





*J. Ward Moody*

# TIME IN SCRIPTURE AND SCIENCE: A CONCILIATORY KEY?



Time is a sacred thing; it flows from heaven. . . . It  
is an emanation from that place whence eternity  
Springs. . . . It hath some assimilation to divinity.

—Juan Eusebio Nieremberg<sup>1</sup>

**O**CCASIONALLY, WHEN DISCUSSING TEACHINGS FROM science and religion and how they mesh together, questions are posed that highlight apparent conflict between them. Three such questions are

1. What is the age of the earth? Is it seven days, 4.6 billion years, or something else entirely?
2. If death came with Adam some seven thousand years ago, how do we account for fossils?
3. Were Adam and Eve's bodies created miraculously in an instant, or was their creation an evolution over hundreds of millions of years?

And there are other questions that neither science nor religion satisfactorily answer. Two of these are

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4. When did time begin? Was there a start, or has it always existed?
5. How will the universe end, or will it continue forever?

These are interesting questions chosen because of a common theme: they arise because we do not know what time is and how it can or cannot behave.

Time is a broad topic, and questions regarding it often ask different things. Question 1 on the age of the earth asks how long something has endured in time. Question 2 on Adam, death, and fossils deals not with endurance but asks which of several events came first. Question 3 on when Adam and Eve were created asks how the rather short duration of history since Genesis squares with the much longer time frame offered by the fossil record. It also asks if a creation event is to be understood as an instantaneous or gradual act. And questions 4 and 5 ask what time itself is and how or whether it can spring into being or blink out of existence.

To seek the answers to these questions, it is wise to first pursue a better understanding of the nature of time itself. Therefore, I first present some basic reasoning about time. I lay out what philosophers have said about its nature and, where possible, give an opinion on which thinking makes the most sense. And I point out ways that modern ideas of time allow some seemingly disparate views of science and religion to coexist harmoniously.

## WHAT IS TIME?

First, what is time? Isaac Barrow, a mathematician at Cambridge and a mentor to Isaac Newton, wrote, “Because Mathematicians frequently make use of Time they ought to have a distinct idea of the meaning of that Word. Otherwise they are Quacks.”<sup>2</sup> Thus warned, let me first tackle definitions. But this is not easy. The great fourth-century Catholic philosopher St. Augustine wrote, “For what is time? Who can easily and briefly explain it? Who can even comprehend it in thought or put the answer into words? Yet is it not true that in conversation we

refer to nothing more familiarly or knowingly than time? And surely we understand it when we speak of it; we understand it also when we hear another speak of it. What, then, is time? If no one asks me, I know what it is. If I wish to explain it to him who asks me, I do not know.”<sup>3</sup>

St. Augustine’s humble humor is delightful as well as insightful. With tongue in cheek, I offer these statements: “Time is what keeps everything from happening at once,” and “Time is just one darn thing after another.” Besides being jokes, both are actually decent philosophical statements. The first says that time imposes structure and order. It is a space that helps organize the things within it. The second is a different approach. It says time is not a space that forces organization, it is the organization itself—the sequencing of events. To be honest, these two statements are as profound as some of the thinking gets.

The temporal philosopher Huw Price remarked, “The philosophy of time has a long history, and is unusual even by philosophical standards for the durability of some of its main concerns. In a modern translation much of St. Augustine’s work on time would pass for twentieth-century philosophy.”<sup>4</sup> St. Augustine feared not to delve into esoteric topics. His writings on time are incisive and profound. In his temporal musings, he puzzled at length on many issues, but two deserve our attention here. One was the distinction between the past, the present, and the future. The past and the future to him seem unreal. The past has ceased to exist, and the future does not yet exist. And yet the present moment is determined by the past, and the future is determined by the present. So in some sense, past, present, and future must be real and must be interconnected. The second puzzle was about the apparent flow of time and why it should compel us forward, as it were, into new temporal spaces. Price puts it this way:

Two problems—[the past-present-future distinction and the flow of time]—remain the focus of much work in the philosophy of time. . . . Philosophers tend to divide into

two camps. On one side are those who regard the passage of time as an objective feature of reality and interpret the present moment as the marker or leading edge of this advance. Some members of this camp [share] Augustine's view that the past and future are unreal. Others take the view that the past is real in a way that the future is not so that the present consists in something like coming into being of determinate reality.<sup>5</sup>

I would enlarge upon this idea and assert that the division into camps can be reduced to asking if time is a *space* or *dimension* in its own right, or if it is a *journey through space*. Make that distinction, and from there different possibilities unfold.

