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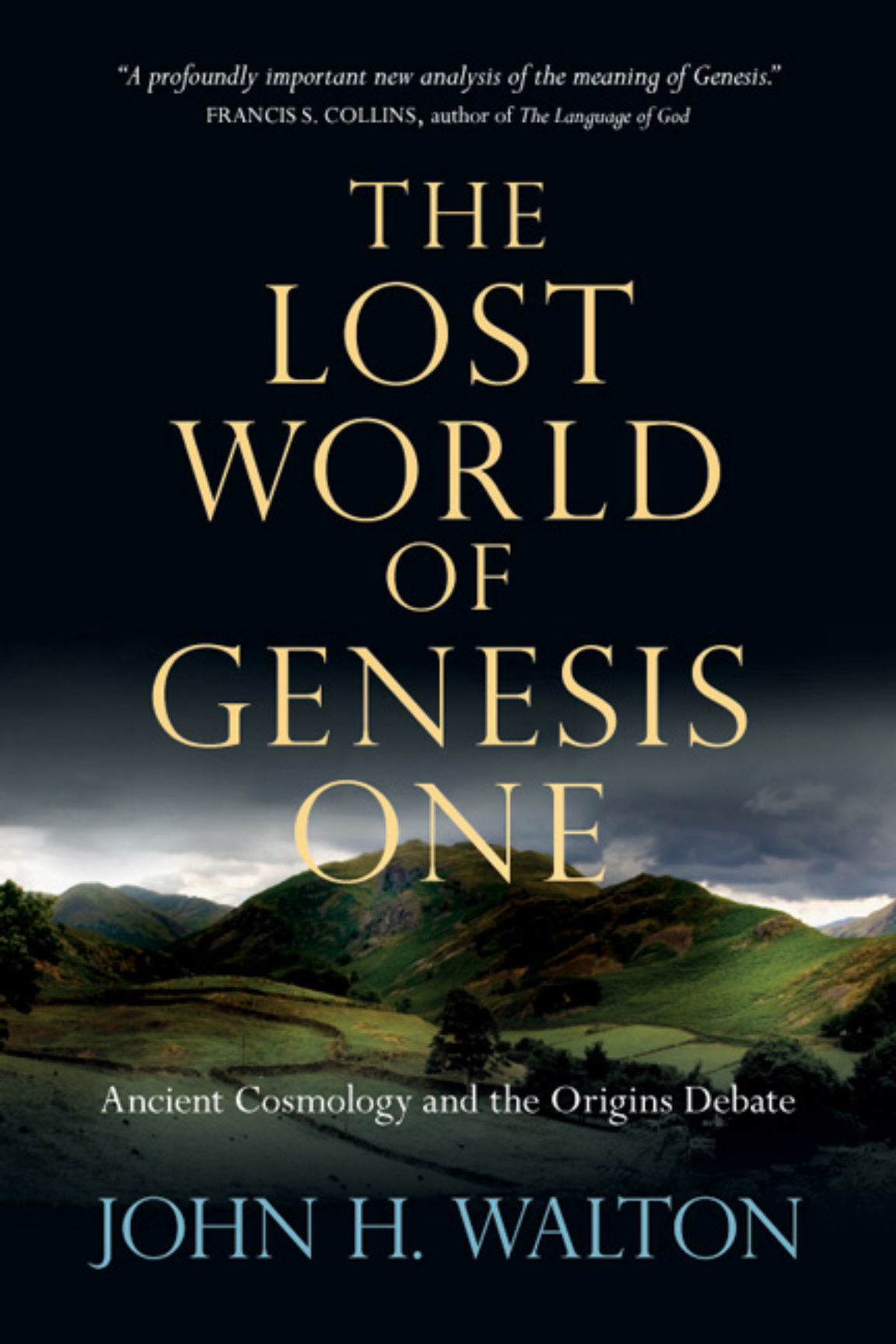
THE LOST WORLD OF GENESIS ONE



Ancient Cosmology and the Origins Debate

JOHN H. WALTON

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Prologue

One of the principal attributes of God affirmed by Christians is that he is Creator. That conviction is foundational as we integrate our theology into our worldview. What all is entailed in viewing God as Creator? What does that affirmation imply for how we view ourselves and the world around us? These significant questions explain why discussions of theology and science so often intersect. Given the ways that both have developed in Western culture, especially in America, these questions also explain why the two often collide.

The first chapter of Genesis lies at the heart of our understanding of what the Bible communicates about God as Creator. Though simple in the majesty of its expression and the power of its scope, the chapter is anything but transparent. It is regrettable that an account of such beauty has become such a bloodied battleground, but that is indeed the case.

In this book I have proposed a reading of Genesis that I believe to be faithful to the context of the original audience and author, and one that preserves and enhances the theological vitality of this text. Along the way is opportunity to dis-

cuss numerous areas of controversy for Christians, including relating Genesis to modern science, especially evolution. Intelligent Design and creationism will be considered in light of the proposal, and I make some comments about the debate concerning public education.

The case is laid out in eighteen propositions, each presented succinctly and plainly so that those not trained in the technical fields involved can understand and use the information presented here. Whether the reader is an educated layperson who wants to know more, a pastor or youth pastor in a church, or a science teacher in public schools, he or she should find some stimulating ideas for thinking about the Bible, theology, faith and science.

Introduction

We like to think of the Bible possessively—*my* Bible, a rare heritage, a holy treasure, a spiritual heirloom. And well we should. The Bible is fresh and speaks to each of us as God's revelation of himself in a confusing world. It is ours and at times feels quite personal.

But we cannot afford to let this idea run away with us. The Old Testament *does* communicate to us and it was written for us, and for all humankind. But it was not written *to* us. It was written to Israel. It is God's revelation of himself to Israel and secondarily through Israel to everyone else. As obvious as this is, we must be aware of the implications of that simple statement. Since it was written to Israel, it is in a language that most of us do not understand, and therefore it requires translation. But the language is not the only aspect that needs to be translated. Language assumes a culture, operates in a culture, serves a culture, and is designed to communicate into the framework of a culture. Consequently, when we read a text written in another language and addressed to another culture, we must translate the culture as well as the language if we hope to understand the text fully.

As complicated as translating a foreign language can be, translating a foreign culture is infinitely more difficult. The problem lies in the act of translating. Translation involves lifting the ideas from their native context and relocating them in our own context. In some ways this is an imperialistic act and bound to create some distortion as we seek to organize information in the categories that are familiar to us. It is far too easy to let our own ideas creep in and subtly (or at times not so subtly) bend or twist the material to fit our own context.

On the level of words, for example, there are Hebrew words that simply do not have matching words in English. The Hebrew word *ḥesed* is a good example. The translators of the New American Standard Bible decided to adopt the combination word "lovingkindness" to render it. Other translations use a wide variety of words: loyalty, love, kindness and so on. The meaning of the word cannot easily be expressed in English, so using any word unavoidably distorts the text. English readers unaware of this could easily begin working from the English word and derive an interpretation of the text based on what that English word means to them, and thus risk bringing something to the text that was not there. Nevertheless translators have little choice but to take the word out of its linguistic context and try to squeeze it into ours—to clothe its meaning in English words that are inadequate to express the full meaning of the text.

When we move to the level of culture, the same type of problem occurs. The very act of trying to *translate* the culture requires taking it out of its context and fitting it into ours. What does the text mean when it describes Sarah as "beautiful"? One not only has to know the meaning of the word, but also must have some idea of what defines beauty in the ancient world. When the Bible speaks of something as elemental as marriage, we are not wrong to think of it as the establishment of a socially and legally recog-

nized relationship between a man and a woman. But marriage carries a lot more social nuance than that in our culture and not necessarily similar at all to the social nuances in the ancient culture. When marriages are arranged and represent alliances between families and exchange of wealth, the institution fills a far different place in the culture than what we know when feelings of love predominate. In that light the word *marriage* means something vastly different in ancient culture, even though the word is translated properly. We would seriously distort the text and interpret it incorrectly if we imposed all of the aspects of marriage in our culture into the text and culture of the Bible. The minute anyone (professional or amateur) attempts to *translate* the culture, we run the risk of making the text communicate something it never intended.

Rather than translating the culture, then, we need to try to enter the culture. When people want to study the Bible seriously, one of the steps they take is to learn the language. As I teach language students, I am still always faced with the challenge of persuading them that they will not succeed simply by learning enough of the language to engage in translation. Truly learning the language requires leaving English behind, entering the world of the text and understanding the language in its Hebrew context without creating English words in their minds. They must understand the Hebrew as Hebrew text. This is the same with culture. We must make every attempt to set our English categories aside, to leave our cultural ideas behind, and try our best (as limited as the attempt might be) to understand the material in its cultural context without translating it.

How do we do this? How can we recover the way that an ancient culture thought and what categories and ideas and concepts were important to them? We have already noted that language is keyed to culture, and we may then also recognize that literature is

a window to the culture that produced it. We can begin to understand the culture by becoming familiar with its literature. Undoubtedly this sounds like a circular argument: We can't interpret the literature without understanding the culture, and we can't understand the culture without interpreting the literature. If we were dealing only with the Bible, it would indeed be circular, because we have already adjusted it to our own cultural ways of thinking in our long familiarity with it. The key then is to be found in the literature from the rest of the ancient world. Here we will discover many insights into ancient categories, concepts and perspectives. Not only do we expect to find linkages, we do in fact find many such linkages that enhance our understanding of the Bible.

To compare the Old Testament to the literature of the ancient world is not to assume that we expect or find similarity at every point; but neither should we assume or expect differences at every point. We believe the nature of the Bible to be very different from anything else that was available in the ancient world. The very fact that we accept the Old Testament as God's revelation of himself distinguishes it from the literature of Mesopotamia or Egypt. For that matter, Egyptian literature was very different from Mesopotamian literature, and within Mesopotamia, Assyrian literature and Babylonian literature were far from homogeneous. To press the point further, Babylonian literature of the second millennium must be viewed as distinct from Babylonian literature of the first millennium. Finally we must recognize that in any given time period in any given culture in any given city, some people would have had different ideas than others. Having said all of this, we recognize at the same time that there is some common ground. Despite all the distinctions that existed across the ancient world, any given ancient culture was more similar to other ancient cultures than any of them are to Western American or European culture. Comparing the ancient cultures to one an-

other will help us to see those common threads even as we become aware of the distinctions that separated them from one another. As we identify those common threads, we will begin to comprehend how the ancient world differed from our modern (or postmodern) world.

So to return to the illustration of marriage: we will understand the Israelite ideas of marriage much more accurately by becoming informed about marriage in Babylon or Egypt than we will by thinking of marriage in modern terms. Yet we will also find evidence to suggest that Babylonian customs and ideas were not always exactly like Israelite ones. The texts serve as sources of information for us to formulate the shape of each culture's ways of thinking. In most areas there is more similarity between Israel and its neighbors than there is between Israel and our twenty-first-century Western world. As another example, even though today we believe in one God, the God of Israel, and therefore share with them this basic element of faith, the views of deity in the ancient world served as the context for Israel's understanding of deity. It is true that the God of the Bible is far different from the gods of the ancient cultures. But Israel understood its God in reference to what others around them believed. As the Bible indicates, Israelites were continually drawn into the thinking of the cultures around them, whether they were adopting the gods and practices of those around them or whether they were struggling to see their God as distinct.

As a result, we are not looking at ancient literature to try to decide whether Israel borrowed from some of the literature that was known to them. It is to be expected that the Israelites held many concepts and perspectives in common with the rest of the ancient world. This is far different from suggesting literature was borrowed or copied. This is not even a case of Israel being influenced by the peoples around them. Rather we simply recognize

the common conceptual worldview that existed in ancient times. We should therefore not speak of Israel being influenced by that world—they were part of that world.

