Time in Eternity

Pannenberg, Physics, and Eschatology in Creative Mutual Interaction

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Introduction

Thy reign come
—Matthew 6:10

Is there conceivable any positive relation between the concept of eternity and the spatio-temporal structure of the physical universe? . . . This is one of the most arduous, but also one of the most important questions in the dialogue between theology and natural science. . . . Without an answer to the question regarding time and eternity, the relation of God to this world remains inconceivable.

—Wolfhart Pannenberg, “Theological Questions to Scientists”

A. THE TOPIC AND MOTIVATION FOR “TIME IN ETERNITY” IN THEOLOGY AND SCIENCE

The topic of this volume, generically described as “time and eternity,” arises in and is shaped specifically by two distinct but interrelated contexts in philosophical and systematic theology. The first context involves the relation between God and the world, specifically the relation between the eternity of God and the temporal character of the world. Traditionally,
the divine eternity was viewed either as timeless or as unending time. Some twentieth-century Trinitarian theologians such as Wolfhart Pannenberg, however, go beyond both of these views to depict eternity as fully temporal and the source of creaturely time. The second context is the relation between the eternity of the eschatological New Creation and time in the present creation. This second context is made more complex when the New Creation is understood as grounded in God’s radical act at Easter. In this case, according to many New Testament scholars and systematic theologians, the New Creation arises out of the transformation of the present creation in a way that is analogous to the bodily resurrection of Jesus.1 In this volume I will treat the topic of time and eternity in both of these contexts, drawing out the intrinsic relations between them.

My motivation for exploring the topic of time and eternity in both contexts is multilayered. The primary motivation is to respond aggressively to the direct challenge from physics to the topic of time and eternity in its first context just cited. Here Albert Einstein’s special theory of relativity seems to most physicists and philosophers to challenge the temporal character of the world, and thus indirectly to challenge the temporal character of eternity when relativity is imported into the theological conversation about God. According to these scholars, relativity’s most convincing interpretation is that the world is not dynamic, one in which time is “flowing.” Instead, they argue that the world is static, a timeless world, or “block universe,” where the flow of time is a subjective illusion. Physics and cosmology even more severely challenge the topic of time and eternity in its second context—the eternity of the eschatological New Creation in relation to time in the present creation—when the scope of eschatology expands beyond individual human life, beyond collective human history, and beyond the evolutionary history of life on earth to embrace the universe as a whole—as God’s creation—and therefore as the subject of God’s radical transformation into the New Creation. Here, in discussing “time and eternity,” we must inevitably face the challenge that scientific cosmology poses to Christian eschatology, one in which the scientific predictions of a cosmic future of “freeze” or “fry” undercut, even render meaningless, an eschatology based by analogy on the bodily resurrection of Jesus.

Over the past decades additional issues have arisen in the dialogue between theology and science and motivate this volume. 1) The beginning of our universe at t = 0 (the “big bang”) and the anthropic principle
as a response to the universe’s fine-tuning for life are deeply consonant with the doctrine of creation *ex nihilo* (creation out of nothing). In the background, though, has been a clear “dissonance” that would eventually need to be addressed thoroughly: if we welcome \( t = 0 \) and the anthropic principle into the dialogue with theology we cannot ignore the challenge raised by the “freeze or fry” scenarios to Christian eschatology.

2) Granted that we interpret biological evolution in rather general terms as the means by which God creates the diversity of life on earth, following the doctrine of *creatio continua* (continuous creation). But can we do this in a way that goes beyond what I call “statistical deism,” in which God sets up the general laws and the initial conditions at the beginning of the universe and then simply allows the natural processes to unfold entirely on their own? Instead, can we deliver on a robust form of theistic evolution—one in which God is understood to act objectively in the temporal development of natural processes but without intervening in, subordinating, and violating these natural processes? And if we are successful in developing such an account of non-interventionist objective divine action (or what I refer to as “NIODA”), will this in turn help us address the challenge raised by science to Christian eschatology?

3) Finally, if we can develop a robust version of theistic evolution by employing NIODA, how do we understand God’s action in nature in relation to the problem of “natural evil,” such as suffering, disease, death, and extinction, when natural evil is constitutive of evolutionary biology and not a consequence of an historical Fall? The best response is clearly to start with the cross in which Jesus takes on the suffering of humanity, and extend his embrace of suffering to the suffering of all life on earth. But the theology of the cross demands that we move ahead to the resurrection of Christ, and this in turn leads directly to eschatology and thus the inevitable challenge from physics and cosmology (for details, see appendix to the introduction, section A).

Progress in the discussion of these issues has required long periods of intense scholarly research by individuals and international conferences in theology and science. New summits of understanding have been reached, and from them have arisen both a rewarding sense of accomplishment and a growing sense of impending problems that increasingly require attention. Some of these problems have been long known in general terms but are now seen in a clearer and deeper way, while others
were unexpected and have yet to be explored in any depth. Both by the inner logic of each of the issues discussed above and by their mutual entailment as a sequence of issues, the overall result has been a conceptual vector leading inexorably to the “eye of the hurricane,” the mutual challenge between theology and science. On the one hand, at the centerpiece of Christian faith we encounter the bodily resurrection of Jesus of Nazareth on Easter as the normative instance of God’s now-and-coming eschatological transformation of the creation in all its dimensions into the New Creation. Since these dimensions include what science understands as the physical universe, eschatology obviously challenges the scientific predictions for the future of the universe as “freeze or fry.” On the other hand, physics and cosmology challenge the truth and meaningfulness of any Christian eschatology that affirms the physical/biological transformation of this world into the New Creation, since all forms of biological life will become impossible long before the universe recollapses and fries, let alone if it expands and freezes forever. In essence, we seem to be at a fundamental impasse between theology and science.

At the same time, progress in biblical studies has led to a deepening reaffirmation of the centerpiece of Christian faith, the bodily resurrection of Jesus. A growing wave of New Testament scholars have made an increasingly compelling case for the bodily resurrection of Jesus in contrast to those who continue to demythologize the empty tomb accounts and reduce the appearance traditions to the psychological projections and existential experiences of the disciples. With the ascendancy of the former group of biblical scholars, the connection between the physical dimension of the bodily resurrection of Jesus and its cosmic significance for the eschatological future of the universe becomes vastly more pronounced, requiring that we now take scientific cosmology explicitly into the conversation. In addition, many theologians writing specifically on Christian eschatology acknowledge that any eschatology whose scope includes not only personal salvation and social transformation but also environmental justice must engage the natural sciences. This engagement with the natural sciences should lead once again to the theological encounter with cosmology. Unfortunately, most scholars in both New Testament studies and Christian eschatology ignore the overwhelming challenge of science to eschatology (see appendix to the introduction, sections B and C).
The most fruitful way to explore all of these issues, I believe, is to inquire into the relation between time and eternity in both of the contexts described above: the eternity of God and the temporal character of the world; and the eternity of the eschatological New Creation and the temporal character of the present world, where the term “present” serves to emphasize its difference from the eschatological New Creation that arises from it. First, however, I will clarify some basic terms that will hold for this entire volume. By “time” I mean our ordinary, daily experience of time—with its fleeting present moment seemingly lost forever as it vanishes immediately into the past, only to be replaced by what was before a future of uncertain possibilities. By the “eternity of God,” I mean something much richer and more complex than its two traditional alternatives: 1) Eternity as timeless on the one hand, in which all the distinctions between the rushing moments of our life, each with their unique pasts and futures, are lost as they are conflated into the dimensionless eternal “nunc,” a single structureless and unchanging “now.” 2) Eternity as unending flowing time on the other hand, in which we are again imprisoned in a momentary present that immediately vanishes into a lost past only to be replaced by an event emerging contingently from an ever inaccessible future. Here the only difference between eternity and ordinary time is that the temporal process of this world simply continues forever.