## TIME AS A SPACE

Treat time as a space, and the present becomes a subjective notion. *Now* is dependent on one's viewpoint in much the same way that *here* is. In this view, there is no objective division of the world into the past, present, and future, just as there is no objective division of space into *here* and *there*. Such a view can lead to the conclusion that there is no significant difference between the past, present, and future.

It is tempting to stop and shout, "Of course there is a difference! The past is behind, the future is ahead and the present is now! Only dimwitted philosophers could get confused about such an obvious thing!" Indeed! But there *are* some physical, philosophical, and religious facts that challenge such a straightforward interpretation.

When Albert Einstein gave the world the special theory of relativity, he irrefutably established that events which are simultaneous to one person are not simultaneous to another person moving with respect to the first. To illustrate, suppose someone on Earth experiences two events at the exact same time. Call the moment these events occur "now." Someone moving rapidly past Earth would not see these events taking place at a single specific time. For this traveler, the event times will separate more and more with increasing speed until at

the speed of light one event happens instantaneously and the other event is infinitely distant in the future. If this person were traveling at the speed of light when time began, then we can say their existence between those events—which now stretches from the beginning of time to the infinite future—will be played out in what is perceived to be a single instant on Earth.<sup>6</sup> Taken to the extreme, if time is a space, we can argue that there exists an infinitely large set of perspectives, defined by all possible velocities and locations, that eternally experiences every point in time as being now. So a person's location in time can be different depending on his or her relative speeds, and it is philosophically possible to assign every instant of time as being “now” to someone. Therefore “now” is not unique, and thus neither are the past and future.

Leaving physics and relativity for a minute and turning to religion, let us enlarge the concept of “now” to be a single day. A day is twenty-four hours long, but when considering a universe that is billions of years old, a day is like an instant. So rename “now” as “today.” Consider, then, these scriptures and how they refer to “today”:

Hear my voice *while it is called today*, and harden not your hearts. (D&C 45:6; emphasis added).

Behold, *now it is called today* until the coming of the Son of Man, and verily it is a day of sacrifice, and a day for the tithing of my people; for he that is tithed shall not be burned at his coming.

For after today cometh the burning—this is speaking after the manner of the Lord—for verily I say tomorrow all the proud and they that do wickedly shall be as stubble. . . .

Wherefore if ye believe me, ye will labor *while it is called today*. (D&C 64:23–25; emphasis added)

The phraseology is curious. In the expression “while it is called today,” “it” sounds like an entity that we on Earth simply refer to as “today”; one can imagine that God, on the other

hand, may refer to or experience “it” differently. Perhaps God is subtly telling us that our “now” of “today” is not something that he experiences in the same way. If so, this is consistent with the notion that “now” is not the same everywhere in the universe.

There is an interesting conclusion possible from this manner of thinking. If every point of time can be called “now” according to some perspective, then the entire extent of time must already be created. You cannot say that, at this instant, a point of time is known to be “now” before it has come into being. Therefore all time—and with it, all past, present, and future—must already exist. If so, it is trivial for God to know the future.

The notion that the past, present, and future already exist is sometimes referred to as “block time”—time being a block of space that different people may move through differently. There are some philosophical problems with it. First, not all positions and speeds are actually realized. That is, there is not some entity located at all points in space that is moving with all possible velocities. Therefore, there is nothing physical forcing all the “nows” to be real. Second, when people interact with each other, they are always at the same location in time. So even if they can occupy different “nows” under different circumstances, there is no immediate interaction between these different “nows,” making their distinction less significant.