To illustrate the idea, we must think of ways in which we are products of our own culture. For example, we do not borrow the idea of consumerism, nor are we influenced by it. We *are* consumers because we live in a capitalist society that is built on consumerism. We don't have to think about it or read about it. Even if we wanted to reject its principles we would find it difficult to identify all its different aspects and devise different ways of thinking. One could make similar observations about Aristotelian, Cartesian or Baconian forms of thought. We could speak of capitalism and the value of liberty. We could consider self-determinism and individualism. We could analyze our sense of personal rights and the nature of democracy. These are ideas and ways of thinking that make us who we are in the United States. Where did we learn the principles of naturalism or the nature of the universe? They are simply absorbed through the culture in which we live. One can find all of this in our literature, but we didn't learn it from our literature—it is simply part of our culture that we absorb, often with no alternatives even considered.

By recognizing the importance of the literatures of the ancient world for informing us about its cultures, we need not be concerned that the Bible must consequently be understood as just another piece of ancient mythology. We may well consider some of the literatures of Babylonia and Egypt as mythological, but that very mythology helps us to see the world as they saw it. The Canaanites or the Assyrians did not consider their myths to be made up works of the imagination. Mythology by its nature seeks to explain how the world works and how it came to work that way, and therefore includes a culture's "theory of origins." *We* sometimes label certain literature as "myth" because we do not believe

that the world works that way. The label is a way of holding it at arm's length so as to clarify that we do not share that belief—particularly as it refers to involvement and activities of the gods. But for the people to whom that mythology belonged, it was a real description of deep beliefs. Their "mythology" expressed their beliefs concerning what made the world what it was; it expressed their theories of origins and of how their world worked.

By this definition, our modern mythology is represented by science—our own theories of origins and operations. Science provides what is generally viewed as the consensus concerning what the world is, how it works and how it came to be. Today, science makes no room for deity (though neither does it disprove deity), in contrast to the ancient explanations, which were filled with deity. For the Israelites, Genesis 1 offered explanations of their view of origins and operations, in the same way that mythologies served in the rest of the ancient world and that science serves our Western culture. It represents what the Israelites truly believed about how the world got to be how it is and how it works, though it is not presented as their own ideas, but as revelation from God. The fact that many people today share that biblical belief makes the term *mythology* unpalatable, but it should nevertheless be recognized that Genesis 1 serves the similar function of offering an explanation of origins and how the world operated, not only for Israel, but for people today who put their faith in the Bible.

PROPOSITION 1

Genesis 1 Is Ancient Cosmology

So what are the cultural ideas behind Genesis 1? Our first proposition is that Genesis 1 is ancient cosmology. That is, it does not attempt to describe cosmology in modern terms or address modern questions. The Israelites received no revelation to update or modify their "scientific" understanding of the cosmos. They did not know that stars were suns; they did not know that the earth was spherical and moving through space; they did not know that the sun was much further away than the moon, or even further than the birds flying in the air. They believed that the sky was material (not vaporous), solid enough to support the residence of deity as well as to hold back waters. In these ways, and many others, they thought about the cosmos in much the same way that anyone in the ancient world thought, and not at all like anyone thinks today.[1] And God did not think it important to revise their thinking.

Some Christians approach the text of Genesis as if it has modern science embedded in it or it dictates what modern science should look like. This approach to the text of Genesis 1 is called "concordism," as it seeks to give a modern scientific explanation

for the details in the text. This represents one attempt to "translate" the culture and text for the modern reader. The problem is, we cannot translate their cosmology to our cosmology, nor should we. If we accept Genesis 1 as ancient cosmology, then we need to interpret it as ancient cosmology rather than translate it into modern cosmology. If we try to turn it into modern cosmology, we are making the text say something that it never said. It is not just a case of adding meaning (as more information has become available) it is a case of changing meaning. Since we view the text as authoritative, it is a dangerous thing to change the meaning of the text into something it never intended to say.

Another problem with concordism is that it assumes that the text should be understood in reference to current scientific consensus, which would mean that it would neither correspond to last century's scientific consensus nor to that which may develop in the next century. If God were intent on making his revelation correspond to science, we have to ask which science. We are well aware that science is dynamic rather than static. By its very nature science is in a constant state of flux. If we were to say that God's revelation corresponds to "true science" we adopt an idea contrary to the very nature of science. What is accepted as true today, may not be accepted as true tomorrow, because what science provides is the best explanation of the data at the time. This "best explanation" is accepted by consensus, and often with a few detractors. Science moves forward as ideas are tested and new ones replace old ones. So if God aligned revelation with one particular science, it would have been unintelligible to people who lived prior to the time of that science, and it would be obsolete to those who live after that time. We gain nothing by bringing God's revelation into accordance with today's science. In contrast, it makes perfect sense that God communicated his revelation to his immediate audience in terms they understood.

Since God did not deem it necessary to communicate a different way of imagining the world to Israel but was content for them to retain the native ancient cosmic geography, we can conclude that it was not God's purpose to reveal the details of cosmic geography (defined as the way one thinks about the shape of the cosmos). The shape of the earth, the nature of the sky, the locations of sun, moon and stars, are simply not of significance, and God could communicate what he desired regardless of one's cosmic geography. Concordism tries to figure out how there could have been waters above the sky (Gen 1:7), whereas the view proposed here maintains that this terminology is simply describing cosmic geography in Israelite terms to make a totally different point. (See the next proposition for details.)

If cosmic geography is culturally descriptive rather than revealed truth, it takes its place among many other biblical examples of culturally relative notions. For example, in the ancient world people believed that the seat of intelligence, emotion and personhood was in the internal organs, particularly the heart, but also the liver, kidneys and intestines. Many Bible translations use the English word "mind" when the Hebrew text refers to the entrails, showing the ways in which language and culture are interrelated. In modern language we still refer to the heart metaphorically as the seat of emotion. In the ancient world this was not metaphor, but physiology. Yet we must notice that when God wanted to talk to the Israelites about their intellect, emotions and will, he did not revise their ideas of physiology and feel compelled to reveal the function of the brain. Instead, he adopted the language of the culture to communicate in terms they understood. The idea that people think with their hearts describes physiology in ancient terms for the communication of other matters; it is not revelation concerning physiology. Consequently we need not try to come up with a physiology for our times that would explain how people

think with their entrails. But a serious concordist would have to do so to save the reputation of the Bible. Concordists believe the Bible must agree—be in concord with—all the findings of contemporary science.

Through the entire Bible, there is not a single instance in which God revealed to Israel a science beyond their own culture. No passage offers a scientific perspective that was not common to the Old World science of antiquity.[2]

Beyond the issue of cosmic geography, there are a number of other cultural and potentially scientific issues to consider concerning how people thought in the ancient world. Several questions might be considered:

- What is the level and nature of God's involvement in the world?
- What is God's relationship to the cosmos? Is he manifested within the cosmos? Is he controlling it from outside?
- Is there such a thing as a "natural" world?
- What *is* the cosmos? A collection of material objects that operate on the basis of laws? A machine? A kingdom? A company? A residence?
- Is the account of creation the description of a manufacturing process or the communication of a concept?

These and many other questions will be addressed throughout this book. The answers proposed will not be determined by what best supports what we would prefer to think or by what will eliminate the most problems. Instead we strive to identify, truly and accurately, the thinking in the ancient world, the thinking in the world of the Bible, and to take that where it leads us, whether toward solutions or into more problems.

Before we begin moving through the remainder of the proposi-

tions that make up this book, one of the issues raised in the list above should be addressed immediately. That is, there is no concept of a "natural" world in ancient Near Eastern thinking. The dichotomy between natural and supernatural is a relatively recent one.

Deity pervaded the ancient world. Nothing happened independently of deity. The gods did not "intervene" because that would assume that there was a world of events outside of them that they could step into and out of. The Israelites, along with everyone else in the ancient world, believed instead that every event was the act of deity—that every plant that grew, every baby born, every drop of rain and every climatic disaster was an act of God. No "natural" laws governed the cosmos; deity ran the cosmos or was inherent in it. There were no "miracles" (in the sense of events deviating from that which was "natural"), there were only signs of the deity's activity (sometimes favorable, sometimes not). The idea that deity got things running then just stood back or engaged himself elsewhere (deism) would have been laughable in the ancient world because it was not even conceivable. As suggested by Richard Bube, if God were to unplug himself in that way from the cosmos, we and everything else in the cosmos would simply cease to exist.[3] There is nothing "natural" about the world in biblical theology, nor should there be in ours. This does not suggest that God micromanages the world,[4] only that he is thoroughly involved in the operations and functions of the world.

As a result, we should not expect anything in the Bible or in the rest of the ancient Near East to engage in the discussion of how God's level of creative activity relates to the "natural" world (i.e., what we call naturalistic process or the laws of nature). The categories of "natural" and "supernatural" have no meaning to them, let alone any interest (despite the fact that in our modern world such questions take center stage in the discussion). The ancients would never dream of addressing how things might have come

into being without God or what "natural" processes he might have used. Notice that even the biblical text merges these perspectives when Genesis 1:24 says, "Let the earth bring forth living creatures" but then follows up with the conclusion in the very next verse, "So God made the animals."[5] All of these issues are modern issues imposed on the text and not the issues in the culture of the ancient world. We cannot expect the text to address them, nor can we configure the information of the text to force it to comply with the questions we long to have answered. We must take the text on its own terms—it is not written to us. Much to our dismay then, we will find that the text is impervious to many of the questions that consume us in today's dialogues. Though we long for the Bible to weigh in on these issues and give us biblical perspectives or answers, we dare not impose such an obligation on the text. God has chosen the agenda of the text, and we must be content with the wisdom of those choices. If we attempt to commandeer the text to address our issues, we distort it in the process.

As we begin our study of Genesis 1 then, we must be aware of the danger that lurks when we impose our own cultural ideas on the text without thinking. The Bible's message must not be subjected to cultural imperialism. Its message transcends the culture in which it originated, but the form in which the message was imbedded was fully permeated by the ancient culture. This was God's design and we ignore it at our peril. Sound interpretation proceeds from the belief that the divine and human authors were competent communicators and that we can therefore comprehend their communication. But to do so, we must respect the integrity of the author by refraining from replacing his message with our own. Though we cannot expect to be able to think like they thought, or read their minds, or penetrate very deeply into so much that is opaque to us in their culture, we can begin to see that there *are* other ways of thinking besides our own and begin to

identify some of the ways in which we have been presumptuously ethnocentric. Though our understanding of ancient culture will always be limited, ancient literature is the key to a proper interpretation of the text, and sufficient amounts of it are available to allow us to make progress in our understanding.

Technical Support

These are sources where I have dealt with these issues in more depth:

"Ancient Near Eastern Background Studies." In *Dictionary for Theological Interpretation of the Bible,* edited by Kevin J. Vanhoozer et al., pp. 40-45. Grand Rapids: Baker Academic, 2005.

Ancient Near Eastern Thought and the Old Testament: Introducing the Conceptual World of the Hebrew Bible. Grand Rapids: Baker Academic, 2006.

Genesis. New International Version Application Commentary. Grand Rapids: Zondervan, 2001.

"Interpreting the Bible as an Ancient Near Eastern Document." In *Israel: Ancient Kingdom or Late Invention,* edited by Daniel I. Block, pp. 298-327. Nashville: Broadman & Holman, 2008.

PROPOSITION 2

Ancient Cosmology Is Function Oriented

What does it mean for something to exist? It might seem like an odd question with perhaps an obvious answer, but it is not as simple as it may seem. For example, when we say that a chair exists, we are expressing a conclusion on the basis of an assumption that certain properties of the chair define it as existing. Without getting bogged down in philosophy, in our contemporary ways of thinking, a chair exists because it is material. We can detect it with our senses (particularly sight and touch). We can analyze what it is made from. These physical qualities are what make the chair real, and because of them we consider it to exist. But there are other ways to think about the question of existence.