Instead, following most twentieth-century Trinitarian theologians, I understand eternity to be the boundless temporality of the Trinitarian God, a lavishly rich “supra-temporality” that is both the source and fulfillment of the temporality of creation: the temporality we experience in nature, in our lives, and in history. This is an eternity that flows out of the endless perichoretic dance of the divine persons ceaselessly taking place within the unity of Trinitarian community. By the “eternity of the New Creation,” I refer to the gift of true temporality of the Trinity to our world, both as it is to be and as it is being transformed into the New Creation by God’s radically new act beginning with the bodily resurrection of Jesus at Easter. It is an eternity of renewed and transformed creaturely life in which creatures retain their distinctive personal and social histories along with the specific temporal events of past, present, and future underlying them and contributing to their intrinsic identity, but without the separation of times into a past that is forever gone and a future that is never available in the lived moment such as in the kind of temporality...
we now experience. The eternity bequeathed to the New Creation by the Trinity is a form of true temporality, a structured duration of diversity in unity. It is an eternity that holds all the events of the creation in an overarching and differentiated unity, a unity that brings together our lived experience of the flow of fragmentary present moments without subsuming their distinctions or separations into one timeless moment. It is an eternity in which we will experience everlasting life with all of our present life available to enjoy endlessly in an ever-widening and deepening experience.

The temporality of the New Creation is also a time of the redemptive purging and healing of our lives. Each event of sin that you and I commit, personally and through our participation in broken family and social, economic, and political institutions, must finally be confessed and, then mercifully, forgiven and forgotten (Jer. 31:31). Yes, each act of virtue (through the activity in us of God’s grace, our brokenness notwithstanding) is forever celebrated as a redemption given us freely and undeservedly by Jesus Christ. This forgiveness takes our own deserved judgment up into the suffering that Jesus bore and replaces our brokenness with Christ’s wholeness and healing balm. I believe it extends to all creatures—wherever there is biological death even if there is no moral sin. Thus eternity is not only a time of endless rejoicing in all that is true and good and beautiful, it is also a time of leaving off and destroying of all that is wrong and false and ugly in this creation through the amazing grace of justice and mercy bequeathed to all of life in the Incarnation, life, ministry, death, and Resurrection of Christ. In short, it is a mystery in which all events in our lifetime—including life’s intrinsically unnecessary but, in this world inevitable, death—is taken up into the endless eternity of the New Creation through the power of Christ the eschaton. Each individual life is purged, forgiven, restored, and fulfilled just as the whole history of the world is purged, forgiven, restored, and fulfilled in the first Easter—and this even while all life and history await their full consummation in the eschatological future. As Christ’s resurrection has both revealed the future of the cosmos and redeemed the entirety of its history—and therefore every moment before and since the Easter event—so with Christ’s future return “all will be well and all will be well and every kind of thing will be well.”3 This redemptive aspect of Christian eschatology requires a careful exposition and analysis of a number of deeply con-
nected theological doctrines and themes that lie beyond the scope of this volume. Nevertheless it should be understood that it lies within the wider theological context presupposed for this book.

In sum, then, the theme of “time and eternity” engages both (1) the relation between the ordinary time of our experienced life and the eternity of God, and (2) the transformation of ordinary time into the eschatological eternity of God’s New Creation based by analogy with the bodily resurrection of Jesus as transformation. By situating these vital theological questions within the heart of the growing dialogue and interaction between theology and science, I hope to address what is arguably the most difficult and the most promising topic for this interaction as emphasized by Pannenberg in the epigraph to this introduction.

To undertake this interaction, however, requires that we face a profound challenge to the assumption of “flowing time” that is both ubiquitous to theology in general and that clearly pervades the specific theme of this volume, “time and eternity.” As indicated above, this challenge is posed by the view of the majority of physicists and Anglo-American philosophers of time who unabashedly defend a static, “block universe” view of nature as timeless. According to the block universe view, the flow of time is strictly subjective; in the objective world, the past, present, and future are equally real. For anyone working on the interaction between theology and science, such a challenge is unavoidable because the strongest case for the block universe view arises from one of the two fundamental theories in contemporary physics as it is most often interpreted philosophically: Einstein’s special relativity (SR). Until the twentieth century, scholars supporting timelessness waged a pitched battle on basically philosophical terms with those defending flowing time. Since the birth of relativity in 1905, however, an immense new arsenal of seemingly overwhelming force has been supplied to the defenders of timelessness, and their position has been reinforced by such outstanding scientists and mathematicians as Bertrand Russell, Hermann Minkowski, and, of course, Einstein himself. The depth of their commitment to timelessness is enshrined in the words of Einstein’s remarkable letter to the widow of his recently deceased friend: “Michele has preceded me a little in leaving this strange world. This is not important. For us who are convinced physicists, the distinction between past, present, and future is only an illusion, however persistent.”
This book takes up the challenge posed by the block universe understanding of time by articulating and defending a new argument in support of a flowing time interpretation of special relativity, an issue about which I have thought for many years and, more recently, which I have vigorously studied. Such an argument for flowing time in light of SR can be of value not only to the theology and science community but also to philosophers and scientists engaged in the flowing time/block universe debate. More broadly, it is my hope that the overall developments in this volume will both address the specific challenges outlined above and more generally provide a fruitful example of how Christian theology and contemporary philosophy and physics, cosmology, and mathematics can constructively interact and inform one another. To accomplish this task I will rely on a method that I have developed over the past decade for the productive interaction between theology and science, one that I call Creative Mutual Interaction (CMI).

According to CMI, a robust philosophical interpretation of scientific theories can lead to a creative reformulation of theological doctrines. But in what might be considered a startling move, a theology that is so reformulated in light of science can also lead to suggestions for creative new research programs in science and in the philosophy of science. I see this book as an opportunity to set out a fully developed example of CMI, one that will test the viability of this method as it constructively engages a matter at the very heart of the interaction between theology and science: time and eternity and its implications for Christian eschatology in light of physics and scientific cosmology. I will say a bit more about CMI shortly, but first I want to discuss the theological focus of this volume: the writings of Wolfhart Pannenberg.