Even though block time allows for God to comprehend all time, I am uncomfortable with it from a religious perspective. It seems a bit like predestination, with our decisions already made and existing in a future that can only unfold to us as our “now” hyperplane passes through it. I see no purpose in living in such a universe. If I know anything about life from my own experience, it is that we have agency. Our decisions matter and are not made before we make them.<sup>7</sup> Time must allow for this.

## TIME AS A JOURNEY

Now consider time not as a space itself but rather as the marking of a journey through space. With this approach, the past is more readily separated from the future. The past is where you have been, and the future is where you will go. We exist on the thin membrane of “now,” plodding along with it into the future.

The moving slice of time in which we dwell is reality. Kurt Gödel, a Nobel Prize-winning mathematician and philosopher who thought a lot about time and reality, made this statement: “Reality consists of an infinity of layers of ‘now’ which come into existence successively.”<sup>8</sup> And the great philosopher René Descartes believed that “a material body has the property of spatial extension but no inherent capacity for temporal endurance and that God by his continual action re-creates the body at each successive instant.”<sup>9</sup> Time, therefore, is a divine process of re-creation. These points of view assert that once a moment has passed, so has the reality that experienced the moment. Therefore, Descartes suggests, God has to re-create reality for it to persist. This would be a constant act like Atlas holding up the sky. Indeed, it is hard to see how there would be room in God’s schedule to do anything beside the drudgery of eternally recreating “now.” Of course, one can disagree with Descartes and equally well assert that the material objects occupying “now” keep their reality and simply ride along with time.

The current moment is vanishingly small. One can argue that if reality only exists in a time space that is infinitesimally short, it does not exist at all. Fortunately, mathematics has already tackled the notion of a vanishingly small interval with the derivative. Derivatives are real and are the foundation of calculus. In a sense, “now” is like a derivative—the instantaneous snapshot of a smoothly evolving journey. Puzzling over time’s “fleeting moment” illustrates how hard it is to comprehend a derivative. (But it does make for an occasional nice poem!)

Regardless of other ramifications, one *can* take the view that “now” is the only thing that exists. The past behind us has



gone out of existence. The future does not yet exist. Time functions as the process of continually re-creating “now,” shunting the future to the past. Call this point of view “now only.”

How we get from the past to the future is guided by a concept called “causality.” Causality says that the cause of an effect must precede the effect in time and thus gives a unique order to “causally connected events.” That is, throw a rock at a window, and the window will not break before the rock hits it. Therefore, from all perspectives that can exist, the act of the rock being thrown will precede the breaking it caused. In this approach, time is the connection between actions. The moment of the connection is “now.” At this moment a unique reality emerges from all the potential realities that might be.<sup>10</sup>

Now we come to two alternatives. Once a moment has gone into the past, it may or may not be real in the sense that it physically exists. Something that is real can be visited, at least in principle. If you somehow had the means, you could go to the place where it resides and find it. But if it is not real, then it either never existed or in this case has ceased to exist; nowhere in the universe can you go and find it. A past that is no longer real is consistent with “now only.”

The other approach I will call “unfolding time.” This says that time is the “leading edge” of a space whose past is made real by the passage of time. The past is real, but the future is not. This contrasts with block time, in which both future and past are real and partitioned only by the moving membrane of time. So we have three possibilities covered: “Now only” says that only the present is real. “Unfolding time” says that the present and past are real but the future is not. “Block time” says that past, present, and future are all real. There are arguments in science supporting all three positions.

Turning thoughts to religion, again consider Doctrine and Covenants 45:6 and 64:23–25. The special significance of “it” being called “today” can also point to “now” being the salient part of what time is. “It” then becomes time itself, and “today” is the only part of it that is real—at least to us. We must do actions *now* for them to be *real*.

I am inclined to accept time as the leading edge that creates a real past out of an indeterminate future as suggested by unfolding time. Reality is the place currently occupied by now. Our past actions are made real by time and, being real, are something for which we are accountable to God. But I must confess that even though this appeals to me, I have no idea how a person could ever go back and visit the past. So perhaps “now only” has the greater argument and our past actions are real only for how they affect us and others now.

