Cicero correct? Does foreknowledge completely preclude free will?

Augustine flatly stated Cicero is incorrect. "Against such profane and irreverent impudence we assert both that God knows all things before they happen and that we do by our free will everything that we feel and know would not happen without our volition."⁴¹ Augustine believed that God, humans, and angels possessed free, "voluntary" will to "carry out actions in accordance with their nature."⁴² Augustine stated that all wills are subject to the will of God,⁴³ "Thus our wills have only as much power as God has willed and foreknown; God, whose foreknowledge is infallible, has foreknown the strength of our wills and their achievements, and it is for that reason that their future strength is completely determined and their future achievements utterly assured."⁴⁴

God's foreknowledge, therefore, is not fatalistic. God allows human freedom of will within the restrictions of His will. "Hence we are in no way compelled either to preserve God's prescience by abolishing our free will, or to safeguard our free will by denying (blasphemously)

⁴⁰ Ibid., 191.

⁴¹ Ibid., 191.

⁴² Ibid., 192.

⁴³ Ibid., 193.

⁴⁴ Ibid., 194.

the divine foreknowledge. We embrace both truths, and acknowledge them in faith and sincerity, the one for a right belief, the other for a right life.... Therefore, let us never dream of denying his foreknowledge in the interests of our freedom; for it is with his help that we are, or shall be, free.”⁴⁵

Augustine believed firmly that God created time when He created the universe, according to a plan foreknown to Him in eternity prior to the creation of time. In His foreknowledge, God chose the elect for salvation. However, God allows freedom of will to all humanity. God knows the future, but our actions are extremely important and accountable. Does Augustine’s view of time stand the test of time in light of recent scientific discoveries?

Time in Present Scientific Discussions

Augustine’s work on time stood for centuries. From his time, through Thomas Aquinas, and up to the 16th century, little happened to cause people to question Augustine’s theories and explanations.

The scene began to change in 1514 with Nicolas Copernicus’ theory that the solar system revolved around the sun rather than the earth. Johannes Kepler and Galileo contributed to the acceptance of Copernicus’ theory by hypothesizing the planets followed elliptical orbits around the sun (Kepler) and by discovering that Jupiter had its own set of moons (Galileo).

The scientific revolution began in earnest in 1687 with the publication of *Principia* by Isaac Newton. Newton not only theorized how planetary bodies move but also developed the mathematics required to explain his theories.⁴⁶ Newton proposed what came to be known as the

⁴⁵ Ibid., 195.

⁴⁶ Stephen Hawking, *A Brief History of Time* (Toronto: Bantam Books, 1988), 4.

law of gravity: that every body attracts every other body to it by a force proportionate to the mass to the bodies and the distance between the bodies. Newton's gravitational theory explained why planets follow elliptical orbits around the sun.

Newton's work also posed several problems for philosophers, theologians, and scientists. First, if every star and planet were attracting each other, then everything in the universe must, at some point, begin falling in toward a center. Someone proposed a solution for this problem, but the solution was worse than the problem (it required the universe to contain an infinite number of stars, but if this were true, then the night sky should be as light as the day). This realization led to the second problem: Newton's laws revealed that the universe was not static, as had been assumed for millennia. The impact of this realization would not be evident for another two hundred years.

The first problem — that of gravitational attraction pulling the universe together — led indirectly to one of Augustine's primary areas of interest: the nature of Creation. Augustine wrote several works on the Creation and included an extensive explanation of the first chapters of Genesis in the *Confessions*.⁴⁷ The only solution posed to the night being as bright as day was that the stars had not been shining forever but began shining at a finite time in the past. But when did the stars begin shining?⁴⁸

Judeo-Christian Scriptures taught that God "created the heavens and the earth." Therefore, Christian theologians and scientists naturally assumed a starting point for the

⁴⁷ *Confessions*, books 11-13. It is interesting that of all the theologians and Church Fathers, Hawking mentions only Augustine in his books *A Brief History of Time* and *The Universe in a Nutshell*.