For example, we might consider what we mean when we talk about a company "existing." It would clearly not be the same as a chair existing. Does a company exist when it has filed the appropriate papers of incorporation? Does it exist when it has a building or a website? In some sense the answer to these would have to be yes. But many would prefer to speak of a company as existing when it is doing business. Consider what is communicated when a small retail business frames and displays the first dollar bill from

the first sale. As another alternative, consider a restaurant that is required to display its current permit from the city department of health. Without that permit, the restaurant could be said not to exist, for it cannot do any business. Here existence is connected to the authority that governs existence in relation to the function the business serves. It is the government permit that causes that restaurant to exist, and its existence is defined in functional terms.

The question of existence and the previous examples introduce a concept that philosophers refer to as "ontology." Most people do not use the word *ontology* on a regular basis, and so it can be confusing, but the concept it expresses is relatively simple. The ontology of *X* is what it means for *X* to exist. If we speak of the ontology of evil, we discuss what it means for evil to exist in the world. The ontology of a chair or a company would likewise ask what it means when we say they exist. How would we understand their existence? What is the principle quality of its existence? The view represented in our discussion of the chair would be labeled a "material ontology"—the belief that something exists by virtue of its physical properties and its ability to be experienced by the senses. The example of the company might be labeled a "functional ontology."

In a discussion of origins we need to focus on the ontology of the cosmos. What does it mean for the world or the cosmos (or the objects in it) to exist? How should we think about cosmic ontology? When we speak of cosmic ontology these days, it can be seen that our culture views existence, and therefore meaning, in material terms. Our material view of ontology in turn determines how we think about creation, and it is easy to see how. If ontology defines the terms of existence, and creation means to bring something into existence, then one's ontology sets the parameters by which one thinks about creation. Creation of a chair would be a very different process than the creation of a company. Since in our

culture we believe that existence is material, we consequently believe that to create something means to bring its material properties into existence. Thus our discussions of origins tend to focus on material origins.

All of this probably sounds like a silly discussion to many people. Of course something exists because it has material properties; of course creation means to give something material properties! Many would be inclined to ask in their exasperation, what else could it be? But our example of a company above has already alerted us to another possibility. Is it possible to have a cosmic ontology that is function oriented and see creation (bringing something into existence) in those terms?

Even staying in the realm of English usage we can see that we don't always use the verb *create* in material terms. When we create a committee, create a curriculum, create havoc or create a masterpiece, we are not involved in a material manufacturing process. Though a curriculum, for instance, eventually takes a material form, the creation of the curriculum is more a process of organizing ideas and goals. To understand what it means to "create" a curriculum, we would have to decide what it means for a curriculum to exist. What would be the ontology of a curriculum? Whatever our answer might be, these examples should suggest that there are alternate ways of thinking about creative activity, even in our culture. If a curriculum's ontology is functional, then creating that curriculum involves function-giving activities.

With that background in mind, we need to return to the question of cosmic ontology. Most of us never consider alternative ontologies. Our culture has given us our beliefs about what it means for the cosmos to exist (material ontology; existence is material; creation is a material act) and many of us would not realize that these beliefs are the result of a choice. It is a testimony to the pervasive influence of culture that this material ontology seems so

obvious as to prevent any thought that it is open to discussion.

As some of the above examples indicate, however, there are alternatives. If we are going to understand a creation account from the ancient world we must understand what they meant by "creation," and to do that we must consider their cosmic ontology instead of supplying our own. It is less important what we might think about ontology. If we are dealing with an ancient account we must ask questions about the world of that text: What did it mean to someone in the ancient world to say that the world existed? What sort of activity brought the world into that state of existence and meaning? What constituted a creative act?

In this book I propose that people in the ancient world believed that something existed not by virtue of its material properties, *but by virtue of its having a function in an ordered system*. Here I do not refer to an ordered system in scientific terms, but an ordered system in human terms, that is, in relation to society and culture. In this sort of functional ontology, the sun does not exist by virtue of its material properties, or even by its function as a burning ball of gas. Rather it exists by virtue of the role that it has in *its* sphere of existence, particularly in the way that it functions for humankind and human society. In theory, this way of thinking could result in something being included in the "existent" category in a material way, but still considered in the "nonexistent" category in functional terms (see the illustration of the restaurant mentioned above). In a functional ontology, to bring something into existence would require giving it a function or a role in an ordered system, rather than giving it material properties. Consequently, something could be manufactured physically but still not "exist" if it has not become functional.

Perhaps a modern example can help. If we think of "creating" a computer, we understand that there are many stages in the process. At the most basic level the casing and the electronics have to

be manufactured, the keyboard and other peripherals designed and so forth. This is the basic production and manufacturing process—what we might call the material phase of production. After someone has assembled all those manufactured parts we might say that the computer exists. But another aspect involves writing the programs. Even after those programs are written, if the software has not been installed on the computer, its "existence" is meaningless—it cannot function. So there is a separate process of installing the software that makes the computer theoretically functional. But what if there is no power source (electric or battery)? This is another obstacle to the computer's existence. Adding a power source, we might now claim that its existence is finally and completely achieved. But what if no one sits at the keyboard or knows how to use or even desires to use it? It remains nonfunctional, and, for all intents and purposes, as if it did not exist. We can see that different observers might be inclined to attribute "existence" to the computer at different stages in the process.

In a functional ontology, all of the above steps are important in the definition of existence. Unless people (or gods) are there to benefit from functions, existence is not achieved. Unless something is integrated into a working, ordered system, it does not exist. Consequently, the actual creative act is to assign something its functioning role in the ordered system. That is what brings it into existence. Of course something must have physical properties before it can be given its function, but the critical question is, what stage is defined as "creation"?

In the ancient world they were not ignorant of the senses and the level at which objects could be perceived by the senses. They would have no difficulty understanding the physical nature of objects. The question here concerns not what they perceived but what they gave significance to. When we speak of a computer we are certainly aware of the tower casing, and it is obvious that

someone manufactured that. But that fact does not occupy our attention, nor do we confuse the manufacturing of the tower casing with the "creation" of the computer. To say this in another way, our ontology focuses on what we believe to be most significant. In the ancient world, what was most crucial and significant to their understanding of existence was the way that the parts of the cosmos functioned, not their material status.

How can we know this? The evidence comes both from the biblical text and from the literature of the ancient world. The former is more important because, of course, it is possible for the biblical text to take a different view of ontology than the ancient world. Propositions 3-11 will be offering the biblical evidence. For now then, we can set the stage from the ancient Near Eastern literature. Then we will see in which ways the biblical perspective corresponds and in which ways it differs.

A number of ancient Near Eastern texts giving information about creation come from the Sumerians, the Babylonians and the Egyptians.[1] Full-fledged creation texts include the following:

Egyptian:

- Memphite Theology (featuring Ptah)
- Papyrus Leiden I 350 (Hermopolis, featuring Amun)
- Pyramid Texts, Coffin Texts and Book of the Dead (especially from Heliopolis, featuring Atum)

Babylonian:

- Atrahasis
- *Enuma Elish*

Other sorts of texts that are not in and of themselves creation texts but contain information about creation include the following:

Sumerian. Numerous Sumerian texts contain cosmogonic (cos-

mogony = an account of the origins of the cosmos) or cosmological statements. Myths make statements in passing and rituals at times contain mythological sections that are cosmogonic. Even genealogical lists of the gods are thought to give hints to the extent that cosmogony can be inferred from theogony (theogony = an account of the origins of deity). Narrative texts from Nippur (an early sacred center in southern Mesopotamia) give the god Enlil a prominent role, while texts from Eridu (considered by the Sumerians to be the first city in history) favor the god Enki. Prominent also are the disputation texts (e.g., Tree and Reed, and such texts which feature discussions between animals or plants) which often have cosmogonic introductions. Akkadian cosmological information is also found in incantation texts as well as in introductions to dedicatory inscriptions.[2]

Egyptian. The most important allusions are found in the wisdom text titled the Instruction of Merikare and in cosmological depictions such as that on the centograph of Seti I.

Additional creation material is found in the Hittite Kumarbi Cycle and perhaps in the Ugaritic Baal Cycle.

What we learn from these can be summarized under several headings:

- ***Shape of the cosmos.*** Old world cosmic geography is based on what they could observe from their vantage point, just as ours is based on what we are able to observe given our scientific information (including, e.g., math and physics). If water comes down, there must be some up there—so they all thought in terms of cosmic waters in the sky. If it doesn't come down all the time, something must hold the water back—so it was common to think of something somewhat solid (firmament). If there is something solid holding back the waters, something must hold up this firmament—so they thought of mountains

or ropes or tent poles. Waters come up from the ground so there must be waters under the ground, yet something must hold the ground steady. On and on the logic goes, following fairly transparent paths. As with any cosmic geography, the theories about structures are developed to understand the functions and operations as they are experienced and observed. Creation texts described these structures being put into place so that the operations would commence or continue.

- ***Role of deity.*** In the transition from cosmic geography to the role of deity, it is important to note that in the Egyptian descriptions of cosmic geography, all of those elements that we might consider cosmic structures (firmament, sun, moon, air, earth, etc.) are depicted as gods. This is strong evidence that the Egyptians were more interested in the functions of these gods than in the actual material structures. The gods represented authority and jurisdiction. The attributes of the deities were manifested in the cosmic elements. The cosmos functioned as an extension of the gods, and the gods functioned within the cosmos. The Mesopotamian texts do not have the artistic depictions, but they confirm the same interests, as the gods are seen in close relationship to the elements of the cosmos. It is the divine decree or divine assignment that dictates the role and function of the various elements.
- ***Origins of cosmos and deity.*** With the functions of the cosmos and the jurisdiction of the deities so closely correlated, it is no surprise that we find the origins of the gods (theogony) connected to the origins of the cosmic elements (cosmogony). This coinciding of origins indicates that those origins are functional in nature.
- ***Divine conflict.*** *Theomachy* is a term that refers to battles among the gods. Particularly in the Babylonian creation epic, *Enuma*

Elish, creation is accomplished in the aftermath of a battle for control of the pantheon and the cosmos.

- ***Features.***

  Nonfunctional. Nearly all the creation accounts of the ancient world start their story with no operational system in place. Egyptian texts talk about a singularity—nothing having yet been separated out. All is inert and undifferentiated. Similarly, one Sumerian text speaks of a time when there was darkness, no flow of water, nothing being produced, no rituals performed, and heaven and earth were still joined together. Even the gods were not yet there.[3] For an example in Egyptian literature, the god Atum is conceptualized as the primordial monad—the singularity embodying all the potential of the cosmos, from whom all things were separated and thereby were created.[4]

  Primeval waters. Creation often begins with that which emerges from the waters—whether a deity or land (e.g., the Egyptian Primeval Hillock). These primeval waters are designated the "nonexistent" in Egyptian texts, a key indicator of their functional ontology. The god Atum is said to have developed "out of the Flood, out of the Waters, out of darkness, out of lostness."[5] The Waters is termed the "father of the gods."[6]

  Naming. Names in the ancient world were associated with identity, role and function. Consequently, naming is a typical part of the creation narratives. The Egyptian Memphite Theology identifies the Creator as the one who pronounced the name of everything. *Enuma Elish* begins with neither the heavens and earth nor the gods having yet been named. In this it is clear that naming is a significant part of something's existence, and therefore of its creation.

Separating. This is the most common creative activity in Egyptian texts and is also observable in a number of Mesopotamian texts. Heavens and earth are most often separated. Even Hittite literature indicates this important step when one myth talks about cutting heaven and earth apart with a copper cutting tool.[7] Others include separation of the upper and lower waters and waters from land.