## TIME AND MOTION

Time may be a space, or it may be a journey. Either way, it is connected with how things change in the universe. This, in turn, means it is inextricably connected with motion, for change always involves motion. Bas C. Van Fraassen wrote, “Time is neither identical with nor entirely independent of movement, and it remains for us to determine the relation between them.”<sup>11</sup> To illustrate this important point, think of an example of time passing—a clock ticking, the sun rising and setting, commuting to work, and so on. Can you come up with an example where you can say, “OK, in this situation time passed, but there was no motion involved”? You might say, “I am going to sit motionless in a room, and I am going to do it for one minute.” So you sit there motionless and nothing changed in that room, right? Not quite. We measure time with ticks of a clock. If you did not have a clock and had not seen the seconds count to sixty, you would not have known you were there for a minute. So the passage of time is known from the motion inside the clock.

How about traveling? On a family vacation, were you ever guilty of pestering your folks with “Are we there yet? Are we there yet?” as time seemed to crawl? If you have a steady velocity and you know the distance to your destination, then the time to take the trip is well determined. Taking a trip is a supreme example of marking time with motion.

How about growing older? If a person ages, where is the motion there? This is more subtle, but aging involves changes

in our bodies, changes that come about because of molecular movements. Living, breathing, walking, talking, even the act of thinking involves movement on the molecular level.

I cannot think of a single example of time being proven to elapse without a reference to things moving. Henri Poincaré, a great physicist of the last century, took motion to be the defining nature of time and wrote, "Time should be so defined that the equations of mechanics may be as simple as possible."<sup>12</sup> That is a philosophical statement that serves us well—whatever the universe is or is not, it is simple. This notion, called Occam's razor, is one of the guiding principles of science. Leonhard Euler, a great mathematician and a decent person, enlarged upon Poincaré's idea with the assertion that time is properly defined when Newton's first law of motion holds true.<sup>13</sup>

The straightforward simplicity of Euler's idea makes it very solid. But not all agree. We go back to Isaac Barrow: "But does not time imply motion? Not at all, I reply, as far as its absolute, intrinsic nature is concerned; no more than rest; the quality of time depends on neither essentially; whether things run or stand still, whether we sleep or wake, time flows in its even tenor. Imagine all the stars to have remained fixed from their birth; nothing would have been lost to time; as long would that stillness have endured as has continued the flow of this motion."<sup>14</sup> Barrow is pointing out that stars in space take fixed, well-defined times to move in their orbits. Imagine a formerly star-filled universe with the stars removed. Barrow says time would flow in that space just as surely and at the same rate as if the stars were present. We could not prove it—that is the problem—but he says it would be there regardless. Isaac Newton the student says, "Absolute, true, and mathematical time, of itself, and from its own nature, flows equably without relation to anything external, and by another name is called duration. . . . For times and spaces are, as it were, the places as well of themselves as of all other things."<sup>15</sup>

Regardless, most agree that time is connected to motion. Gottfried Leibniz expressed the thoughts of many when he

wrote that for “a duration without changes, it would be impossible to determine its length.”<sup>16</sup> Or in other words, time can only be defined when there are objects changing and we can measure the change. If nothing happens, no time elapses.

We know that God’s motion is different from ours. Angels appear and disappear suddenly and otherwise come and go in ways we cannot come and go. If time and motion are connected, as most scientists believe, then it should be no surprise that God’s time can be as different from our time as his motion is. It should therefore neither puzzle nor distress us to measure or infer time scales in science that are different from those in scripture.

## THE FLOW OF TIME

Another aspect of time agreed upon by all points of view is that it advances. Newton reasonably argued that the rate of this advance is always the same. But this is not the modern view. C. S. Lewis touched upon time flowing at a different rate in *Perelandra*. Follow the conversation between his Eve, called the Green Lady, and his developing Christ figure, a traveler named Ransom:

“I was young yesterday,” she said. “When I laughed at you. Now I know that the people in your world do not like to be laughed at.”

“You say you were young?”

“Yes.”

“Are you not young to-day also?”

She appeared to be thinking for a few moments, so intently that the flowers dropped, unregarded, from her hand.