⁴⁸ *A Brief History of Time*, 7.

universe. Post-Enlightenment science, however, was skeptical of Christian teaching and enamored with theories along the lines of Darwinianism. Darwin's theory of natural selection required far longer periods of time since the Creation than most theologians believed or taught. Therefore, nineteenth century scientists required major proof before accepting any teaching regarding a definitive Creation.

The second problem opened another issue: if the universe were not static, the notion of absolute position was a farce. With no absolute positioning, no one could determine whether two events taking place at different times occurred in the same position in space.⁴⁹ Newton himself refused to believe in the lack of an absolute position because it conflicted with his belief in an absolute God.⁵⁰

Regardless of the problems it posed, Newton's work gave led to hope that science would solve most, if not all, of the world's major issues. French scientist the Marquis de Laplace actually proposed that knowing the positions and velocities of all the particles in the universe at any given time should allow predictions about the state of the universe at any time, past or future.⁵¹ Finally, it seemed Augustine's intractable problem of explaining how prophets prophesied could be solved.

Unfortunately for would-be mathematical prophets, the problem of relative space soon overflowed into the issue of time itself. Humanity from Adam to Augustine to Newton had believed that time was absolute, removed from objects and space. Regardless of where

⁴⁹ Ibid., 17.

⁵⁰ Ibid., 18.

⁵¹ Stephen Hawking, *The Universe in a Nutshell* (New York: Bantam Books, 2001), 104.

something happened, time was an objective means of measuring the occurrence; an hour-long process in 4th century Rome would take an hour to occur in 4th century Carthage or 17th century London. Surely time was the one static factor in the universe!

Not quite.

Beginning with Newton, science began to progress faster for the next two centuries than humanity had experienced over the previous two millennia. In 1676, Danish astronomer Ole Christensen had devised a way of measuring the speed of light, coming very close to its actual speed without the aid of modern instruments. In 1865, British physicist James Clerk Maxwell devised the theory of electromagnetism and predicted that radio or light waves should travel at a certain fixed speed.⁵² In 1887, Albert Michelson and Edward Morley determined light traveled the same speed regardless of the direction of the earth's motion.⁵³

Then, in 1905, a Swiss postal clerk named Albert Einstein proposed his famous theory of relativity. Einstein pointed out that the problems with the speed of light disappeared if the idea of absolute time were abandoned. Only the speed of light — 186,282 miles per second — is a constant in the universe. Furthermore, Einstein's theory proved nothing can travel faster than light, meaning traveling throughout the universe or transmitting data within the universe was limited to the speed of light. In addition, the theory of relativity tied time into the measurements of objects in space. As British physicist Stephen Hawking explains, “we must accept that time is not completely separate from and independent of space, but is combined with it to form an object

⁵² Ibid., 19.

⁵³ Ibid., 20.

called space-time.”⁵⁴ Events once measured only by the place in which they occurred must, by necessity, also be measured by the time at which they occur. Any omission of the time variable gives an inaccurate description of events occurring in our universe.

One other interesting observation resulted from Einstein’s theory. Scientists realized that, according to Einstein, Newton’s laws worked because gravity caused a “depression” in space-time. According to the theory of relativity, time should — and, we now know, does — appear to run slower near a massive body than in areas of the universe away from gravitational fields. This difference was proved in experiments conducted in 1962.⁵⁵ Scientists commonly use the “twins” story to explain this facet of relativity: if one twin travels in outer space and the other remains on Earth, the twin in space will age slower than the twin on Earth.⁵⁶

Einstein’s theory of relativity was vindicated in 1919. Einstein’s theory revolutionized science in the 20th century as Newton’s theories had done in the 17th century. Science has never again been the same.

Further developments complicated the scientific picture regarding time and creation. In 1929, astronomer Edwin Hubble discovered that the galaxies in the universe were moving away from each other. Given the distances involved, the universe had been expanding for several billion years — far longer than Augustine had believed the universe existed. Even more

⁵⁴ Ibid., 23.

⁵⁵ Ibid., 32.