Creatures. It is interesting that living creatures are almost never included in the creation accounts. The only exception is in the Akkadian Disputation of Two Insects, which mentions classification by size and by wild or domesticated nature.

Human beings. Many accounts of creation include human beings. Texts speak of what they are made of (clay, blood of deity, breath of deity) but not in a chemical sense. These ingredients communicate instead the important issues of identity and relationship (see further in proposition 6).

Before we leave the ancient Near Eastern texts, a few specific texts should be noted. The Egyptian Papyrus Insinger is from the Ptolemaic period (dated to the second or third century B.C., though the manuscript is from about the first century A.D.). Toward the end of this piece of wisdom literature, the paragraph designated the twenty-fourth Instruction contains eighteen lines of what the creations describe as the hidden work of the god.

He created light and darkness in which is every creature.
He created the earth, begetting millions, swallowing them up and begetting again.
He created day, month, and year through the commands of the lord of command.
He created summer and winter through the rising and setting of Sothis.

He created food before those who are alive, the wonder of the fields.
He created the constellation of those that are in the sky, so that those on earth should learn them.
He created sweet water in it which all the lands desire.
He created the breath in the egg though there is no access to it.
He created birth in every womb from the semen which they receive.
He created sinews and bones out of the same semen.
He created going and coming in the whole earth through the trembling of the ground.
He created sleep to end weariness, waking for looking after food.
He created remedies to end illness, wine to end affliction.
He created the dream to show the way to the dreamer in his blindness.
He created life and death before him for the torment of the impious man.
He created wealth for truthfulness, poverty for falsehood.
He created work for the stupid man, food for the common man.
He created the succession of generations so as to make them live.[8]

Though this text dates from well into the Hellenistic period, the functional orientation is obvious. Another example selected from a millennium earlier (twelfth c. B.C.) and from the opposite end of the ancient world demonstrates how pervasive this perspective was. In the Babylonian creation epic, *Enuma Elish,* Marduk defeats the rebellious gods and then does his work of "creation" in tablet five, focusing on several key functional features:

- Lines 1-24 show Marduk organizing the celestial sphere: stars,

constellations, the phases of the moon.

- Lines 25-45 are not represented in many of the translations included in the major anthologies of ancient texts. Even in their broken form, however, their basic content can be discerned.[9] In 38-40 Marduk makes the night and day and sets it up so that there is an equal amount of light hours and night hours over the course of the year.[10] On line 46 he fixes the watches of night and day. These creative activities have to do with organizing time.
- Lines 47-52 are more legible and deal with the creation of the clouds, wind, rain, and fog, and appointing himself to control them. Here the functions that concern the weather are created.
- Lines 53-58 tell of the harnessing of the waters of Tiamat for the purpose of providing the basis of agriculture. It includes the piling up of dirt, releasing the Tigris and Euphrates, and digging holes to manage the catchwater.
- Lines 59-68 conclude with the transition into the enthronement of Marduk and the building of his temple and the city of Babylon—the grand climax. It is no surprise that a creation text should ultimately be about the god who controls the cosmos and about the origin of his temple. We will see below that cosmic origins and temple origins are intricately intertwined.

Finally, in a Sumerian debate text still another millennium earlier (third millennium), The Debate Between Winter and Summer, Enlil is involved in creation in these same areas (day and night/time; fertility/food; sluices of heaven/weather and seasons):

> An [god's name] lifted his head in pride and brought forth a good day. He laid plans for …… and spread the population wide. Enlil set his foot upon the earth like a great bull. En-

> lil, the king of all lands, set his mind to increasing the good day of abundance, to making the …… night resplendent in celebration, to making flax grow, to making barley proliferate, to guaranteeing the spring floods at the quay, to making …… lengthen (?) their days in abundance, to making Summer close the sluices of heaven, and to making Winter guarantee plentiful water at the quay.[11]

In conclusion, analysts of the ancient Near Eastern creation literature often observe that nothing material is actually made in these accounts. This is an intriguing observation. Scholars who have assumed that true acts of creation must by definition involve production of material objects are apparently baffled that all of these so-called creation texts have nothing of what these scholars would consider to be creation activities. I propose that the solution is to modify what we consider creation activities based on what we find in the literature. If we follow the sense of the literature and its ideas of creation, we find that people in the ancient Near East did not think of creation in terms of making material things—instead, everything is function oriented. The gods are beginning their own operations and are making all of the elements of the cosmos operational. Creation thus constituted bringing order to the cosmos from an originally nonfunctional condition. It is from this reading of the literature that we may deduce a functional ontology in the ancient world—that is, that they offer accounts of functional origins rather than accounts of material origins. Consequently, to create something (cause it to exist) in the ancient world means to give it a function, not material properties. We need to note the contrast: we tend to think of the cosmos as a machine and argue whether someone is running the machine or not. The ancient world viewed the cosmos more like a company or a kingdom.[12]

Would they have believed that their gods also manufactured the material? Absolutely, for nothing can be thought to stand apart from the gods. But they show little interest in material origins. Such issues were simply insignificant to them. If we paused to think about it, we might begin to wonder why material origins have taken on such central significance to us. Consider:

- As employees we pay little attention to the history of the company we work for. We are more interested in its corporate structure and what responsibilities each department has. We want to know about who reports to whom and who is in charge of certain operations and tasks.
- When we go to the theater, we may have passing interest in the construction of the set and stage works, but we understand that the play exists in the roles of the performers. When a person comes late and asks what has happened so far, the question is not answered by information about the costume designer, script writer and the hiring of the cast. Telling the person about all that would be offering the wrong sort of origins information.

Some sorts of origins are more important than other sorts of origins.

In summary, this chapter has noted that our own material definition of existence is only one of the possible ways to define existence. I have suggested that in the ancient world they defined it differently. They thought of existence as defined by having a function in an ordered system.

Technical Support

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PROPOSITION 3

"Create" (Hebrew *bārāʾ*) Concerns Functions

The previous chapter presented evidence that creation accounts in the ancient world characteristically showed interest in the functional level rather than the material level. Furthermore it proposed that the ancient world defined existence in terms of having a function in an ordered system. This functional ontology indicated that the line between existence and nonexistence was functional, not material.

We now turn our attention to the creation account in Genesis 1 to discover whether it will follow suit or not. Our first matter for discussion is the Hebrew verb *bārāʾ*, translated as "create" in verse 1. What exactly does it mean? Here we cannot be content with delving into the English verb "create"—though that shows an amazing amount of flexibility. Instead we must focus on the verb in Hebrew and how its users would have understood its meaning. If we are trying to understand whether the Israelites thought of existence in functional terms (like the rest of the ancient Near East) or material terms (like we tend to do), one of the places we might expect to find help is in observing what is involved in bring-

ing something into existence. "Create" is the English word for bringing something into existence. If existence is defined in material terms, creating is a material activity. If existence is defined in functional terms, creating is a function-giving activity. We cannot assume that creating is a material activity just because our ontology happens to be material. We must let the word and its usage speak for itself.

It is interesting that many people who discuss Genesis 1 express an interest in interpreting the chapter "literally." By this they generally mean that it is to be taken exactly for what it says rather than to understand Genesis 1 simply in metaphoric, allegorical or symbolic terms. Of course we recognize that sometimes writers intend to communicate by means of metaphor or allegory. When someone insists that Genesis 1 should be interpreted literally it is often an expression of their conviction that the interpreter rather than the author has initiated another level of meaning. Our interpretive commitment is to read the text at what I will call "face value." I will have more to say about this in proposition 11. For the moment, let us consider the concept and challenge of "literal" interpretation.

The English reader must face a difficult fact: one cannot comprehend the literal meaning of a word in the Old Testament without knowing Hebrew or having access to the analysis by someone who does. It does us no good to know what "create" literally means—we have to know what *bārāʾ* literally means.[1] Before that leads to frustration or despair, we can recognize that even those without knowledge of Hebrew can check the data of the Hebrew analyst at some level. A quick review of words and how they work will help us all to see how this is so.

First, we recognize that there is no ancient dictionary of Hebrew that gives us the definitions of all of the words (especially not in English). Instead we rely on the careful work done by commentators and translators over the centuries. How do these schol-

ars figure out the meaning of words? The same way all of us do in whatever language we speak—by usage.[2] The meanings of words are established and determined by the ways in which they are used. This includes the kinds of sentences they are used in, the words they can be compared to (synonyms or antonyms), and the words they are used in connection with. For nouns this means what verbs they take; for verbs it includes what subjects or objects are associated with them. It is context that tells us whether a word is used metaphorically or with an idiomatic or technical sense.[3] Consequently a scholar who says that a Hebrew word means this or that should offer evidence from usage to support his or her findings. Having been provided a list of references in such an analysis, even someone who does not know Hebrew can double check the data. So, for instance, when I say that all the occurrences of *bārāʾ* have God as the subject or implied subject, an English reader can look at all the occurrences and see that this is so.

Now the analysis can begin. What can be said about the Hebrew verb *bārāʾ*? First, there is no passage in the Old Testament that offers an explanatory gloss for *bārāʾ*—that is, that says "by *bārāʾ* I mean *X*." So, as usual, we must depend on circumstantial, contextual analysis: subjects, objects and related terms.

Subjects

The verb *bārāʾ* occurs about fifty times in the Old Testament. As referred to above, deity is always either the subject or the implied subject (in passive constructions) of the verb. It can therefore be confidently asserted that the activity is inherently a divine activity and not one that humans can perform or participate in. This observation is widely discussed, and on this conclusion all commentators agree.

Objects

It is of interest that few commentators discuss the objects of the verb, but this is the most important issue for our analysis. Since we are exploring what constitutes creative activity (specifically, material or functional), then the nature of that which has been created is of utmost significance. If the objects of the verb are consistently material that would be important information; likewise if they are consistently functional. Of course the profile is unlikely to be so straightforward. Ambiguous contexts are bound to exist, so a bit of methodology must be discussed.

Theoretically, the verb could be broad enough to include either material or functional activity. For that matter, we might conclude that it involves (at least in some cases) both material and functional. Assuming that there will be ambiguous cases (and there are), it is important to see if we have any contexts which *must* be understood in material terms or which *must* be understood in functional terms. If all occurrences were either material or ambiguous, we could not claim support for a functional understanding. If all occurrences were either functional or ambiguous, we could not claim clear support for a material understanding. If there are clear examples that can be only functional, and other clear examples that can only be material, then we would conclude that the verb could work in either kind of context, and ambiguous cases would have to be dealt with on a case-by-case basis.

Table 1 provides a comprehensive list of the objects of *bārāʾ*.[4] (See p. 42.)