B. THE FOCUS ON WOLFHART PANNEMBERG

Many theologians have been influential in persuading me that the doctrine of the Trinity provides the most appropriate context for exploring the theme of “time and eternity.” In particular, I have been moved by Karl Barth’s beautiful conceptualization of creaturely time as “embedded” in God’s eternal life, by Elizabeth Johnson’s compelling imagery of the perichoretic life of the divine Persons, by Catherine Mowry La-
Cugna’s celebration of the retrieval of the Trinity in the twentieth century, by Jürgen Moltmann’s insistence on the economic Trinity in creation and creation in the immanent trinity, by Ted Peters’ development of the theme of “temporal holism” in his writings on eschatology and his claim that we find the unambiguous goodness of creation in the eschatological future, and by Karl Rahner’s pivotal insight that the economic and the immanent Trinity are one and the same (i.e., Rahner’s Rule). In light of these visionaries, and intending to reflect the overarching point upon which they all seem to agree—namely that eternity is fully temporal and the source of creaturely time—the title of this volume is “time in eternity.” Nevertheless, the theological content is based explicitly on the work of Wolfhart Pannenberg.

Pannenberg’s profound insights on “time and eternity” draw from classical as well as contemporary philosophy and from the entire history of Christian theology as it is woven together by him with astonishing clarity, depth, and fresh insight. He uniquely portrays the endless richness of the temporality of the Trinitarian divine life as a “differentiated unity.” This eternity is unique in offering the gift of structured duration to human experience and to the natural world, a duration that preserves the distinctions between the past and future of every moment without separating them into irretrievable realms such as we experience in ordinary time. Pannenberg understands God as Trinity to be at work in the world, both continually appearing in history as the “arrival” of the immediate future and as reaching back from the eschatological future to the Easter event in order to transform the world into the New Creation.

In a breathtaking move, Pannenberg thematizes the latter as “prolepsis”: although the New Creation still lies in our future, or more correctly in the “future of our future,” the Easter event is already and normatively a manifestation in our time and history of what is the not-yet still-future eschatological-apocalyptic destiny for all the world. In the Easter event, the New Creation, having been transformed by God out of the original creation, reaches back over and into, and is manifested proleptically in, world history. Then, through this proleptic character of Easter, all of history prior to it and following it is filled with the promise of New Creation.

Throughout his writings, Pannenberg engages both the natural sciences and the philosophy of science. To deepen that engagement on the theme of “time and eternity,” much of his work used in this volume...
must first be reconstructed within the framework of contemporary physics, cosmology, and mathematics. This is because in Pannenberg’s theology his language tends to presuppose the way both ordinary language and classical physics treat time and space. I hope that what I bring to the table, as both a theologian and a physicist, will help in this process of “friendly reconstruction” in light of science. But let me be clear here. The purpose of this book is not what has become routine in the academy: first a critical engagement of Pannenberg’s work, then an exposition of his theological “weaknesses,” and then an advance of one’s own theological agenda. Instead, the goal of this book is to “take him at his word,” and to explore the “what if” question: What if much of what Pannenberg claims is deeply right about “time and eternity,” even though some reconstruction is first needed to take into account contemporary physics, cosmology, and mathematics? What can we learn from Pannenberg about time and eternity both as a thematization of God’s present relation to the world and of God’s eschatological relation to the New Creation and thus proleptically to the world now? From here, I pursue a novel way of assessing and demonstrating the fruitfulness of Pannenberg’s reconstructed theology by exploring what it has to offer for a dialogue with scholars in the philosophy of time and with theoretical physicists and cosmologists. And this, in turn, reflects the method of CMI that structures this volume.

C. VOLUME OVERVIEW

This section will present a detailed outline of the volume, noting the division of chapters as parts one and two based on CMI and orienting the reader to the topics of each chapter. First, however, I would like to make some general comments about CMI, the method which structures the entire volume. I would also like to summarize the three key concepts that arise in discussing Pannenberg’s work on time and eternity—duration, co-presence and prolepsis—since they are so pervasive in the volume and so important to its overall argument.

As mentioned above, over the past decade I have developed and tested a new and very general interdisciplinary method for relating theology and science that I call Creative Mutual Interaction (CMI). In CMI,
theology is first reformulated in light of contemporary science. Once reformulated, such a theology is then available as a source of insights for potential research directions in contemporary science and the philosophy of science. Through this double move it is my hope that Christian theology can articulate the New Testament kerygma forcefully and evocatively to today’s scientifically informed culture as well as be an engaging voice offering suggestions for potential research in the dialogue with scientists and philosophers of science. CMI includes five paths for importing the discoveries of the natural sciences into constructive theology where, as with any theological source, they are incorporated into theology through critical reflection and philosophical analysis. These paths represent the traditional theological method of fides quaerens intellectum (faith seeking understanding). But CMI goes on to offer something quite new: it includes three additional paths in which such a reformulated theology can inspire new worldviews for science as well as new research directions in science, including new theories and new criteria of choice between existing theories. (For readers unfamiliar with CMI, see the appendix to this introduction, section D.)8

Over the past decade I have used CMI in articles that relate various specific topics in theology and science, such as the doctrine of creation and big bang cosmology or non-interventionist divine action and quantum mechanics. This volume is the first time that CMI plays an explicit and ubiquitous role in structuring a book-length work. Accordingly, it is organized into two parts to reflect the structure CMI: part one utilizes the first five paths to reformulate theology in light of science and part two, the second three paths to suggest research ideas to science and the philosophy of science in light of this reformulation.

During the past decade I have also constructed a very specific set of guidelines to monitor the interaction between theology and science as shaped by CMI when the theological topic is Christian eschatology and the scientific topic is cosmology. These guidelines are meant to keep theological reconstruction from going in directions that are clearly unhelpful and to lead such reconstruction to areas that seem most likely to bear fruit. Used extensively throughout this volume, these guidelines play a crucial role in overcoming the challenge from cosmology to eschatology and in helping pave the road for a continuing constructive conversation between such a revised theology and the natural sciences. I invite
the reader to explore the details regarding these guidelines in the appendix to the introduction (section E).9