⁵⁶ *The Universe in a Nutshell*, 11.

disturbing, Hubble discovered that the farther away the galaxies are, the faster they are moving away from the earth.⁵⁷

Hubble's work, combined with that of Russian physicist Alexander Friedmann, posed a troubling problem: if the universe is expanding, then there had to be a time when all the matter in the universe was in one single place. At this point, the curvature of space-time is infinite and all the theories of Newton, Einstein, and others break down and are completely unusable.⁵⁸ The theory that the universe began in a single point in space-time and spread into its current state came to be known as the Big Bang Theory. In spite of opposition to its creationist implications, British scientists Roger Penrose and Stephen Hawking proved in 1970 there must have been a big bang singularity provided only that general relativity is correct and the universe contains as much matter as has been observed.⁵⁹ The universe, therefore, started in a tremendous explosion in which all the matter emerged on a particular timeline.

As Newton, Einstein, and Hawking had determined the relativity of time on the cosmic scale, other scientists were working on issues regarding time on the atomic scale. In 1900, German scientist Max Plank proposed the quantum theory, stating that X rays, light, and other waves were emitted not in waves but in packets called quanta.⁶⁰ In 1926, German scientist Werner Heisenberg used Plank's theory to propose a troubling theory of his own: the uncertainty theory.

⁵⁷ *A Brief History of Time.*, 39.

⁵⁸ *Ibid.*, 46.

⁵⁹ *Ibid.*, 50.

⁶⁰ *Ibid.*, 54.

According to Heisenberg, atomic particles smaller than one quantum cannot be measured without disturbing the particle and thus ruining the measurement. Laplace's hope of scientific determinism fell unfulfilled in light of Heisenberg's work as scientists realized the impossibility of obtaining accurate measurements of the state of the universe.

Heisenberg, Eric Schrödinger and Paul Dirac used Heisenberg's work to for the theory of quantum mechanics in the 1920's. Quantum mechanics predicts a number of possible outcomes given an observation and predicts how likely an outcome may be.⁶¹

Quantum mechanics introduced an unavoidable element of unpredictability and randomness into the mechanics of the universe. Although his theory led to Heisenberg's work, Einstein flatly refused to accept quantum mechanics and the element of chance it proved in the universe, saying "God does not play dice."⁶²

To further complicate the picture, physicist Richard Feynman won the Nobel Prize in 1965 by proving that, actually, *every* possible history *does* occur. According to Feynman, particles travel from one location to another along every possible path through space-time.⁶³ Feynman's work mathematically proves the universe actually has multiple histories in its existence. According to Hawking's explanation of Feynman's work, "all the evidence is that God is quite a gambler."⁶⁴ According to Hawking, "[t]here must be a history of the universe in which Belize won every gold medal at the Olympic Games, though maybe the probability is low."⁶⁵

⁶¹ Ibid., 55.

⁶² Ibid., 56.

⁶³ *The Universe in a Nutshell*, 83.

⁶⁴ Ibid., 79.

⁶⁵ Ibid., 80.

If Newton and Einstein's theories describe how the universe works now, Planck and Heisenberg's theories best describe how the universe should have worked in the moments of and immediately following the Big Bang. At those points, the uncertainty principle would determine what kind of universe actually emerged from the quantum soup of particles as time progressed. Had any event single probability overruled what actually occurred in those moments, the universe would be far different from the universe in which we live and that we observe today. Feynman's work proves the universe as we see it is only one possible existence, yet it is the one we observe because this possibility alone could sustain human life.

The implications of this fact trouble many in the scientific community. The universe started with just the critical rate of expansion to both prevent it from collapsing prior to the time when humans could live on a planet like Earth, and to prohibit the amount of expansion that would have inhibited the formation of stars, planets, and other bodies so crucial to the formation and success of life such as exists on Earth. The probabilities of everything happening just right and at the right time lead many to the conclusion of a divine Creator. Interestingly, Hawking himself has realized this and attempted to provide an explanation for the universe that contradicts his work proving the Big Bang.