The grammatical objects of the verb can be summarized in the following categories:

cosmos (10, including new cosmos)
people in general (10)
specific groups of people (6)

Table 1

Reference	Object	Comments
Gen 1:1	heavens and earth	
Gen 1:21	creatures of the sea	
Gen 1:27	people	male and female
Gen 1:27 (2)	people	in his image
Gen 2:3	(none)	
Gen 2:4	heavens and earth	
Gen 5:1	people	likeness of God
Gen 5:2	people	male and female
Gen 5:2	people	
Gen 6:7	people	
Ex 34:10	wonders	parallel to *ʿāśâ* (made/did)
Num 16:30	something new (debatable)	earth swallowing rebels
Deut 4:32	people	
Ps 51:10	pure heart	
Ps 89:12	north and south	
Ps 89:47	people	for futility
Ps 102:18	people not yet created	to praise the Lord
Ps 104:30	creatures	renewing the face of the earth
Ps 148:5	celestial inhabitants	to praise the Lord
Eccles 12:1	you	
Is 4:5	cloud of smoke	
Is 40:26	starry host	called by name, kept track of
Is 40:28	ends of the earth	
Is 41:20	rivers flowing in desert	to meet needs of his people
Is 42:5	heavens	stretched out
Is 43:1	Jacob	= Israel
Is 43:7	everyone called by my name	for my glory
Is 43:15	Israel	
Is 45:7	darkness	parallel to forming light
Is 45:7	disaster	parallel to bringing prosperity
Is 45:8	heavens and earth	to produce salvation and righteousness
Is 45:12	people	
Is 45:18	earth	did not create it to be *(tōhû)*

Table 1 continued

Is 45:18	heavens	to be inhabited
Is 48:7	new things, hidden things	
Is 54:16	blacksmith	to forge a weapon
Is 54:16	destroyer	to work havoc
Is 57:19	praise	
Is 65:17	new heavens and new earth	
Is 65:18	new heavens and new earth	
Is 65:18	Jerusalem	to be a delight
Jer 31:22	new thing	woman to surround man
Ezek 21:30	Ammonites	
Ezek 28:13	King of tyre	
Ezek 28:15	King of tyre	
Amos 4:13	wind	
Mal 2:10	covenant people	

specific individuals or types of individuals (5)
creatures (2)
phenomena (e.g., darkness) (10)
components of cosmic geography (3)
condition (1, pure heart)

This list shows that grammatical objects of the verb are not easily identified in material terms, and even when they are, it is questionable that the context is objectifying them.[5] That is, no clear example occurs that demands a material perspective for the verb, though many are ambiguous.[6] In contrast, a large percentage of the contexts require a functional understanding. These data cannot be used to prove a functional ontology, but they offer support that existence is viewed in functional rather than material terms, as is true throughout the rest of the ancient world. If the Israelites understood the word *bārāʾ* to convey creation in functional terms, then that is the most "literal" understanding that we can achieve. Such an understanding does not represent

an attempt to accommodate modern science or to neutralize the biblical text. The truest meaning of a text is found in what the author and hearers would have thought.

This view finds support from an unexpected direction. It has long been observed that in the contexts of *bārāʾ* no materials for the creative act are ever mentioned, and an investigation of all the passages mentioned above substantiate that claim. How interesting it is that these scholars then draw the conclusion that *bārāʾ* implies creation out of nothing *(ex nihilo).* One can see with a moment of thought that such a conclusion assumes that "create" is a material activity. To expand their reasoning for clarity's sake here: Since "create" is a material activity (assumed on their part), and since the contexts never mention the materials used (as demonstrated by the evidence), then the material object must have been brought into existence without using other materials (i.e., out of nothing). But one can see that the whole line of reasoning only works if one can assume that *bārāʾ* is a material activity. In contrast, if, as the analysis of objects presented above suggests, *bārāʾ* is a functional activity, it would be ludicrous to expect that materials are being used in the activity. In other words, the absence of reference to materials, rather than suggesting material creation out of nothing, is better explained as indication that *bārāʾ* is not a material activity but a functional one. This is not a view that has been rejected by other scholars; it is simply one they have never considered because their material ontology was a blind presupposition for which no alternative was ever considered.

An important caveat must be noted at this point. If we conclude that Genesis 1 is not an account of material origins, we are not thereby suggesting that God is not responsible for material origins. I firmly believe that God *is* fully responsible for material origins, and that, in fact, material origins do involve at some point creation out of nothing. But that theological question is not the

one we are asking. We are asking a textual question: What sort of origins account do we find in Genesis 1? Or what aspect of origins is addressed in Genesis 1? Most interpreters have generally thought that Genesis 1 contains an account of material origins because that was the only sort of origins that our material culture was interested in. It wasn't that scholars examined all the possible levels at which origins could be discussed; they presupposed the material aspect.

Finally, we must put the verb *bārāʾ* in its context in verse 1 where it tells us that "in the beginning God created the heavens and the earth." One immediate question that would occur is, beginning of what? The answer is not transparent. We must ask what "beginning" refers to and how verse 1 functions in relation to the rest of the context.[7]

Beginning

In Hebrew usage this adverb typically introduces a period of time rather than a point in time.[8] We can most easily see this in Job 8:7, which speaks of the early part of Job's life, and Jeremiah 28:1, which refers to the beginning period of Zedekiah's reign. This usage happens to correspond with ideas that are reflected in ancient Near Eastern creation texts. Egyptian texts refer to the "first occasion," which implies the first occurrence of an event that is to be repeated or continued. In Akkadian the comparable term to the Hebrew refers to the first part or first installment. All of this information leads us to conclude that the "beginning" is a way of talking about the seven-day *period* rather than a *point* in time prior to the seven days.

The Role of Verse 1

If the "beginning" refers to the seven-day period rather than to a point in time before the seven-day period, then we would con-

clude that the first verse does not record a separate act of creation that occurred prior to the seven days—but that in fact the creation that it refers to is recounted in the seven days. This suggests that verse 1 serves as a literary introduction to the rest of the chapter. This suggestion is confirmed by the fact that Genesis 2:1 concludes the seven-day report with the statement that the "heavens and earth were completed," indicating that the creation of the heavens and earth was the work of the seven days, not something that preceded them.

Such a conclusion is also supported by the overall structure of the book of Genesis. All commentators have recognized the recurrent transitionary formula "This is the account *(tôlĕdôt)* of . . ." used eleven times by the author to identify the sections of the book of Genesis. This shows us that the author of Genesis indeed did use initial statements as literary introductions to sections. The first of these occurs in Genesis 2:4 as the first transition from the seven-day cosmogony to the Garden of Eden account. As a transitionary phrase it links what has come before to what comes next. Sometimes what follows is genealogical information that offers information about, for example, what became of Esau or Ishmael. Other times it is followed by narratives that offer information concerning, for instance, what came of Terah's family (thus the stories of Abram). The point is that this formula can only continue an already established sequence—it cannot begin that sequence.

The word "beginning" would be the logical term to introduce such a sequence. It would indicate the initial period, while the *tôlĕdôt* sections would introduce successive periods. If this were the case, the book would now have twelve formally designated sections (much more logical than eleven, considering the numbers that have symbolic significance in the Bible).

The proposals of this chapter can be summarized by the following expanded interpretive translation of verse 1: "In the initial

period, God created by assigning functions throughout the heavens and the earth, and this is how he did it." The chapter *does* involve creative activities, but all in relation to the way that the ancient world thought about creation and existence: by naming, separating and assigning functions and roles in an ordered system. This was accomplished in the seven-day period that the text calls "the beginning." Genesis 2:3 comes back to this in its summary as it indicates the completion of the *bārāʾ* activities over the seven-day period.

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PROPOSITION 4

The Beginning State in Genesis 1 Is Nonfunctional

If existence in the ancient world was best defined in functional terms rather than material ones, as suggested in previous chapters, and "create" is the activity that brings the transition from nonexistence to existence, then "creation" would also be a functional activity (as suggested for the Hebrew terminology in chapter 3). Further evidence should then be found in how creation accounts describe the "before" and "after" conditions. If the text offered an account of material origins, we would expect it to begin with no material. If the text offered an account of functional origins, we would expect it to begin with no functions.

Genesis 1 offers its starting point in verse 2, where it describes the earth as *tōhû* and *bōhû*. These terms are translated in a variety of ways in the most well-known English translations but with little true variation:

KJV, NASV: Formless and void
ESV, NKJV: Without form and void
NIV, NLT: Formless and empty
NRSV: A formless void
NJPS: Unformed and void
Net Bible: Without shape and empty

NCV: Empty and had no form

In contrast, detailed technical studies on the terms point in other directions. For example, David Tsumura, after a full semantic analysis, translates *tōhû* as "unproductive" rather than descriptive of something without physical form or shape.[1] As with our previous word study in chapter three, we must again take a look at the usage of the term to understand its meaning. In this study we must focus our attention on *tōhû* because the second term, *bōhû,* occurs only three times, and in all three is used in combination with *tōhû*. The Hebrew word *tōhû* occurs twenty times, as follows:

Table 2

Deut 32:10	parallel to the wilderness; described by "howling"
1 Sam 12:21	descriptive of idols who can accomplish nothing
Job 6:18	wasteland away from wadis where caravans perish for lack of water
Job 12:24	wandering in a trackless waste
Job 26:7	what the north is stretched over
Psalm 107:40	wandering in a trackless waste
Is 24:10	a *tōhû* settlement is described as desolate
Is 29:21	with *tōhû* they turn aside righteousness (similar to Is 59:4)
Is 34:11	measuring line of *tōhû* and plumb stone of *bōhû*
Is 40:17	worthlessness of the nations; parallel to "nothingness" and the "end"(?)
Is 40:23	rulers of the world made as *tōhû;* parallel to "nothingness"
Is 41:29	images are wind and *tōhû;* parallel to "end"(?) of their deeds
Is 44:9	all who make images are *tōhû;* parallel to without profit
Is 45:18	God did not bring it into existence *tōhû;* but in contrast formed it for habitation (intended function)
Is 45:19	Israelites not instructed to seek God in waste places; parallel to land of darkness
Is 49:4	expending one's strength to no purpose *(tōhû)*
Is 59:4	describes relying on empty arguments or worthless words (i.e., dissembling); parallel to that which is false or worthless
Jer 4:23	description of *tōhû* and *bōhû:* light gone, mountains quaking, no people, no birds, fruitful lands waste, towns in ruins

Studying this list, one can see nothing in these contexts that would lead us to believe that *tōhû* has anything to do with material form. The contexts in which they occur and the words and phrases used in parallel suggest rather that the word describes that which is nonfunctional, having no purpose and generally unproductive in human terms. Applying it as a descriptive term to nouns that represent geographical areas, nations, cities, people or idols all suggest the same conclusion. A word that had to do with material shape would not serve well in these contexts.

Why then has the term been so consistently translated as a reference to the absence of material form? One can only surmise that the translation tradition has been driven by the predominant material focus of the cultures that produced the translations. We must never forget that translation is the most basic act of interpretation. One cannot convey words meaningfully from a source language to a target language without first determining what they think the text means to say. If the translators were interpreting the text as an account of material origins, it is no surprise that *tōhû* was translated in material terms.

But even the material translation of *tōhû* could not obscure what is clear in verse 2: here at the beginning of the creation process, there is already material in existence—the waters of the deep. These primeval cosmic waters are the classic form that nonexistence takes in the functionally oriented ancient world.

Given the semantic information presented above and the treatment in the technical literature, we propose that *tōhû* and *bōhû* together convey the idea of nonexistence (in their functional ontology), that is, that the earth is described as not yet functioning in an ordered system. (Functional) creation has not yet taken place and therefore there is only (functional) nonexistence.

With this concept in mind, we return to Job 26:7: "He spreads out the northern (skies) over empty space *(tōhû);* he suspends the

earth over nothing." The word translated "nothing" occurs only here in the Old Testament but is very important as it is parallel to *tōhû* in the passage. Technical analysis leads me to the conclusion that Job 26:7 describes the creation of heaven and earth in relation to the "nonexistent" cosmic waters above and below.[2] This provides further evidence that *tōhû* refers to the functionally nonexistent, which it represents geographically in the cosmic waters and the deserts as is common in the ancient Near Eastern texts. Thus the adjective *tōhû* could be used to refer

- to the precosmic condition (the beginning state in Genesis);
- to the functionless cosmic waters;
- or in the ordered creation to those places on which order had not been imposed, the desert and the cosmic waters above and below—surrounding the ordered cosmos.