“I see it now,” she said presently. “It is very strange to say one is young at the moment one is speaking. But tomorrow I shall be older. And then I shall say I was young to-day. You are quite right. This is great wisdom you are bringing. . . .”

“What do you mean?”

“This looking backward and forward along the line and seeing how a day has one appearance as it comes to you, and another when you are in it, and a third when it has gone past. Like the waves.”

“But you are very little older than yesterday.”

“How do you know that?”

“I mean,” said Ransom, “a night is not a very long time.”

She thought again, and then spoke suddenly, her face lightening. “I see it now,” she said. “You think times have lengths. A night is always a night whatever you do in it, as from this tree to that is always so many paces whether you take them quickly or slowly. I suppose that is true in a way. But the waves do not always come at equal distances.”<sup>17</sup>

And so the Green Lady learned from a rather one-sided conversation with Ransom. She gave him credit for enlightening her while stating the greater insight. “The waves do not always come at equal distances” means that time need not always flow at an equal rate.

C. S. Lewis is making the point, well understood in his time from the special and general theories of relativity, that time is not the rigid, steadily flowing entity Newton describes. Rather its flow can be different at different locations. A good example is a black hole, where time slows down for those who approach the event horizon. Another famous example from the special theory of relativity is the twin paradox, where two identical twins age differently depending on how they travel. Time flowing at different rates depending on location and acceleration has been embedded in mainstream physics since about the 1920s.

The gospel agrees with this. In the question and answer session that is Doctrine and Covenants 130, the Prophet Joseph Smith writes, “In answer to the question—Is not the reckoning of God’s time, angel’s time, prophet’s time and man’s time, according to the planet on which they reside? I answer, Yes. . . . [The angels] reside in the presence of God, on a globe like a sea of glass and fire, where all things for their glory are

manifest, past, present, and future, and are continually before the Lord” (vv. 4–5, 7). Whatever else may be contained in these scriptures, they support the notion that time is different in different places. In Abraham 3:4 we read, “Kolob was after the manner of the Lord, according to its times and seasons in the revolutions thereof, that one revolution was a day unto the Lord, after his manner of reckoning, it being one thousand years according to the time appointed unto that whereon thou standest.” The same idea is found in 2 Peter 3:8: “One day is with the Lord as a thousand years, and a thousand years as one day.” I do not believe these passages need be interpreted as saying there is literally a calendar in Kolob that registers one thousand Earth years for every twenty-four-hour Kolobian day. Rather, I think the greater message is that for God time is not the same entity flowing in the same fashion that it does for us. As Alma the Younger states in Alma 40:8, “All is as one day with God, and time only is measured unto men.”

### TIME AS CHOICE

Simple interactions between moving bodies can alter their motion. How this motion is altered is derived from the laws of motion. These laws reveal how past motion has led to the present state, and how future motion will come from the present state. The laws of motion teach us that in any interaction, energy and momentum are conserved and are therefore the same after the interaction as they were before. Because total energy and momentum do not change with time we say that the equations of motion prefer no temporal direction.

But the science of thermodynamics discovered a unique principle called “the law of increasing disorder” that says the randomness or disorder of energy does change and increases with time. Several people, including the great astrophysicist Sir Arthur Eddington, have pointed out that this may be the only principle of nature that fundamentally prefers a direction of time. Eddington has suggested that time itself may be related to or defined by this law: “Let us draw an arrow arbitrarily. If as we follow the arrow we find more and more

of the random element in the state of the world, then the arrow is pointing towards the future; if the random element decreases, the arrow points towards the past. . . . I shall use the phrase 'time's arrow' to express this one-way property of time which has no analogue in space."<sup>8</sup>

The concept of disorder can be illustrated by a bedroom. You yourself have to take the energy and the time to make sure things are hung up and put away neatly. If you do not expend the energy to carefully put things away, they end up in random places. Nature by itself will not hang up the clothes. In the same way, nature by itself will not create greater order in any process but will drive things to greater disorder with increasing time. Clothes will wear out, cars will break down, tree leaves will fall and decay. Things need to be repaired or replaced, using organized energy, to preserve the status quo or to improve things. When you think about it, much of what we do with our time and energy in this life is to counter the effects of this law.