Hawking's recent work revolves around introducing the concept of "imaginary time," or time measured in imaginary numbers⁶⁶ Imaginary time runs at right angles to real time. Therefore, the universe would have no boundaries in space and time. With imaginary time, the singularities at the Big Bang and the "Big Crunch" (that point at which the universe will theoretically collapse into itself) disappear. Much as the North and South poles of Earth are not

⁶⁶ Ibid., 59.

actually found in geographical terms but are merely points of reference, the origin of the universe would be merely a point of reference in spacetime rather than an actual event.⁶⁷ According to Hawking, “[t]he universe would be entirely self-contained; it wouldn’t need anything outside to wind up the clockwork and set it going. Instead, everything in the universe would be determined by the laws of science and by rolls of the dice within the universe.”⁶⁸ In *A Brief History of Time*, Hawking states that

[t]he universe would be completely self-contained and not affected by anything outside itself. It would neither be created nor destroyed. It would just BE.⁶⁹

Hawking understood clearly the theological implications of his work in imaginary time.

The idea that space and time may form a closed surface without boundary also has profound implications for the role of God in the affairs of the universe. With the success of scientific theories in describing events, most people have come to believe that God allows the universe to evolve according to a set of laws and does not intervene in the universe to break these laws. However, the laws do not tell us what the universe should have looked like when it started — it would still be up to God to wind up the clockwork and choose how to start it off. So long as the universe had a beginning, we could suppose it had a creator. But if the universe is really self-contained, having no boundary or edge, it would have neither beginning nor end: it would simply be. What place, then for a creator?⁷⁰

Hawking’s writings prove the concept of time, even to scientists, holds important theological ramifications. Hawking fully believes science exists to find the answers regarding time, creation, and human existence, for “[i]f we find the answer to that, it would be the ultimate triumph of human reason — for then we would know the mind of God.”⁷¹

⁶⁷ Ibid., 61.

⁶⁸ Ibid., 85.

⁶⁹ *A Brief History of Time*, 136.

⁷⁰ *A Brief History of Time*, 140-41.

⁷¹ *A Brief History of Time*, 175.

Science and Time: The Theological Implications

Hawking's reservations notwithstanding, theology in general and Christianity in particular can benefit from recent scientific developments in the nature of time. In response to Hawking's question, "what place, then, for a creator?", theologian British scientist and Anglican theologian John Polkinghorne writes,

it would be theologically naïve to give any answer other than: 'Every place — as the sustainer of the self-contained space-time egg and as the ordainer of its quantum laws.' God is not a God of the edges, with a vested interest in boundaries. Creation is not something he did fifteen billion years ago, but it is something that he is doing now.⁷²

Wolfhart Pannenberg adds,

If the God of the Bible is the creator of the universe, then it is not possible to understand fully or even appropriately the processes of nature without any reference to that God. If, on the contrary, nature can be appropriately understood without reference to the God of the Bible, then that God cannot be the creator of the universe, and consequently he cannot be truly God and be trusted as a source of moral teaching either.⁷³

Pannenberg reminds Christianity if God is not Creator the universe, He cannot be worthy of providing the moral teaching claimed by the Church. Polkinghorne's statement carries more than merely a defense of God at creation; it implies God's continual work and presence in the Creation now. This important implication cannot be overlooked, for it assists the Church in defining a part of the nature of God.

Most Christians today can tell anyone who asks the 3 "big" adjectives used to describe God: omnipotent, omniscient, and omnipresent. Most Christians today tend to think of God only

⁷² John Polkinghorne, *Theological Reflections of a Bottom-Up Thinker* (London: Society for Promoting Christian Knowledge, 1994), 73.

⁷³ Wolfhart Pannenberg, quoted in *Science and Christian Belief*, 158.

in terms of the first two: His omnipotence and omniscience. Einstein's theory of relativity leads the Church to re-consider the last, often overlooked quality of God: His omnipresence.

Relativity has re-defined "omnipresence." Prior to Einstein, Christians could think of God's omnipresence as meaning His presence within the 3 dimensions considered at the time: height, length, and width. God, in other words, was present in every location in the universe. By incorporating time into the dimensional framework, Einstein unwittingly expanded the Christian understanding of the word "Emmanuel," "God with us."