The creation account in Genesis 1 can then be seen to begin with no functions rather than with no material. At this point, however, it is important to establish what we mean when we talk of functions. In our culture we even think of functions in material terms. We describe functions in scientific terms and understand function as a result of material properties. So we might describe the sun functionally as a burning ball of gas that projects heat and light, and which, by virtue of its gravitational pull, holds the solar system in orbit around it. In contrast, in the ancient world, function was not the result of material properties, but the result of purpose. The sun looks down on all and is associated with the god of justice. It functions as a marker for time and seasons. When the ancient texts talk about how something functions in an ordered system, the system under discussion is not a cosmic or ecological system. It is a system inhabited by beings. In the ancient Near East the functions were focused on the gods, who had created everything to work for their benefit and under their authority.

In the Old Testament God has no needs and focuses functionality around people. We will see increasing evidence of this understanding as we move through the remainder of Genesis 1. Consequently, functionality cannot exist without people in the picture. In Genesis people are not put in place until day six, but functionality is established with their needs and situation in mind.

This conclusion is further supported by the meaning of the repeated formula "it was good," which I propose refers to "functioning properly." Such a conclusion is not arbitrary but based on the context. Throughout Genesis 1 any number of possible meanings have been proposed for "good." In the history of interpretation it has often been understood in moral/ethical terms or as a reference to the quality of the workmanship. While the Hebrew term could be used in any of those ways, the context indicates a different direction. We can find out what the author means when saying all of these things are "good" by inquiring what it would mean for something *not* to be good. Fortunately the near context offers us just such an opportunity: "It is not good for the man to be alone" (Gen 2:18). This verse has nothing to do with moral perfection or quality of workmanship—it is a comment concerning function. The human condition is not functionally complete without the woman. Thus throughout Genesis 1 the refrain "it was good" expressed the functional readiness of the cosmos for human beings. Readers were assured that all functions were operating well and in accord with God's purposes and direction. Moreover the order and function established and maintained by God renders the cosmos both purposeful and intelligible. So there is reason or motivation for studying the detailed nature of creation, which we now call science, even if the ancient Hebrews didn't take up this particular study.

Based on the above assessment of the beginning state as it is presented in Genesis, we are now in a position to compare it to

what we find in the ancient world. In the ancient Near East the precosmic condition is neither an abstraction ("Chaos") nor a personified adversary. But the primordial sea, which is the principal element of the precreation condition, *is* personified by Nammu in Sumer and by Nun in Egypt, and it can be perceived in an adversarial role.

More specifically, Egyptian texts describe the precosmic condition both in terms of what is lacking as well as by its positive features. That which is absent includes the spatial world (not yet separated), inhabitable places, life/death, procreation, time, conflict and diversity.[3] Positive features include limitless waters and total darkness.[4] Everything is brought into existence by being differentiated. The "after" picture is consequently one of inestimable diversity.[5]

When Sumerian and Akkadian sources document creation activities, we can observe both the situation before and after the activity, as well as what sorts of verbs are used. All of this helps to determine the focus of the creative activity. Many examples exist, but here I will present just one as an illustration, a few lines from the Sumerian text NBC[6] 11108:

> Earth was in darkness, the lower world was [invi]sible;
> The waters did not flow through the opening (in the earth),
> Nothing was produced, on the vast earth the furrow had not been made.
> The high priest of Enlil did not exist,
> The rites of purification were not carried out,
> The h[ierodul]e(?) of heaven was not adorned, she did not proclaim [the praises?]
> Heaven and earth were joined to each other (forming) a unit, they were not [married].[7]

The "before" picture here is composed both of what *is* present—darkness, water and the nondiscrete heaven and earth—and of what is *not:* the absence of productivity, of the gods and of the operation of the cult. Creative activities then alter this landscape. All of this indicates that cosmic creation in the ancient world was not viewed primarily as a process by which matter was brought into being, but as a process by which functions, roles, order, jurisdiction, organization and stability were established. This defines creation in the ancient world and in turn demonstrates that ontology was focused on something's functional status rather than its material status.

In summary, the evidence in this chapter from the Old Testament as well as from the ancient Near East suggests that both defined the pre-creation state in similar terms and as featuring an absence of functions rather than an absence of material. Such information supports the idea that their concept of existence was linked to functionality and that creation was an activity of bringing functionality to a nonfunctional condition rather than bringing material substance to a situation in which matter was absent. The evidence of matter (the waters of the deep in Gen 1:2) in the precreation state then supports this view.

Technical Support

Tsumura, David. *Creation and Destruction.* Winona Lake, Ind.: Eisenbrauns, 2005.

PROPOSITION 5

Days One to Three in Genesis 1 Establish Functions

Day One

Why didn't God simply call light "light"? This was one of the questions that first got me started on the journey that has resulted in the interpretation of Genesis 1 presented in this book. It was not the function orientation found in the ancient Near Eastern literature that changed my way of thinking about Genesis 1—it was the text of Genesis 1. The whole process begins with verse 5, the concluding verse of the account of day one:

> God called the light "day" and the darkness he called "night." And there was evening and there was morning—the first day. (NIV)

First of all it should be observed that light is never treated as a material object in the ancient Near East, despite our modern physics. It is rather thought of as a condition, just as darkness is. So even if light were being created, one would not be able to make the claim that this is a material act. In fact, however, light itself is not the focus of this day's activities. What is the text talking about

when it indicates that God called the light "day"? After all, that is not what light is. The solution is not difficult to find. Some would even consider it transparent and hardly worth even noticing. If something connected with light is named "day" we can deduce that it is not light itself, but the period of light, for that is what "day" *is*. Since "day" is a period of light, and "day" is the name given, we conclude that we are dealing with a rhetorical device called metonymy in which a noun can reasonably be extended to a related concept.[1] In this case then, the author intends for us to understand the word "light" to mean a period of light. Otherwise the verse would not make sense. As a result, "God called the period of light 'day' and the period of darkness he called 'night.'"[2]

With this information from verse 5, we can now proceed backward through the text to verse 4. There we are told that "God separated the light from the darkness." Again we note that this statement does not make any sense if light and/or darkness are viewed as material objects. They cannot logically be separated, because by definition they cannot exist together in any meaningful scientific or material way. The solution of verse 5 works equally well here as the verse takes on its obvious meaning with God separating the period of light from the period of darkness. These are the distinct periods that are then named day and night in verse 5. So far so good.

Now comes the clincher. If "light" refers to a period of light in verse 5 and in verse 4, consistency demands that we extend the same understanding to verse 3, and here is where the "aha!" moment occurs. We are compelled by the demands of verses 4 and 5 to translate verse 3 as "God said, 'Let there be a period of light.'" If we had previously been inclined to treat this as an act of material creation, we can no longer sustain that opinion. For since what is called into existence is a period of light that is distinguished from a period of darkness and that is named "day," we must inevi-

tably consider day one as describing the creation of time. The basis for time is the invariable alteration between periods of light and periods of darkness. This *is* a creative act, but it is creation in a *functional* sense, not a *material* one.

This interpretation solves the long-standing conundrum of why evening is named before morning. There had been darkness in the precreation condition. When God called forth a period of light and distinguished it from this period of darkness, the "time" system that was set up required transitions between these two established periods. Since the period of light had been called forth, the first transition was evening (into the period of darkness) and the second was morning (into the period of light). Thus the great cycle of time was put in place by the Creator. As his first act he mixed time into the features of the cosmos that would serve the needs of the human beings he was going to place in its midst.

A second conundrum that this resolves is the detail that many have found baffling over the ages as they ask, How could there be light on day one when the sun is not created until day four? Two observations can now be made: First, this is less of a problem when we are dealing with "time" in day one rather than specifically with "light." But this does not really resolve the problem without the second observation: If creation is understood in functional terms, the order of events concerns functional issues, not material ones. Time is much more important than the sun—in fact, the sun is not a function, it only *has* functions. It is a mere functionary. More about this in the next chapter.

Day Two

Day two has been problematic at a number of different levels. In antiquity people routinely believed that the sky was solid.[3] As history progressed through the periods of scholasticism, the Renaissance, the Copernican revolution and the Enlightenment, verse 6

became more difficult to handle. For if the Hebrew term is to be taken in its normal contextual sense, it indicates that God made a solid dome to hold up waters above the earth. The choice of saying the Bible was wrong was deemed unacceptable, but the idea of rendering the word in a way that could tolerate modern scientific thinking could not be considered preferable in that it manipulated the text to say something that it had never said. We cannot think that we can interpret the word "expanse/firmament" as simply the sky or the atmosphere if that is not what the author meant by it when he used it and not what the audience would have understood by the word. As we discussed in the first chapter, we cannot force Genesis to speak to some later science.

We may find some escape from the problem, however, as we continue to think about creation as ultimately concerned with the functional rather than the material. If this is not an account of material origins, then Genesis 1 is affirming nothing about the material world. Whether or not there actually are cosmic waters being held back by a solid dome does not matter. That material cosmic geography is simply what was familiar to them and was used to communicate something that is functional in nature. Instead of objectifying this water barrier, we should focus on the important twofold cosmic function it played. Its first role was to create the space in which people could live. The second and more significant function was to serve as a mechanism by which precipitation was controlled—the means by which weather operated. Order in the cosmos (for people especially) depended on the right amount of precipitation. Too little and we starve; too much and we are overwhelmed. The cosmic waters posed a continual threat, and the "firmament" had been created as a means of establishing cosmic order. That we do not retain the cosmic geography of the ancient world that featured a solid barrier holding back waters does not change the fact that our understanding of the Creator includes

his role in setting up and maintaining a weather system. The material terms used in day two reflect accommodation to the way the ancient audience thought about the world. But it doesn't matter what one's material cosmic geography might look like—primitive or sophisticated—the point remains that on the second day, God established the functions that serve as the basis for weather.

Day Three

It is amazing to notice at this point that some interpreters are troubled by their observation that God doesn't make anything on day three. We can imagine their quandary—how can this be included in a creation account if God doesn't make anything on this day? By this point in the book, the reader can see the solution easily. Day three is only a problem if this is an account of material origins. If it is understood as an account of functional origins, there is no need for God to make something. Instead, we ask what function(s) were set up, and to that question we find ready answers.

First of all we note that just as day two separated and differentiated cosmic space, so day three differentiates terrestrial space. The act of separating, a key creation activity from a functional perspective, continues in prominence. Commonly in the ancient literature, these same differentiations can be seen.

Even as some commentators ponder the absence of material creation in day three, others often observe that the day seems to contain two separate acts (water/dry land and vegetation). From a functional perspective, the soil, the water and the principle of seed bearing are all very much related as essential to the production of food. The emergence of dry land from the waters is a common element in Egyptian cosmology, and there it has a definite referent. That is, the emergence of the primeval hillock in cosmology reflects the yearly reality of the fertile soil emerging in the aftermath of the inundation of the Nile. Thus it is clear that the

emergence of dry land is associated with the growing of food.

Day three reflects the wonder of the ancient world at the whole idea that plants grew, dropped seed, and that more of the same plant came from that tiny seed. The cycle of vegetation, the principles of fertilization, the blessing of fecundity—all of these were seen as part of the amazing provision of food so necessary for people to survive.

So on day one God created the basis for time; day two the basis for weather; and day three the basis for food. These three great functions—time, weather and food—are the foundation of life. If we desire to see the greatest work of the Creator, it is not to be found in the materials that he brought together—it is that he brought them together in such a way that they work. Perhaps we can feel the same wonder when we consider how, even given all that we know about the physiology of the eye, that beyond all of our material understanding, through these bundles of tissue we can see. We should never lose the wonder of this. Functions are far more important than materials.