It is appropriate and important to note explicitly here how Pannenberg’s writings on the bodily resurrection of Jesus have influenced me in the formation of these guidelines for relating theology and science. Guideline 1, in particular, plays a crucial role in taking us beyond the challenge posed by scientific cosmology to eschatology, with its predictions of “freeze or fry.” Guideline 1 entails the rejection of two philosophical assumptions about science: the argument from analogy and its representation as nomological universality. The guideline draws on Pannenberg’s insight that we can consider the resurrection of Jesus as a historical event if we set aside the Enlightenment assumption about the uniformity of history. On the one hand, if the historian dogmatically assumes that “the dead stay dead,” then the Resurrection is ruled out of bounds a priori. But if, on the other hand, we do not insist on this assumption, then the Resurrection is open to historical research (see appendix to the introduction, section F). I have made a similar argument about cosmological predictions based on science. If we make the philosophical assumption that the predictions of well-winnowed scientific theories, such as big bang cosmology, must come to pass then of course science challenges eschatology. But if, instead, we assume that the regularities of nature studied by science have their ultimate basis in the faithful action of God as continuous creator, then—if God has acted in a radically new way at Easter and will continue to do so—the predictions of science for the cosmic future will not hold. In this way, belief in the eschatological New Creation does not conflict with science (for details, see appendix to the introduction, section E, guideline 1). Finally, if Christian eschatology is based on the view of the resurrection of Jesus as a transformation, a view held by many New Testament scholars and theologians including Pannenberg, then we may be able to find physical features of the universe as it is now that will eternally be a part of it, and science can return as a friend in studying these features (see appendix to the introduction, section B; and section D, guideline 6). All of these ideas will be present in the background of this volume. They provide a wider sense of the way Pannenberg’s body of writings has implicitly influenced my research here. With this we are prepared to explore three key concepts in my interpretation of Pannenberg’s work underlying the interaction between his theology and mathematics, physics, and cosmology.
1. Three Key Concepts in Pannenberg’s Theology

Three concepts arise repeatedly throughout this volume and derive from my interpretation of Pannenberg’s theology of eternity and omnipresence: duration, co-presence, and prolepsis. Although I have already touched on them, it will be helpful to describe them again here at the outset of the volume.

Duration

In my reading of Pannenberg, time in nature is not point-like, the terminus or limit of the infinite division of a one-dimensional continuum. Instead, time involves duration, or temporal thickness, not only in our conscious experience of memory and anticipation but also in nature, including its fundamental processes as studied by mathematics, physics, and cosmology. The basis for duration both in consciousness and in the physical world, according to Pannenberg, is the temporal structure of eternity. Here eternity as a divine attribute takes up the times of our lives and unifies them via duration, even if we only experience this unity briefly.

Co-presence

It is important to note that Pannenberg’s concept of eternity is more subtle than the two “garden-variety” options so often found in philosophical and theological literature. Thus, in Pannenberg’s view, eternity is not timelessness, the conflation of all moments of time into a single timeless “now” in which all temporal thickness is lost. Nor is eternity endless ordinary time, a continuing succession of separate temporal moments each of which exists only for an instant as the “present” and then is gone forever. Instead, the divine eternity is one of duration, but according to my read of Pannenberg it is a duration that includes an internal structure that I will call “co-presence.” In this novel concept, duration is a differentiated unity that holds together as co-present all events in the history of the universe both now and in the eschatological New Creation. Within the duration of eternity, each event retains its unique past and future. I call this time’s “past-present-future structure,” or “ppf structure.” All events, in turn, each with their own ppf structure, are held together.
without conflation and without separation in the duration of eternity: that is, they are held together “simultaneously.” And in perhaps his greatest *ansatz* in this topic, Pannenberg makes the bold claim that this understanding of eternity is possible only because God is Trinity. To paraphrase Pannenberg, the divine eternity as a differentiated unity is the eternity of the differentiated unity of the Trinitarian God.

Let me spell this out in more detail. For Pannenberg, the relation of time and eternity involves the following claim: the *distinction* between events in time will be sustained in eternity while the *separation* between events in time will be overcome in eternity. By the “distinction” between events, I mean the unique character of every event as present, a unique character reflected in its unique ppf structure. This ppf structure will be preserved in the unity of the divine eternity. This part of the claim argues against eternity being a mere conflation of all events into a single, timeless, unstructured present. By the “separation” of every event as present from all other events as present, I mean the fact that each event in creaturely time can only be experienced as present once, and, for each event, its future events and its past events are never available as present. But in eternity, this separation is overcome. All events are equally available to be re-experienced, forgiven, and savored endlessly. This part of the claim argues against eternity being merely an endless sequence of time as we now know it. Finally, this relation between time as we know it and the divine eternity is true not only in the “now” of our creaturely lives, although experienced only partially and by way of anticipation, but even more so as a relation between this lived “now” and the endless life that we will have eschatologically in the New Creation, when we shall forever experience God’s eternity immediately. As Pannenberg writes, the distinction between God and creation will remain in the New Creation, but the distinction between the holy and the secular will be overcome.

Prolepsis

I also argue that Pannenberg’s view of the relation between the eschatological future and the present includes two distinct concepts. I refer to the first as the “immediate causality of the future”: in every present moment in life and in nature the factors predisposing, but not predetermin-
ing, the character of that present moment include not only the immediate efficient causality of the past, as represented by forces and interactions in physics. These factors also include what I call the immediate causality of the future in which the future is manifested (or, as Pannenberg phrases it, “appears”) in the present as an additional contributing factor in making the present concretely what it is. The second concept is prolepsis: a strikingly topological view of the relation between creation and the New Creation in which the eschatological future “reaches back” and is revealed in the event of the resurrection of Jesus. This reaching back is not within the topology, or spatial structure, of the universe as we know it, that is, as the creation with its past and future as described by special relativity, general relativity, big bang cosmology, etc. Instead, it is a more extensive topology, one that connects the universe as creation with the New Creation where the New Creation is thought of as emerging through God’s radically new action starting at Easter and continuing until its consummation in the global eschatological future of creation. On the one hand, both creation and New Creation are part of a single divine act of creation ex nihilo, including this topological connection. Yet, on the other hand, this connection is not so much a part of the present creation as it is a proleptic act originating in the New Creation and reaching back into our world and its history.

2. Summary of the Chapters

The following is a fairly lengthy summary of the six chapters of this volume. It is meant to orient readers to the overall flow of the material, to touch on and preview many of its details, and to give readers an overall sense of the argument of the volume. However, since much of this summary is repeated, often verbatim, in the respective chapters, readers may prefer to skip the summary offered here and go directly to the chapters.

Part One: SRP → TRP (Scientific Research Program → Theological Research Program)

In chapter 1, I lay out as groundwork for this entire volume Pannenberg’s Trinitarian conception of eternity and omnipresence. In section A,
I describe Pannenberg’s Trinitarian conception of eternity in relation to the time of creation. Pannenberg views God’s eternity both as the source of creaturely time and as overcoming the effect of the present moment in separating and dividing past from future. He discusses the role of duration as forming what Augustine called a psychological “time-bridging” present, now extended by Pannenberg (as I read him) to include duration in nature. I also describe Pannenberg’s understanding of the relation between time in creation and time in the eschatological New Creation. In section B, I look at Pannenberg’s Trinitarian conception of omnipresence in relation to the space of creation, including the impact of Newtonian science and the shifting understanding of space and time in special and general relativity on this relation. In sections C–E, I look at Pannenberg’s additional insights about the relations between space, time, omnipresence, and eternity, the way in which God as Trinity is crucial to these relations, and the role Pannenberg gives to Hegel’s concept of infinity in his discussion of the divine attributes. Finally, in section F, I turn again to eschatology and focus on Pannenberg’s two concepts of the relation between the eschatological future and the present: the causal priority of the immediate future and the prolepsis of the eschatological future in history at the first Easter.