Time as the fourth dimension reminds believers that God is present not only in space but also in time. Augustine, writing in the *Confessions*, wrote to God that

What is now the future, once it comes, will become the past, whereas *you are unchanging, your years can never fail* (Psalm 102:27)... Your years are completely present to you all at once, because they are at a permanent standstill... Your today is eternity.⁷⁴

God, in other words, sees the future as the past and the present. God therefore, in a way unknown to Augustine, dealt with eternity as humanity deals with the present.

Christianity must continue to proclaim, as did Augustine, that God sees all creation and works within His Creation. God is present in all times and in all locations in believers' lives. Therefore, believers must live every moment of life as if God is present with them — *for He is*. This realization should encourage every believer who prays the ancient prayer for aid in living a "godly, righteous, and sober life to the glory of Thy holy Name."⁷⁵

God's omnipresence within time provides comfort for believers in trials and temptations

⁷⁴ *Confessions*, 263.

⁷⁵ Confession of Sin, Morning Prayer I: *The Book of Common Prayer* (The Church Hymnal Corporation, 1977), 42.

in life. Paul tells us in 1 Corinthians that

no temptation has overtaken you that is not common to man. God is faithful, and he will not let you be tempted beyond your ability, but with the temptation he will also provide the way of escape, that you may be able to endure it.⁷⁶

Since God is present at the time of the temptation, He is aware of the means required to allow the believer to escape. God can therefore come to the aid of believers at any time in any place. Not only *can* God do so; He *promises* to do so.

Physics also gives a glimpse into the immensity of God's omnipresence. Recall that the speed of light is the physical limit of travel and data transmission. Anyone tempted to believe that God must "travel" in the universe — or that God exists as mere light — will find his God seriously lacking in omnipresence. The God of Christianity encompasses the entirety of the universe simultaneously.

God's omnipresence in time provides food for thought concerning Christian soteriology as well as Christian living.

Heisenberg may have explained why humanity cannot foretell the future, but Christianity has always insisted that God has known the future from before the foundations of the world. When confronted with the Pelagian controversy regarding the necessity of God's grace in human salvation, Augustine based his arguments on God's foreknowledge and the role that foreknowledge played in the salvation of the elect. It is interesting to note that, eleven hundred years after Augustine, John Calvin would build his ultimate defense of God's sovereignty on God's foreknowledge. Both of the foremost thinkers in the Church, when facing serious attacks on the faith, examined the doctrines of the faith and resorted to the same defense.

⁷⁶ 1 Corinthians 10:13, English Standard Version.

Both Augustine and Calvin examined the nature of God's foreknowledge and reached the same conclusion: that God chooses the elect solely on the basis of grace and not on the merit of the future believer. Writing of God's foreknowledge as expressed in the Pauline epistles, Calvin stated, "this is not the language of him who says, 'Ye have not chosen me, but I have chosen you,' (John 15:16). For had he chosen us because he foreknew that we would be good, he would at the same time also have foreknown that we were to choose him...."⁷⁷ Calvin fully believed — and taught — that "since the arrangement of all things is in the hand of God, since to him belongs the disposal of life and death, he arranges all things by his sovereign counsel, in such a way that individuals are born, who are doomed from the womb to certain death, and are to glorify him by their destruction."⁷⁸

Yet, Augustine believed and defended the free will agency of humanity in God's work in salvation. Augustine wrote, "we could not act rightly except by this free choice of will."⁷⁹ In *City of God*, Augustine's chief argument against the mathematicians (astrologers) of his time was their reliance on human destiny to the detriment of free will, asking, "will they subject only mankind to the stars, men being the only creatures on earth on whom God has bestowed free will?"⁸⁰

Here, the omnipresence of God in time and space provides another troublesome factor in the supposed battle between foreknowledge and free will. Although Augustine and Calvin were

⁷⁷John Calvin, *The Institutes of the Christian Religion* 1559 edition [book online, .pdf format] Christian Classics Ethereal Library, <http://www.ccel.org/>, 596.