We should not be surprised to find that the three major functions introduced in the first three days of Genesis 1 are also prominent in ancient Near Eastern texts. These texts have already been cited in chapter two. Note again the three lines near the beginning of Papyrus Insinger:

> He created day, month, and year through the commands of the lord of command.
> He created summer and winter through the rising and setting of Sothis.
> He created food before those who are alive, the wonder of the fields.[4]

Likewise in Marduk's creative activity in *Enuma Elish* tablet five:

- Lines 38-40: night and day
- Lines 47-52: creation of the clouds, wind, rain and fog
- Lines 53-58: harnessing of the waters of Tiamat for the purpose of providing the basis of agriculture, piling up of dirt, releasing the Tigris and Euphrates, and digging holes to manage the catchwater[5]

But these functions feature prominently not just in other ancient cosmologies. In Genesis, after the cosmos is ordered, a crisis leads God to return the cosmos to an unordered, nonfunctional state by means of a flood. Here the cosmic waters are let loose from their boundaries and again the earth becomes nonfunctional. What follows is a re-creation text as the land emerges again from the waters and the blessing is reiterated.[6] Of greatest interest, in that context God makes the Creator's promise in Genesis 8:22:

> As long as the earth endures,
> Seedtime and harvest,
> Cold and heat,
> Summer and winter,
> Day and night
> Will never cease.

Here we find the same three major functions in reverse order: food, weather and time, never to cease. The author is well aware that these are the main categories in the operation of this world that God has organized.

In this chapter we have attempted to establish, first, that functional concerns rather than material ones dominate the account. Indeed the only appearance of what might be considered material in these three days is the firmament—the very thing that we are inclined to dismiss as not part of the material cosmos as we un-

derstand it. In contrast the functions of time, weather and food can be clearly seen in the text and recognized as significant in ancient Near Eastern cosmologies. More importantly, we can see that the prominence of these three functions is common to the ancient world. Perspectives on the material universe will vary from era to era and culture to culture. It would be no surprise then that God's creative work should be proclaimed relative to those issues that serve as the universal foundation of how people encounter the cosmos.

We should not worry about the question of "truth" with regard to the Bible's use of Old World science. As we mentioned before, some scientific framework needs to be adopted, and all scientific frameworks are dynamic and subject to change. Adoption of the framework of the target audience is most logical. The Old World science found in the Bible would not be considered "wrong" or "false" as much as it would just offer a perspective from a different vantage point. Even today we can consider it true that the sky is blue, that the sun sets and that the moon shines. But we know that these are scientifically misleading statements. Science, however, simply offers one way of viewing the world, and it does not have a corner on truth. The Old World science in the Bible offers the perspective of the earthbound observer. One could contend that there are some ways in which it is more true that the earth is the center of the cosmos. This does not mean to suggest that there are many truths, but that there are many possible different perspectives that can each offer truthful information. The way any culture describes the makeup of the material cosmos may vary considerably from how another might. A century ago the idea of an expanding universe would have seemed ludicrous, while today the steady-state universe has fallen into disfavor. This is all part of fine-tuning cosmic geography.

God did not give Israel a revised cosmic geography—he re-

vealed his Creator role through the cosmic geography that they had, because the shape of the material world did not matter. His creative work focused on functions, and therefore he communicated that he was the one who set up the functions and who keeps the operations going, regardless of how we envision the material shape. This creation account did not concern the material shape of the cosmos, but rather its functions.

Technical Support

Seely, P. "The Firmament and the Water Above." *Westminster Theological Journal* 54 (1992): 31-46.

———. "The Geographical Meaning of 'Earth' and 'Seas' in Genesis 1:10." *Westminster Theological Journal* 59 (1997): 231-55.

PROPOSITION 6

Days Four to Six in Genesis 1 Install Functionaries

In the account of days four through six we see a shift in the focus. While a functional orientation is still obvious, God is not setting up functions as much as he is installing functionaries. In some cases the functionaries will be involved in carrying out the functions (especially the role of the celestial bodies in marking periods of time), but in most cases the functionaries simply carry out their own functions in the spheres delineated in the first three days (time, cosmic space, terrestrial space). The assignment of functionaries to their tasks and realms is equally an act of creation. Days four through six are literarily parallel to days one through three, as has long been recognized, but the literary structure is secondary (see chapter 13).

Day Four

In the report of this day the functional orientation can be clearly seen. The text offers no indication of the material nature of the celestial bodies, and all that it says of their material placement is that they are in the firmament/expanse. This is, of course, prob-

lematic if one is trying to understand the text scientifically. On the functional side of the equation, we find that they separate day and night (thus the link to day one), that they provide light and that they serve for "signs, seasons, days and years." Finally we are told that their function is to govern the day and night—the closest the text comes to personification.

Again we point out that these are not scientific functions but human-oriented functions. In this regard it should be noted that the fourfold description of functions (signs, seasons, days, years) are pertinent only to humans. The one that may seem not to belong is "seasons"—but here we must not think of seasons like summer and winter. The Hebrew word when it is used elsewhere designates the festival celebrations that are associated with the sowing season, the harvesting season and so on.[1]

Days four to six continue to be driven by the spoken word. This spoken word can easily be understood in connection to the establishment of functions. In the ancient Near East the cosmos is organized by the decrees of deity (reflected in the importance of the Tablet of Destiny). Genesis 1 also emphasizes the spoken decrees of the Creator, and these decrees initiate the functions and give the functionaries their roles. Such spoken decrees are also acts of creation. In ancient Mesopotamia the establishment of control attributes (Sumerian *me*) by decree and the functional aspects of the celestial bodies are combined in texts such as the Great Astrological Treatise:

> When An, Enlil, and Enki, the great gods,
> In their infallible counsel,
> Among the great laws *[me]* of heaven and earth.
> Had established the crescent of the moon,
> Which brought forth day, established the months
> and furnished the omens

drawn from heaven and earth,
This crescent shone in heaven,
And one saw the stars shining in the highest heaven![2]

Similar interests and perspectives are attested throughout the ancient Near East.

Moving through day four, we should pause here a moment to comment on another verb associated with creative activity, *ʿāśâ*. This verb had been used in verse 7 ("God *made* the expanse"), and it is used again in day four, verse 16 ("God *made* two great lights"). It will be used again in day six for both animals (v. 25) and people (v. 26). It also shows up in some of the summary statements (Gen 2:2-4, variably as "made" or "done") and in Exodus 20:11 as a summary statement of the work of the seven days. While some may insist that this verb, at least, expresses a material perspective, we must be careful before jumping to such a conclusion. Any Hebrew lexicon will indicate that this verb covers the whole range, not only of "making" but also of "doing." Even in the summary statements in Genesis 2:2-4 the verb covers all the activities of the seven days, many of which clearly involve only doing, not making. It is true that this verb can be used for a material process, but it does not inherently refer to a material process. In Exodus 20, the discussion of the sabbath uses the same verb across verses 9-11. The phrases show a pattern: "In six days you shall *do* all your work . . . on the seventh . . . you shall not *do* any work . . . for in six days the Lord *did* the heavens and the earth [his work]." What does *doing* his work entail? If creation is his work, and creation is function oriented, then doing his work was accomplished by establishing functions.[3] This coincides with Genesis 2:2, which reports that God finished all the work he had been *doing* and rested from all the work of creating that he had *done*—all using the same verb.

On day four, God began with a decree (v. 14) that identified

the functions of these celestial functionaries. Unlike the situation in the rest of the ancient Near East, these functionaries are nonpersonal entities. The text at least tacitly makes this point by referring to them as "lights" rather than by their names which coincided with the names of deities in the rest of the ancient Near East. Then he did the work so that they would govern as intended (v. 16). And finally he appointed them to their stations (v. 17). The conclusion is the familiar, "It was good" which, as we discussed last chapter, indicates that they are all prepared to function for the human beings that are soon going to be installed in their place.

Day Five

In contrast to day four, where the functionaries were helping to accomplish the functions associated with the sphere which they inhabited, in day five the functionaries simply carry out their own functions in the cosmic space that they inhabit. The text addresses what they do (teem, fly) rather than the role they serve. But in the blessing God also gives them a function: to be fruitful and multiply. God created them capable of doing so, and it is their function to fill their respective realms.

Of particular interest is the specific attention paid to the "great creatures of the sea" in verse 21. Here the author returns to the verb he has not used since verse 1, *bārāʾ*, and which will only be used again in this chapter in verse 27. This use raises the significance of these creatures. In the ancient world the cosmic seas were populated with creatures that operated against the ordered system. Whether antithesis or enemy, they were viewed as threats to order, as they inhabited the region that was itself outside of the ordered system. This is the very reason why the author of Genesis would single them out for comment. Since there is no cosmic warfare or conquest in Genesis as is sometimes part of the ancient Near Eastern picture, the text indicates that these creatures are

simply part of the ordered system, not enemies that had to be defeated and kept in check. In Genesis these creatures are fully under God's control.

Day Six

As with the creatures inhabiting cosmic space in day five, the animals inhabiting terrestrial space in day six are not functionaries that carry out the functions indicated in day three. Instead they carry out their own functions in that space. The text indicates their functions relative to their kind rather than functions relative to other inhabitants. They are viewed in their categories, and they reproduce after their own kind as part of the blessing of God. Their function is to reproduce and to fill the earth—this is what God made them to do. It is the wonder of creation that new generations of the same kinds of creatures are born from parent creatures. This is the same sort of marvel as the system that allows the plants to grow from seed.

One of the more intriguing elements in these verses is the subject and verb in verse 24 ("Let the land produce living creatures"). This is clearly not a scientific mode of expression, and the interpreter should not attempt to read in it scientific concepts. What would it refer to in an ancient Near Eastern context? As already mentioned, ancient Near Eastern texts do not often speak of the creation of animals, and when they do, it is generally a brief comment in passing. The closest statement to this one in Genesis comes from a work entitled The Exploits of Ninurta:

> Let its meadows produce herbs for you. Let its slopes produce honey and wine for you. Let its hillsides grow cedars, cypress, juniper and box for you. Let it make abundant for you ripe fruits, as a garden. Let the mountain supply you richly with divine perfumes. . . . Let the mountains make

> wild animals teem for you. Let the mountain increase the fecundity of quadrupeds for you.[4]

The role of the land or the mountains in producing animals does not give us material information as if this were some sort of spontaneous regeneration or a subtle indication of an evolutionary process. Rather the land and mountain are locations of origin. This is where animal life *comes from,* not what it is *produced from.* It is similar to a child today asking where babies come from. Rather than needing a description of sperm and egg in fertilization and conception, the child only needs to be told that babies come from hospitals or from their mothers.

Humanity

The difference when we get to the creation of people is that even as they function to populate the world (like fish, birds and animals), they also have a function relative to the rest of God's creatures, to subdue and rule. Not only that, but they have a function relative to God as they are in his image. They also have a function relative to each other as they are designated male and female. All of these show the functional orientation with no reference to the material at all. It could be claimed that the material aspect is picked up in Genesis 2, and we will discuss that in a separate section at the end of this chapter.

Among all of the functional elements referred to in Genesis 1:26-30, the image of God is the most important and is the focus of the section. All of the rest of creation functions in relationship to humankind, and humankind serves the rest of creation as God's vice regent. Among the many things that the image of God may signify and imply, one of them, and probably the main one, is that people are delegated a godlike role (function) in the world where he places them.

It has already been mentioned that whereas in the rest of the ancient world creation was set up to serve the gods, a theocentric view, in Genesis, creation is not set up for the benefit of God but for the benefit of humanity—an anthropocentric view. Thus we can say that humanity is the climax of the creation account. Another contrast between Genesis and the rest of the ancient Near East is that in the ancient Near East people are created to serve the gods by supplying their needs. That is, the role of people is to bring all of creation to deity—the focus is from inside creation out to the gods. In Genesis people represent God to the rest of creation. So the focus moves from the divine realm, through people, to the world around them. It would be like the difference between the employees in the plant who serve the company in the manufacturing process (like people in the ancient Near East) and the employees engaged in sales and marketing who represent the company to the outside world (like people in Genesis).

Materials for Humanity

Even though Genesis 1 mentions none of the materials or material processes for human origins, Genesis 2 appears to offer just such a description. Therefore we will step briefly out of our focus on Genesis 1 to address this issue.