In chapter 2, I explore a variety of ideas drawn from mathematics, physics, and cosmology in an effort to illuminate two of Pannenberg’s key concepts, co-presence and prolepsis, within the theme of time and eternity. The first involves the relation between time as we currently know it and the co-present duration of the divine eternity. The second involves the relation between creaturely time and the eternity of the eschatological New Creation as anticipated proleptically in the resurrection of Jesus. I will focus on co-presence in section B and on prolepsis in section C.

As described above, I coined the term co-presence to characterize Pannenberg’s unique understanding of the structure of temporal duration in the divine eternity. To reiterate, we begin with our experience of time in daily life. Here each present moment has a unique past and future which I refer to as the “ppf structure” of time. In our ordinary experience of time, the present constantly changes as what was a set of possible and indeterminate future events becomes a unique, determinate present event, and then immediately becomes an event in the ever-receding and irre-
trievable past. Such a view of time is often called “flowing time” by physicists and philosophers. Co-presence is meant to signify Pannenberg’s concept of the special kind of unity that temporal events in life and nature are given as they are taken up, even now, into the eternity of God. According to Pannenberg, in the divine eternity all events are co-present: each event as a present moment retains its distinct past and future even while all such present events are held together in the differentiated unity of eternity.

To characterize his unique contribution to the second issue I have adopted Pannenberg’s key term, prolepsis. Here prolepsis signifies the resurrection of Jesus as the appearance and culmination in history of the eschatological future and its ultimate consummation in the reign of Jesus Christ in the New Creation. It is through both prolepsis and the immediate causality of the future that the eschatological future appears and is active in the present Creation.

But before proceeding to explore these key themes—co-presence and prolepsis—we must recognize that the reality of flowing time is widely, though not universally, disputed by scientists and Anglo-American analytic philosophers even while it is taken for granted in the rich temporal ontology of Continental metaphysics such as Pannenberg deploys. These scholars typically opt for a timeless, static view of nature and a tenseless view of language, claiming they can reduce flowing time entirely to human subjectivity, a view often referred to as the “block universe.” Where is Pannenberg in all this? Obviously Pannenberg holds to, even simply presupposes, the reality of flowing time, as do essentially all theologians. But it is not entirely clear to me whether Pannenberg believes that flowing time is merely a subjective phenomenon with no basis in the physical world or whether he believes that flowing time is grounded in nature. Nevertheless I will make the assumption in this work that Pannenberg holds that the physical world is dynamic and characterized by flowing time.

Hence my first task in chapter 2, section A is to put what I take to be Pannenberg’s views on “flowing time” in dialogue with the spectrum of views held by Anglo-American philosophers, while recognizing that his views may not fit all that well within this spectrum. I will start with a very brief background to the philosophical debate over the dynamic versus static nature of time. Then, following Pannenberg’s commitment
to relationality in the Trinitarian being of God, I develop what I take to be, in some ways at least, a new approach to flowing time. The key will be to treat past and future not as properties of events but as relations between events and a given present moment. This will lead me to propose what I will call a relational and inhomogeneous temporal ontology. I also suggest that flowing time entails an underlying “fractal-like” temporal ontology that leads, in turn, to new insights into the extraordinary richness of temporality in nature.

It is important to stress at the outset, however, that one of the main arguments for a timeless view of nature, or the “block universe” view, is based on Einstein’s special theory of relativity (SR). Since I wish to reconstruct Pannenberg’s discussion of eternity and omnipresence in light of SR (chapter 4) I must at some point respond to relativity’s challenge to flowing time. I will do so in chapter 5 where I will suggest that Pannenberg’s theology, once reconstructed in light of special relativity, can in fact lead to a new argument for the philosophical defense of flowing time in light of relativity. This argument, in turn, will be based on the relational and inhomogeneous temporal ontology articulated in chapter 2. Thus the reconstructive work for theology in light of science is placed in part one of this volume, while the implications of this reconstructed theology for philosophy is placed in part two, following the method of CMI.

Next I offer an extended discussion of Pannenberg’s concept of eternal co-presence (section B) and of prolepsis (section C) in light of my approach to flowing time. In chapter 2, section B I lay out an analogy between libraries that have “closed” versus “open” stacks, on the one hand, and creaturely time versus eternal co-presence on the other hand. I then turn briefly to the mathematics of non-Hausdorff manifolds in theoretical physics and cosmology because they can offer a second analogy for the theological concept that time in eternity retains its unique past, present, and future (ppf) structure without events being separable into isolated present moments. I suggest ways in which the phenomenon of entanglement in quantum mechanics, where spatially separate objects still remain fundamentally related, can offer a third analogy from physics for co-presence in eternity. In chapter 2, section C I begin with the idea of the eschatological transformation of the creation into the New Creation based by analogy on the bodily resurrection of Jesus. I then offer a rudimentary diagrammatic approach to illustrate this concept of transformation and
the importance of prolepsis to it. Finally, I explore a topological approach to eschatology through such ideas as singularities in spacetime and multiple connections in some forms of inflationary cosmology. I close by thinking imagistically about multiple prolepses between the death of individuals and the eschaton based on the prolepsis of Jesus Christ.

In chapter 3, I explore ways in which the concept of infinity in modern mathematics can offer important insights for reformulating Pannenberg’s doctrine of God, particularly in regard to his use of Hegel’s concept of infinity in discussing the divine attributes. My specific focus will be on Georg Cantor’s groundbreaking mathematical work on infinity in relation to Pannenberg’s use of infinity drawn from Hegel. The choice to focus on Cantor’s mathematics arises because of Cantor’s breakthrough from our traditional way of thinking about infinity in which the infinite is understood in sharp contrast to the finite. This traditional way led theology to follow the via negativa: a way of coming to know God through a complete separation between the finite world and God its creator. This way of thinking about infinity dates back to the ancient Greeks, where infinity is defined as the apeiron— the unbounded, the unlimited, the formless. Recent developments in mathematics starting in the nineteenth century, though foreshadowed by Galileo Galilei’s discoveries in the seventeenth century, have shed provocative new light on infinity. Cantor in particular has given us a new mathematical conception of infinity in which there are an endless variety of infinities, which he called the “transfinites,” lying beyond the finite and yet beyond them there is an unreachable Absolute Infinity. These revolutionary discoveries in mathematics can lead us to exciting new insights into the concept of infinity in Pannenberg’s explication of the divine attributes.