Here is speculation that must be viewed as such. Adam and Eve lived in a garden where they did not have to farm to obtain food. The Garden of Eden took care of itself and brought forth fruit spontaneously without labor. Does this mean the law of increasing disorder was not in effect for them? After the Fall they were cast into a world where they earned their bread by the sweat of their brow, fighting, as we do today, the consequences of increasing disorder. Was the Fall of Adam an injection into a world where the law of increasing disorder, and hence time, functions as we know it now, while before in Eden it did not? Can we say, then, that time as we know it began at the Fall?

Alma the Younger, in reference to the Fall of Adam, wrote, "And thus we see, that there was a time granted unto man to repent, yea, a probationary time, a time to repent and serve God" (Alma 42:4). The Fall cast Adam and Eve into a world where they could choose for themselves. They could choose before then, but not in the same full sense that they could after the Fall. If time as we know it and choice as we know it

both began at the Fall, then perhaps time as a series of events can be recast as time being a progressive series of choices or decisions. Time is what facilitates choice. We have been placed on this temporal earth to make choices. The march of time is going to make us choose no matter what. You chose to read this book. When you have finished reading you will choose to do something else. You do not have a choice about making choices: time is going to force you to make them.

Amulek says in Alma 34:32–33, “For behold, this life is the time for men to prepare to meet God; yea, behold the day of this life is the day for men to perform their labors. . . . For after this day of life, which is given us to prepare for eternity, behold, if we do not improve our time while in this life, then cometh the night of darkness wherein there can be no labor performed.” There are certain actions we do here and certain choices we make. When we go to the next life, we do not act and choose in the same way we do now. God has already made the choices that brought him to his exalted station, so he does not now need to choose in the same sense that we choose. Therefore, it makes sense that his time is not our time in the same way that his choices are not on the same plane as our choices. Could this be part of what he is communicating when he says that time is only measured unto man?

## THE BEGINNING OF TIME

In the twentieth century, astronomers and theoretical physicists concluded that the amount of past time is finite and thus there was a beginning to our universe. This beginning was a perfectly ordered, creative infusion of energy into space called the big bang. In the 1960s there was a competing theory, the steady state, which says the universe has always been and will always be in its current state. The steady state theory has been rejected in the face of overwhelming evidence of a creation that occurred about 13.7 billion years ago. Today only the big bang theory is considered viable by the vast majority of scientists.



Was the big bang the beginning of time as well? Was there no time anywhere, then suddenly there *was* time? To put it another way, was there a big bang button that existed somewhere that God *took the time* to push? Or did all existence, including that of God, begin at once in some defining event that heralded the beginning of all other events and thus the start of time itself?

How can time begin? How can there be nothing that suddenly becomes something? It makes no sense. But how can time *not* begin? Can it just go forever both to the past and future? This does not seem to make much sense either. But reject both possibilities and all that is left is a conundrum. Our mortal minds seem to have no capacity to comprehend even the *possible* answers to the question of time beginning.

In the King Follett Discourse, the Prophet Joseph taught, “Is it logical to say that a spirit is immortal and yet have a beginning? Because if a spirit of man had a beginning, it will have an end, *but it does not have a beginning or end.*”<sup>19</sup> Elsewhere in the same speech he declares matter to also be eternal, with neither beginning nor end. So if time equates with existence of matter and spirits, there was no beginning to time.

St. Augustine attempted a resolution to this question by postulating that God is “outside of time.” Writing in *Confessions XI*, he states that time itself was part of God’s creation. There was simply no before, and all who question what God was or what he was doing before time began are “still full of their old carnal nature.”<sup>20</sup> The great cosmologist Stephen Hawking stated, “Hubble’s observations suggested that there was a time, called the big bang, when the universe was infinitesimally small and infinitely dense. Under such conditions all the laws of science, and therefore all ability to predict the future, would break down. If there were events earlier than this time, then they could not affect what happens at the present time. Their existence can be ignored because it would have no observational consequences. One may say that time had a beginning at the big bang, in the sense that earlier times simply would not be defined.”<sup>21</sup> Augustine and Hawking are

saying essentially the same thing: before the creation of the universe, time as we know it had no meaning. It may have meaning to God, but it has no meaning for us.