⁷⁸ Ibid., 604.

⁷⁹ Augustine, *The Problem of Free Choice* (Westminster, MD: Newman Press, 1955), 129.

⁸⁰ *City of God*, 188.

not privy to Einstein's unwitting contribution to the doctrine of omnipresence, both would have agreed that God was — and is — present at the moment every human action is decided.

However, humans do, by their own free will, freely choose outcomes seemingly contrary to the will of God. Is God present when people make these choices? The answer is “yes.” If God is present anywhere, He is present everywhere. Does God cause people to choose evil? The answer is “no.” As troubling as it may seem, divine presence does not imply divine instigation of human acts nor divine consent to the choices made in those acts.

This conclusion regarding divine presence and free will is best exemplified in salvation. Scripture teaches that God is “not wishing that any should perish, but that all should reach repentance;”⁸¹ Scripture also teaches that “those whom he foreknew he also predestined to be conformed to the image of his Son, in order that he might be the firstborn among many brothers. And those whom he predestined he also called, and those whom he called he also justified, and those whom he justified he also glorified.”⁸² Christianity has lived for centuries with the tension between God's foreknowledge in salvation and humanity's free will to choose salvation. Theological debates of the centuries have yet to resolve this tension.

In the meantime, Augustine's support of both free will and foreknowledge seems most visible in his own life. In a glimpse of the foreknowledge of God, Augustine's mother Monica dreamed of his salvation in his early days in Carthage. Augustine wrote that Monica's dream

⁸¹ 2 Peter 3:9.

⁸² Romans 8:29-30.

“gave new spirit to her hope, but she gave no rest to her sighs and her tears. Her prayers reached your presence and yet you still left me to twist and turn in the dark.”⁸³

Augustine may have twisted and turned for another decade or so, but his experiences in that time prepared him intellectually and spiritually for his service to the Church and humanity. As he reflected on his life as he wrote *Confessions*, Augustine saw the work of God in his own time and projected that work back to the beginning of the universe and time itself. The intellect of Augustine still asserts itself in scientific and theological discussions in the 21st century as it has in the previous sixteen centuries since his death. He may have chosen sin for a season, but Augustine’s will never took him where the grace of God could not find him — in space or in time.

⁸³ *Confessions*, 68-69.

Bibliography

- Augustine of Hippo. *Confessions* London: Penguin Books, 1961
- Augustine of Hippo. *City of God* London: Penguin Books, 1984.
- Augustine of Hippo. *The Problem of Free Choice*. Westminster, MD: Newman Press, 1955.
- Calvin, John. *The Institutes of the Christian Religion* 1559 edition. Book on-line. Christian Classics Ethereal Library, <http://www.ccel.org/>.
- E.A. Livingstone, ed., *The Concise Oxford Dictionary of the Christian Church*. Oxford: Oxford University Press, 2000.
- Hawking, Stephen. *A Brief History of Time*. Toronto: Bantam Books, 1988.
- Hawking, Stephen. *The Universe in a Nutshell*. New York: Bantam Books, 2001.
- Holy Bible, English Standard Version. Wheaton: Good News Publishers, 2001.
- Polkinghorne John. *Science and Christian Belief: Theological Reflections of a Bottom-Up Thinker* London: Society for Promoting Christian Knowledge, 1994.
- Ray, Christopher. *Time, Space, and Philosophy: Philosophical Issues in Science*. New York: Routledge, 1991.
- R.F. Patterson, ed., *Webster's Dictionary* Miami: P.S.I. & Associates, 1991.
- The Book of Common Prayer*, 1979 edition. The Church Hymnal Corporation, 1977.
- Warfield, Benjamin B. "Introductory Essay on Augustin and the Pelagian Controversy," *NPNF1-05. St. Augustin: Anti-Pelagian Writings*. Philip Schaff, Editor. Grand Rapids, MI: Christian Classics Ethereal Library, 1886.