We begin chapter 3, section A with a historical note on the concept of infinity in Greek thought before turning to the modern understanding of infinity in mathematics. Next, I discuss Cantor’s fundamental developments in finite set theory, including his concept of a set, the characterization of sets as countable and uncountable, the cardinal and ordinal numbers of a set, and so on. Cantor’s breakthrough was to show how to apply these ideas by analogy to an infinite set. He claimed that infinite sets, such as the set of natural numbers, could be thought of not just as potentially infinite but as actually infinite or “transfinite.” Cantor also showed that there can be transfinite sets that are “bigger” than the set of
natural numbers, leading to an unending series of transfinites. This in turn led him to propose what he called Absolute Infinity as that which lies forever beyond the realm of the transfinites in the mind of God. For Cantor, Absolute Infinity is inconceivable, and yet in a subtle way it is conceivable. He showed this by using what is called a “reflection principle” to claim that the properties of Absolute Infinity can be known in that they are shared with those of the transfinites, and yet this sharing leaves Absolute Infinity indistinguishable from the transfinites, and thus unknowable in itself.

But Cantor’s set theory generates a series of antinomies: two assertions both apparently true but which are mutually contradictory. Cantor’s antinomies are actually indicative of a larger set of crises in the foundations of mathematics, related to the failures of logicism, intuitionism, and formalism and their associated philosophies—realism, constructivism, and nominalism. After briefly discussing these issues I suggest that Cantor’s work is still applicable theologically if we are seeking to use it as a conceptual tool to enhance the way Pannenberg explicates the role of infinity in the doctrine of the divine attributes.

I then return in more detail to Cantor’s conception of Absolute Infinity and his theological motivation for this concept in order to explore its potential fruitfulness for theology. This will include a brief historical survey of the theological objections to Cantor’s work in his own time, where the context was Pope Leo XIII’s support of neo-Thomistic philosophy and his 1879 encyclical, Aeterni Patris. It was in response to these objections that Cantor proposed his idea of “Absolute Infinity” as lying forever beyond the realm of the transfinites within the mind of God. In addition he distinguished between the eternal, uncreated, Absolute Infinite related to God and the created, transfinite infinity which can be found in nature.

In chapter 3, section B I first summarize Pannenberg’s use of Hegel’s understanding of “true Infinity” in his discussion of the doctrine of God, where for Pannenberg it serves as the underlying structure of the divine attributes, eternity and omnipresence. I then explore the relation between Cantor’s conception of the transfinites and Hegel’s concept of infinity. I suggest that Cantor’s concept of the transfinites and Absolute Infinity and his use of the reflection principle offer new resources for Pannenberg’s conception of the infinite in his theology. For example, Cantor allows us to notice both differences and similarities between the finites and
the transfinites, leading me to claim that the finite and the transfinite, while primarily distinguishable, are still in an important sense indistinguishable. Cantor’s use of the reflection principle leads to new insights about the incomprehensibility of God who, when thought of metaphorically in terms of Absolute Infinity, is revealed and yet hidden through the properties it shares with the transfinites. I then suggest that the transfinites can be understood as forming a “veil that discloses God,” making God conceivable even while it hides God, leaving God as ultimately inconceivable.

In the final portion of chapter 3 I explore Pannenberg’s work on time and eternity and the eschatological transformation of the world into the New Creation in light of Cantor’s mathematics. Pannenberg’s understanding of God as entering immanently into the world to transform it eschatologically while remaining transcendent to it requires that we make two assumptions: 1) that the world as created by God is both finite and transfinite, and 2) that the transfinites stand in relation to Absolute Infinity as depicted by the reflection principle. My point will then be that a “fully finite” world, as creation is traditionally conceived, could not, in principle, be open to God’s holiness and divine Spirit the way Pannenberg proposes without leading either to pantheism and the divinizing of the world or to atheism and the secularizing of God. But if the world that God did, in fact, create is both finite and transfinite, it is a world which can be, from the beginning, infused with God’s holiness and life-giving Spirit even while remaining creaturely. Finally I suggest that in the New Creation the transfinite character of creation will take on increasing significance compared with the present context in which the world is primarily seen as finite. In sum, Cantor’s mathematical language about infinity gives us a way to express something of what Pannenberg tells us about eschatology.

In chapter 4 I turn to Albert Einstein’s theory of special relativity (SR) and the task of reformulating Pannenberg’s treatment of eternity and omnipresence in light of the “spacetime” interpretation of SR. According to this interpretation given by the mathematician Hermann Minkowski just two years after Einstein published SR, space and time cease to be entirely separate dimensions of the world as they are in ordinary experience and in classical physics. Instead they form a single, four-dimensional geometry called “spacetime.” My goal is to offer a reformulation of the theological relation between eternity and omnipresence based
on the spacetime interpretation of SR. Once this is in place, we will ex-
plore several new theological insights into the interweaving of eternity
and omnipresence in relation to spacetime. We will also explore the way
a reformulation of divine omnipresence offers a response to the philo-
sophical problem regarding a way to conceive of the unity of the world.

First, however, I stress again that SR poses a striking challenge to
theology. This is because the spacetime interpretation of SR is itself sub-
ject to an interpretation called the “block universe.” According to this
interpretation of spacetime, all events in the world—past, present, and
future—are equally present and real. There is no objective distinction
between what we call past and future. Instead all events in life, history,
and the universe are just “there” in the frozen geometry of spacetime,
and the flow of time that is so deeply given to our personal experience
is an illusion. Such an interpretation of spacetime obviously undercuts
the kind of “flowing time” interpretation of time which I will defend in
chapter 2 as applying not only to our personal experience but to nature
itself. And flowing time is, arguably, essential to most forms of religious
experience and their theological systematization. In chapter 2 we will
see how this would be true especially for Pannenberg, even as he adds
subtle layers of nuance in his interpretation of the relations between
events in time and their being taken up into the divine eternity. Hence
the challenge of the block universe interpretation of the spacetime inter-
pretation of SR must be met if we are to incorporate the spacetime inter-
pretation, and with it a flowing time interpretation of the spacetime inter-
pretation, into our discussion of the divine attributes. In chapter 4
I will reformulate Pannenberg’s understanding of eternity and omnipres-
ence in light of SR, as reflecting the goal of part one of the volume. I will
ask the reader to suspend judgment temporarily about the possibility of
addressing the challenge raised by the block universe interpretation of
SR until chapter 5. There, as appropriate to its being located in part two,
I will reverse the direction of the argument and suggest how a reformu-
lated interpretation of the relation between eternity and omnipresence
can lead to new insights in the philosophy of time for a “flowing time”
interpretation of SR.