Alan Guth is a theoretical physicist who came up with the idea of inflationary cosmology, a tenet of the big bang theory. Once, after presenting at a conference, he was asked, "What happened before the big bang?" Everyone snickered and wondered what he would say. We thought he would laugh back, but he did not. Instead he said rather soberly, "I think about that all the time. I do not know the answer but I keep thinking about it."<sup>22</sup> The Prophet Joseph Smith's firm declaration that matter and spirit have no beginning is as rational as any philosophy. My own feeling is that the big bang may have marked a beginning of time for our universe and was likely a momentous event of eternal significance. But it was not the beginning of God nor of existence itself.

## THE END OF TIME

As a child in church, I heard a speaker give an analogy of eternity. Said he, "Consider a one-mile square granite block. Every year a sparrow comes and pecks at it once. Eternity is longer than the time it will take to erode the block to dust." That was a very effective analogy to a Valiant A. I must confess that I was so intrigued by it that I did the math and estimated it would be about  $10^{21}$  seconds or thirty trillion years. That is a very long time, but it still has an end. Eternity has no end.

A good friend and scholar, David Derrick, once pointed out that when you have a limitless abundance of something, its value is impossible to appreciate. For example, if you have all the gold in the world, then what worth is gold? The story goes that there was a rich man who had lived a good life and wanted to take his wealth with him when he died. So he pleaded with the Lord, who finally said, "OK, we will liquidate your estate, turn it into gold, and deliver it to you in a suitcase at the pearly gates." When he died, sure enough, there was the suitcase filled with gold! St. Peter greeted him with "Welcome! You have lived a wonderful life. Come in!

Hey, what's in the suitcase?" The man opened it, and St. Peter exclaimed, "Oh, gold. That's nice. What did you want to bring street pavement for?"

Eternity is most often taught as being an infinite supply of time. Can you feel hurried to accomplish anything if you have an infinite amount of time to do it in? No—like infinite gold, it would be of small value. As David pointed out, our time is not infinite—we have deadlines, death being a particularly impressive one. God reminds us of them continually. He teaches us that they are important and that we should prepare for them. Is it possible that this life is the place where we learn for the first time what the "progression" of eternal progression is: change accomplished through actions which are urgent only because we have limited time in which to do them? Maybe one of the points of the Fall of Adam is the limited time. Maybe the stress of meeting deadlines is a great education on the blessing of time.

The big bang admits to no end of time. It speculates on different possible expansion rates and distributions of matter in the universe as it ages but assumes that the universe will continue forever without time reaching an end.

Scripture talks of eternity which has no end. Yet it also talks of an end to time. The interesting phrase "time no longer" comes up several times. Doctrine and Covenants 88:110 says, "And [the angel] shall stand forth upon the land and upon the sea, and swear in the name of him who sitteth upon the throne, that there shall be time no longer." If the definition of time spoken here is a space in which we act, then the end of time would mean the end of actions, which makes no sense. Actions clearly follow this: Satan is bound for a period of time and loosed for a season, there is battle, and so on. The Greek version of the book of Revelation speaks of the same events with words indicating that "time" means "no more delay."<sup>23</sup> That may be simply what it means—no more waiting around for the final acts to take place.

But if time means the ability to choose as we do now, then the end of time may refer to the end of the probationary period

given to man that started at the Fall. It would not be the end of all actions but rather the end of the *kinds* of actions we do on this earth—the kinds that began when our probationary time started. If so, this supports God being outside the time of man, since he did not fall with Adam, and outside of the effects of the law of increasing disorder—my expansion to Eddington’s idea. Spirit and matter would still be eternal, existing before Adam fell and before our clocks started ticking.