I start chapter 4 with an overview of SR (section A). This overview
includes Einstein’s two postulates, spacetime diagrams, time dilation,
the “downfall of the present,” the Lorentz transformations and their
consequences, and the famous SR “paradoxes,” which arise out of the Lorentz transformations. I focus on one paradox in particular, the so-called pole-in-the-barn paradox. First, this paradox embodies many of the results already discussed and it leads to a crucial shift in perspective: we move from viewing SR in terms of separate spacetime diagrams, one for each observer in relative motion (e.g., one respectively for the pole’s point of view and the barn’s point of view), to viewing SR in terms of a single, “generalized” spacetime diagram that incorporates both points of view seamlessly and transparently. This in turn leads to a profound insight into the non-paradoxical view of nature offered by SR that we can incorporate into theology. Because of its fruitfulness, the pole-in-the-barn paradox will play a crucial role in reformulating both eternity and omnipresence in light of the spacetime interpretation of SR. In chapter 5, this paradox will be pivotal in deploying a flowing time interpretation of spacetime against its competitor interpretation, the block universe. Finally, through the generalized spacetime diagram for the pole-in-the-barn paradox, we will discover a compelling view of the interwoven temporal character of what we take to be our individual narratives of the physical processes in nature.

I have indicated already that I will adopt the spacetime interpretation of SR, while foregoing its usual interpretation, the block universe, and construct a new flowing time interpretation of spacetime in light of Pannenberg’s reformulated theology (chapter 5). But my introduction to SR would not be complete without a clear presentation of the reasons why the spacetime interpretation is now almost universally accepted. I present reasons for this before closing chapter 4, section A by exploring how the classical global present is an unneeded anthropocentric illusion. The technical material in that section may be off-putting to readers without a background in physics. Thus, in this section I include short summaries of each topic in SR for those wishing to skip the details. I also cite several online resources that are particularly helpful in explaining SR in non-technical language.

In chapter 4, section B I reflect on Pannenberg’s comments on special and general relativity before turning directly to the theological task at hand: a reformulation of Pannenberg’s discussion of the divine attributes in light of SR. In essence the spacetime interpretation of SR entails that a strict separation of the temporal and spatial conceptualities underlying
eternity is no longer possible—at least in principle. How then are we to treat the divine attributes? My response in section C is to reformulate the discussion of the divine attributes modeled by what I call a “covariant correlation of eternity and omnipresence.” In section C.1 I give the basic argument. In C.2 I return to the pole-in-the-barn paradox to suggest how the complex interweaving of the worldviews of observers in relative motion enlarges our understanding of the divine eternity and omnipresence as endlessly interwoven together in their relation to creation. In C.3 I explore the astonishing complexity of the elsewhen region of spacetime associated with every spacetime event. This, in turn, has implications for God’s particular omnipresence to each observer with his or her unique view of the world. Finally in C.4, I claim that it is God’s particular omnipresence to events in space that gives to these distinct and separate events a differentiated spatial unity, and I relate this to Pannenberg’s discussion of the debates over space and omnipresence in the writings of Newton, Leibniz, and Clarke. The chapter closes with section C, where, as stated above, I reformulate the discussion of the two divine attributes—eternity and omnipresence—in light of the spacetime interpretation of SR and modeled by a covariant correlation of eternity and omnipresence. This reformulation is crucial to the goal of part one.

Part Two: TRP → SRP (Theological Research Program → Scientific Research Program)

Chapter 5 reflects the goal of part two: to demonstrate that theology, when reformulated in light of mathematics and science, can offer fruitful directions for research in nontheological disciplines—here the problem of time in the philosophy of science. In this chapter I address the challenge that SR poses to theology, since the spacetime interpretation of SR is itself subject to an interpretation called the block universe, where all events in life, history, and the universe are just “there” in the frozen geometry of spacetime and the flow of time that is so deeply given to our personal experience is merely an illusion. I thus lay out and defend a new flowing time interpretation of special relativity based on my interpretation of Pannenberg’s concept of eternity, namely co-presence (chapter 2), and on my reformulation of Pannenberg’s understanding of eternity and omnipresence, which I refer to as the covariant correlation of eternity and omnipresence (chapter 4).
In chapter 5, section A I present a brief summary of the debate over the best interpretation of SR: Should it be taken as supporting a philosophy of being (the block universe) or a philosophy of becoming (flowing time)? We have already discussed the more general form of these arguments in chapter 2. Here we focus on the specific form they take in the context of SR. I begin with a standard, and compelling, example of the argument for the block universe by Edwin F. Taylor and John Archibald Wheeler. Then, to illustrate the debate between the block universe and flowing time interpretations of SR, I have chosen early essays by Olivier Costa de Beauregard and Milič Čapek, and a more recent joint essay by Chris Isham and John Polkinghorne. I close this section with an unusual flowing time interpretation of SR frequently referred to as neo-Lorentzian and supported by William Lane Craig and other scholars. Unlike the conventional flowing time interpretation, the neo-Lorentzian framework offers a unique global present but at the cost of treating time dilation and Lorentz contraction as real physical effects and not just aspects of the geometrical concept of spacetime.

In chapter 5, section B I lay out, as promised, a new flowing time interpretation of SR drawing on my theological reconstruction of Pannenberg’s work on eternity and omnipresence found in chapter 4. The key move starts with the assumption that a relational and inhomogeneous ontology, such as I develop in chapter 2, is coherent with and supports Pannenberg’s theological concepts of eternity and omnipresence when they are reformulated in light of SR. I then propose that we reverse the move and explore whether such an ontology, because of its importance to the task of reformulating Pannenberg’s theology, might be preferable, compared to its competitors, when we return to the context of SR. If so, then in this way Pannenberg’s theology can be seen to provide fruitful implications for research in the philosophy of physical time, specifically the philosophical interpretation of SR. To accomplish this task I apply the relational and inhomogeneous ontology (chapter 2) to the spacetime interpretation of SR. I then assess the attempt to widen the search for a physical global present by turning from SR to general relativity and big bang cosmology. My conclusion is that the problems raised by SR for a physical global present remain even in this wider context and that they must therefore be addressed directly. Finally, in section C, I spell out what I consider to be the real lessons of SR: that relativity does not lead to epistemic relativism and that the “simultaneity richness” of the elsewhen
compared to the “austere paucity” of the classical view of a unique
global present leads to a more satisfying understanding of nature, one to
be celebrated rather than explained away.

The style of chapter 6 is highly schematic and unapologetically specu-
lative since we are entering truly unexplored territory: the search for re-
search programs in physics and cosmology that in some way reflect the
directions one might take if starting from a reformulated theology such as
we have explored here based on Pannenberg’s work. I try to strike a bal-
ance between an exposition of individual scientific topics that is suffi-
ciently general and detailed to make it readable for the nonscientist and
a succinct itemization of a diversity of scientific topics that, to the prac-
ticing scientist, will convey something of the vastness of the landscape
for such research. Let me acknowledge at the outset that some of the sci-
entific research described in this chapter awaits further study and eventu-
al confirmation or disconfirmation by the scientific community. Still, the
fact that it is here serves as a “proof of concept” that theology can offer
creative suggestions for new research directions in science and additional
criteria of theory choice between competing scientific research programs,
all the while respecting and endorsing the methodological naturalism that
underlines and shapes the natural sciences. For a discussion of the guide-
lines for this research, see appendix to the introduction, section E.