Well, it is great fun to think about these things. I hope there are some useful insights in here somewhere. I end my thoughts with St. Augustine’s wonderful comment on those who speculate on the creation of time. Said he, “How, then, shall I respond to him who asks, ‘What was God doing *before* he made heaven and earth?’ I do not answer, as a certain one is reported to have done facetiously (shrugging off the force of the question). ‘He was preparing hell,’ he said, ‘for those who pry too deep.’ It is one thing to see the answer; it is another to laugh at the questioner—and for myself I do not answer these things thus. More willingly would I have answered, ‘I do not know what I do not know,’ than cause one who asked a deep question to be ridiculed—and by such tactics gain praise for a worthless answer.”<sup>24</sup> With that, I need to thank you for, well, your time.

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## NOTES

1. *Of Temperance and Patience*, trans. Henry Vaughan, in *The Works in Verse and Prose Complete of Henry Vaughan, Silurist*, ed. Alexander B. Grosart (Lancashire, UK: n.p., 1871), 4:108; spelling modernized.
2. Isaac Barrow, quoted by Paul Davies, *About Time* (New York: Simon and Schuster, 1995), 183.
3. St. Augustine, *Confessions*, 11:17, in *Confessions and Enchiridion*, trans. and ed. Albert C. Outler, Christian Classics Ethereal Library, <http://www.ccel.org/ccel/augustine/confessions.xiv.html>.
4. Huw Price, *Time’s Arrow and Archimedes’ Point: New Directions for the Physics of Time* (New York: Oxford University Press, 1996), 12.
5. Price, *Time’s Arrow*, 12.

6. There are exact requirements not fully explained for this to be true. The traveler must be moving toward the location of one event and away from the other. And they must be passing Earth when the person on Earth sees the two events occur simultaneously. These constraints, though, do not weaken the principle.
7. There is much in the science of quantum mechanics that supports this point of view. Unfortunately I do not have the time or expertise to present it here.
8. Kurt Gödel, "A Remark about the Relationship between Relativity Theory and Idealistic Philosophy," in *Albert Einstein: Philosopher-Scientist*, ed. P. A. Schilpp (La Salle, IL: Open Court, 1949), 557.
9. G. J. Whitrow, "The Laws of Motion," *British Journal for the History of Science* 5, no. 3 (June 1971): 226.
10. There are some who argue that causality is not necessary. See Julian Barbour's *The End of Time: The Next Revolution in Physics* (New York, Oxford University Press, 2001) for an interesting presentation of this odd point of view. I do not dwell on it because I consider it to be too unlikely.
11. Bas C. van Fraassen, *An Introduction to the Philosophy of Time and Space* (New York: Random House, 1970), 15.
12. Henri Poincaré, *The Foundations of Science*, trans. G. B. Halsted (New York: Science Press, 1913), 227–28.
13. Leonhard Euler, *Opera Omnia*, ed. F. Rudio and others, Series III (Berlin Teubner, 1911–67), 2:376–83.
14. *The Geometrical Lectures of Isaac Barrow*, trans. J. M. Child (La Salle, IL: Open Court, 1916), 35–37, quoted in van Fraassen, *Philosophy of Time and Space*, 22.
15. Isaac Newton, *Principia*, vol. 1, *The Motion of Bodies*, trans. Andrew Motte, rev. Florian Cajori (Berkeley: University of California Press, 1960), 6, 8.
16. Gottfried Leibniz, *New Essays Concerning Human Understanding*, trans. A. G. Langley (La Salle, IL: Open Court, 1916), book 2, section xv, 11.
17. C. S. Lewis, *Perelandra* (New York: Macmillan, 1965), 60.
18. Arthur Stanley Eddington, *The Nature of the Physical World* (New York: Cambridge University Press, 1929), 69.

19. Stan Larson, "The King Follett Discourse: A Newly Amalgamated Text," *BYU Studies* 18, no 2 (1978): 11. Italics are from this source and indicate words found only in the Wilford Woodruff manuscript.
20. Augustine, *Confessions*, 11:12.
21. Stephen W. Hawking, *A Brief History of Time: From the Big Bang to Black Holes* (New York: Bantam Books, 1988), 9.
22. Alan Guth, "Astrophysical Ages and Time Scales," lecture at Hilo, Hawaii, February 5–9, 2001.
23. Private communication with Michael D. Rhodes.
24. Augustine, *Confessions*, 11:14.