In this discussion I also lay out what constitutes the overarching
conceptual structure of chapter 6: that “resurrection as transformation”
means that some of the preconditions for the possibility of the New Cre-
atation that God is bringing about starting at Easter and ending in the escha-
tological future must already be present. Such preconditions constitute
one element of continuity between the world as we know it now through
the natural sciences and the New Creation into which it is both already
being transformed (i.e., “realized eschatology”) and into which it will be
radically transformed (i.e., “apocalyptic eschatology”). Of course there
are considerably more elements of discontinuity between “now and then”
than elements of continuity, but the point here is that there must be some
form of continuity. Finally, I will make a key move and presuppose that
some elements of continuity include those themes that I have drawn and
interpreted from Pannenberg and reconstructed in light of science and
mathematics: duration, co-presence, and prolepsis.

In this chapter I look at nature as we know it through the lens of
mathematics, physics, and cosmology, searching for those features of
nature which might be suggestive of duration, co-presence, and prolepsis. After an overview of the chapter (section A), I turn to duration in general in section B, drawing on the metaphysics of Whitehead since it embodies a concept of duration akin to what is found in Pannenberg’s writings. I then turn to the ongoing scientific research programs initiated by David Bohm and by Ilya Prigogine since they represent views of duration that in some ways represent elements of Whitehead’s philosophy. I also survey current research in string theory which might be interpreted as pointing to a rudimentary form of duration in nature.

In chapter 6, section C I turn to co-presence as the particular structure of duration found in Pannenberg’s conception of eternity, and I investigate its possible implications for research physics. Here I explore the idea of co-presence as non-separability in time by way of analogy to the idea of non-separability in space. I then identify a number of current scientific research programs which deal with spatial non-separability both in quantum mechanics and in non-Hausdorff spacetimes. In section D, I explore Pannenberg’s concept of prolepsis, including both the causal efficacy of the future on the present and the topological “reaching back” of the eschaton from the New Creation to Easter. Hints of what might be the preconditions for prolepsis as the causality of the future can be found in Fred Hoyle and J. V. Narlikar’s work on steady-state cosmology. I describe the roots of their research in the “time symmetric” formulation of electromagnetism as developed by John Wheeler and Richard Feynman. I then point to aspects of their work which continue to appear in the cosmological research of Stephen Hawking and G. F. R. Ellis and in the time symmetric approach to quantum mechanics by Yakir Aharonov, Jeff Tollaksen, Paul Davies, and Brian Greene. Hints of prolepsis as a topological “reaching back” might be found in the areas in physics where non-Hausdorff manifolds apply. I explore its implications as a response to issues such as natural theodicy and I discuss the difference in the purpose of using non-Hausdorff manifolds here and in chapter 2. Finally, in chapter 6, section E I acknowledge the problem raised by the apparent hiddenness of eternal time in ordinary experience: Why does time in nature seem “linear” and its present moments separated into the unavailable future and the unretrievable past? I offer two responses to this problem of hiddenness, one that draws on Luther’s “theology of the cross” and the other that utilizes John Hick’s argument about “epistemic distance.”
As I note at the outset of this introduction the theological topic of “time and eternity” is central to the relation of God and the world in two contexts. In the first context, eternity is considered in relation to time as we know it now. Here, the concept of eternity involves three competing notions: eternity as timeless, eternity as unending time, or, for many twentieth-century theologians, eternity as the supratemporal source of time. Eternity understood this way includes the concept of duration, and for Pannenberg in particular, duration is internally structured in terms of what I call co-presence. In the second context, the eschatology of New Creation, the theological topic of “time and eternity” is crucial when eschatology is based analogously on the bodily resurrection of Jesus and involves the idea of prolepsis by which the eschatological New Creation is already realized in the Easter miracle.

In my view the topic of “time and eternity” in both of these contexts is most clearly and persuasively articulated in contemporary Christian theology by Wolfhart Pannenberg. The motivation for this book is to address this topic and explore its richness for Christian theology in light of the massive contributions by Pannenberg. The task is twofold: first we must reformulate his theology in light of the natural sciences; then we can explore new insights coming from his thought to access their fruitfulness for research in the natural sciences and the contemporary philosophy of time.

In the process two challenges must be faced, as we saw above. The first is that timeless philosophies of nature based, in particular, on the physics of special relativity threaten to undermine the very cogency of any theological treatment of “time and eternity” with its implicit assumption of “flowing time.” The second is that scientific cosmology, from the big bang to quantum cosmology, severely challenges the sheer intelligibility of eschatology when its scope expands endlessly to embrace the universe as a whole as God’s creation and therefore as the subject of God’s eschatological transformation into the New Creation. Thus in addressing “time and eternity” we must address these two fundamental challenges. My approach here is to seek to turn these challenges into creative opportunities for constructive work both in theology and in the philosophy of science and in physics and cosmology. I do so in particular in chapters 2, 4, 5, and 6.
But there are additional reasons that motivate and challenge this volume. The material in the appendix spells out these motivations and challenges in detail. There I include brief notes on three issues involving creation, cosmology, and evolution that take us directly to the challenge raised to Christian eschatology by scientific cosmology and, within this challenge, the core problem of “time and eternity.” Second, because my treatment of Christian eschatology depends crucially on the bodily interpretation of the resurrection of Jesus, I give some details on the New Testament debates over this interpretation (see appendix to the introduction, section B). The scholars surveyed make a convincing case for the bodily Resurrection and an eschatology of cosmic transformation. Nevertheless they by and large ignore the challenges from science. To make clear what the challenges are I give a brief overview of big bang, inflation, and quantum cosmology. As mentioned above, these areas pose a severe challenge not only to Christian eschatology but also to the theology-science dialogue in general. I view this challenge as constituting a crucial “test case” for the feasibility of the dialogue as a whole. In the appendix I also include a survey of a variety of eschatological responses to cosmology, most of which either wall it off by a focus on other concerns or acknowledge it but offer little substantive response to it (appendix to the introduction, section C).

In response to the challenges from special relativity and from cosmology, as well as the additional challenge mentioned in section A above, I have relied in this volume on the method of Creative Mutual Interaction and I have structured the volume accordingly. The result, I hope, will be new insights for reformulating Pannenberg’s theology in light of contemporary science and mathematics and, in turn, new suggestions for research in both the philosophy of science and in cutting edge topics in contemporary physics. And this result, in turn, bears directly on what I quoted from Pannenberg in the epigraph: “Without an answer to the question regarding time and eternity, the relation of God to this world remains inconceivable.” I hope to have contributed at least part of an answer to this question in this volume. If so, I attribute whatever success might be found here to the radiant theological vision of Wolfhart Pannenberg, to whom this book is dedicated.