Ancient Near Eastern texts contain numerous references to humans being created out of a variety of materials, and we find a great deal of continuity between those reports and the biblical text. This again tells us that Genesis is working within the normal conceptual framework of the ancient Near East rather than forging new scientific trails.

The materials or ingredients that are attested in the ancient Near East are tears of a god (Egypt), blood of a god (Atrahasis), and the most common, clay (both Egypt and Mesopotamia). These ingredients are offered as common to all of humanity since

the ancient Near Eastern texts only deal with the mass of humanity being created rather than an individual or a couple as in Genesis. This is an important difference as Adam and Eve are treated as individuals in chapters 4 and 5. This individual identity, however, does not change the significance of the reference to the materials in Genesis 2. The fact that the ancient Near East uses the same sorts of materials to describe all of humanity indicates that the materials have archetypal significance. Unlike a prototype (which is an original item that serves as a model for later production), an archetype serves as a representative for all others in the class and defines the class. So when the ancient Near Eastern texts speak of people being created from clay or the blood of a slain deity, they are not talking about just one individual, but are addressing the nature of all humanity.

This archetypal understanding applies also to Genesis 2. An individual named Adam is not the only human being made of the dust of the earth, for as Genesis 3:19 indicates, "Dust you are and to dust you will return." This is true of all humans, men and women. It is an archetypal feature that describes us all. It is not a statement of chemical composition nor is it describing a material process by which each and every human being is made. The dust is an archetypal feature and therefore cannot be viewed as a material ingredient. It is indicative of human destiny and mortality, and therefore is a functional comment, not a material one.

The situation is no different with the creation of woman. Being drawn from the side of man has an archetypal significance, not an anatomical one. This is the very aspect that the text draws out when it identifies the significance of the detail: "For this reason a man will leave his father and mother and be united to his wife, and they will become one flesh" (Gen 2:24). This is true of all mankind and all womankind. Womankind is archetypally made from the side of mankind. Again we can see that this is a

functional discussion, not a material one. After chapter five of Genesis, Adam and Eve are never again mentioned in the Old Testament except in the opening genealogy in Chronicles. In the New Testament, the authors regularly treat Adam and Eve in archetypal terms.[5]

Given these observations, we might conclude that Genesis does not have the same level of interest in the material origins of the first humans as we do. It focuses its attention on the archetypal origins of humanity, mankind and womankind. This interest is part of functional origins. Humankind is connected to the ground from which we are drawn. Womankind is connected to mankind from whom she is drawn. In both male and female forms, humankind is connected to God in whose image all are made. As such they have the privilege of procreation, the role of subduing and ruling, and a status in the garden serving sacred space (Gen 2:15). All of these, even the last, were designed to be true of all human beings. Neither the materials nor the roles are descriptive only of the first individuals. This creation account gives people their identity and specifies their connectivity to everything around them.

Summary

In days four to six the functionaries of the cosmos are installed in their appropriate positions and given their appropriate roles. Using the company analogy, they are assigned their offices (cubicles), told to whom they will report, and thus given an idea of their place in the company. Their workday is determined by the clock, and they are expected to be productive. Foremen have been put in place, and the plant is now ready for operation. But before the company is ready to operate, the owner is going to arrive and move into his office.

PROPOSITION 7

Divine Rest Is in a Temple

In the traditional view that Genesis 1 is an account of material origins, day seven is mystifying. It appears to be nothing more than an afterthought with theological concerns about Israelites observing the sabbath—an appendix, a postscript, a tack on.

In contrast, a reader from the ancient world would know immediately what was going on and recognize the role of day seven. Without hesitation the ancient reader would conclude that this is a temple text and that day seven is the most important of the seven days. In a material account day seven would have little role, but in a functional account, as we will see, it is the true climax without which nothing else would make any sense or have any meaning.

How could reactions be so different? The difference is the piece of information that everyone knew in the ancient world and to which most modern readers are totally oblivious: Deity rests in a temple, and only in a temple. This is what temples were built for. We might even say that this is what a temple is—a place for divine rest. Perhaps even more significant, in some texts the construction of a temple is associated with cosmic creation.

What does divine rest entail? Most of us think of rest as disen-

gagement from the cares, worries and tasks of life. What comes to mind is sleeping in or taking an afternoon nap. But in the ancient world rest is what results when a crisis has been resolved or when stability has been achieved, when things have "settled down." Consequently normal routines can be established and enjoyed. For deity this means that the normal operations of the cosmos can be undertaken. This is more a matter of engagement without obstacles rather than disengagement without responsibilities.

Before we proceed, it is important to look at the terminology used by the author. The Hebrew verb *šābat* (Gen 2:2) from which our term "sabbath" is derived has the basic meaning of "ceasing" (cf. Josh 5:12; Job 32:1). Semantically it refers to the completion of certain activity with which one had been occupied. This cessation leads into a new state which is described by another set of words, the verb *nûḥa* and its associated noun, *mĕnûḥâ*. The verb involves entering a position of safety, security or stability and the noun refers to the place where that is found. The verb *šābat* describes a transition into the activity or inactivity of *nûḥa*. We know that when God rests (ceases, *šābat*) on the seventh day in Genesis 2, he also transitions into the condition of stability *(nûḥa)* because that is the terminology used in Exodus 20:11. The only other occurrence of the verb *šābat* with God as the subject is in Exodus 31:17.[1] The most important verses to draw all of this information together are found in Psalm 132:7-8, 13-14.

> Let us go to his dwelling place;
> let us worship at his footstool—
> "arise, O Lord, and come to your resting place,
> you and the ark of your might."
>
> For the Lord has chosen Zion,
> he has desired it for his dwelling:
> "This is my resting place for ever and ever;

here I will sit enthroned, for I have desired it."

Here the "dwelling place" of God translates a term that describes the tabernacle and temple, and this is where his footstool (the ark) is located. This also shows that the text is referring to his dwelling place as his throne room and the place of his rule (because of the footstool). In verse 8 the "footstool" is paralleled by the ark, and the temple ("dwelling place") is paralleled with "resting place" *(mĕnûḥâ).* This demonstrates that the temple is the place where he rests. In verse 13 the text again refers to his dwelling in Zion, thus referring to the temple. Then verse 14 uses "resting place" *(mĕnûḥâ)* again identifying it as the place where he is enthroned. Thus, this Psalm pulls together the ideas of divine rest, temple and enthronement. God's "ceasing" *(šābat)* on the seventh day in Genesis 2:2 leads to his "rest" *(nûḥa),* associated with the seventh day in Exodus 20:11. His "rest" is located in his "resting place" *(mĕnûḥâ)* in Psalm 132, which also identifies it as the temple from which he rules. After creation, God takes up his rest and rules from his residence. This is not new theology for the ancient world—it is what all peoples understood about their gods and their temples.

In the Old Testament the idea that rest involves engagement in the normal activities that can be carried out when stability has been achieved can be seen in the passages where God talks of giving Israel rest in the land:

> But you will cross the Jordan and settle in the land the Lord your God is giving you as an inheritance and he will give you rest from all your enemies around you so that you will live in safety. (Deut 12:10; cf. Josh 21:44; 23:1)

Although security and stability might allow one to relax, more importantly it allows life to resume its normal routines. When Is-

rael's enemies no longer threaten, they can go about their lives: planting and harvesting, buying and selling, raising their families and serving their God.

In the same way, a temple is built in the ancient world so that deity can have a center for his rule. The temple is the residence and palace of the gods. Like the American White House, it is the hub of authority and control. It is where the work of running the country takes place. When a newly elected president looks forward to taking up his residence in the White House, it is not simply so he can kick off his shoes and snooze in the Lincoln bedroom. It is so he can begin the work of running the country. Thus in ancient terms the president "takes up his rest" in the White House. This is far from relaxation. The turmoil and uncertainty of the election is over, and now he can settle down to the important business at hand.

The role of the temple in the ancient world is not primarily a place for people to gather in worship like modern churches. It is a place for the deity—sacred space. It is his home, but more importantly his headquarters—the control room. When the deity rests in the temple it means that he is taking command, that he is mounting to his throne to assume his rightful place and his proper role.

In ancient Near Eastern literature this concept appears early and often. One of the earliest available Sumerian literary pieces is the Temple Hymn of Keš:

> House …… inspiring great awe, called with a mighty name by An; house …… whose fate is grandly determined by the Great Mountain Enlil! House of the Anuna gods possessing great power, which gives wisdom to the people; house, reposeful dwelling of the great gods! House, which was planned together with the plans of heaven and earth, ……

> with the pure divine powers; house which underpins the Land and supports the shrines![2]

In this hymn we can see the idea that the temple is a place of rest ("reposeful dwelling"), that it is central in functional creation ("planned together with the plans of heaven and earth"), and that it is the place from which control is exercised ("underpins the land").

In the famous Babylonian creation epic, *Enuma Elish,* the work of creation by Marduk is followed by the building of a temple for him. Note the following: The gods give Marduk kingship (5.113), and Marduk responds with the statement, "Below the firmament, whose grounding I have made firm, A house I shall build, let it be the abode of my pleasure. Within it I shall establish its holy place, I shall appoint my holy chambers, I shall establish my kingship" (5.121-24). This place is to be the "stopping place" of the gods (5.138). After humankind is created at the beginning of tablet six and the gods are given their responsibilities, the head gods make a declaration: "We will make a shrine, whose name will be a by-word, your chamber that shall be our stopping place, we shall find rest therein" (6.51-52).[3] These sections demonstrate the close relationship between creation (cosmic and human), organization of the cosmos, rest, temple and rule.

God's resting in Genesis 1 does not specifically describe his engagement of the controls, but it describes the opportunity to do so. He can disengage from the set-up tasks and begin regular operations. It would be similar to getting a new computer and spending focused time setting it up (placing the equipment, connecting the wires, installing the software). After all of those tasks were done, you would disengage from that process, mostly so you could now engage in the new tasks of actually using the computer. That is what it had been set up for.[4]

Sometimes people have raised the question, What did God do on the eighth day? In the view being presented here, on the eighth day, and on every day since then, he is in the control room from where he runs the cosmos that he set up. This is the ongoing work of creation. When we thought of Genesis 1 as an account of material origins, creation became an action in the past that is over and done with. God made objects and now the cosmos exists (materially). Viewing Genesis 1 as an account of functional origins offers more opportunity for understanding that God's creative work continues (more about this in chapter 15).

Now that we have been given the interpretive key from the world of the ancient Near East (and verified in other portions of the Bible as well) that divine rest is in a temple, we can begin to unpack the significance of this information for further understanding Genesis 1. What are the implications of identifying Genesis 1 as a "temple text"? What temple is being referred to, and what does that tell us about Genesis 1 and about theology? These are the topics to be addressed in the next several chapters.

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PROPOSITION 8

The Cosmos Is a Temple

In some of the ancient Near Eastern texts, a temple is built as a conclusion to cosmic creation. But typically these are distinct, though related acts. The natural association between them is that the creative acts are expressions of authority, and the temple is the place where authority will continue to be exercised. Beyond this textual and ideological association, we can see that texts link creation and temple building by noting the absence of temples along with the absence of cosmic order as they recount the acts of creation. Thus the absence of a temple was sometimes part of the description of the precosmic condition. This is clearest in the preamble to a prayer that concerns the founding of Eridu:[1]

> No holy house, no house of the gods, had been built in a pure place;
> No reed had come forth, no tree had been created;
> No brick had been laid, no brickmold had been created;
> No house had been built, no city had been created;
> No city had been built, no settlement had been founded;
> Nippur had not been built, Ekur had not been created;
> Uruk had not been built, Eanna had not been created;

The depths had not been built, Eridu had not been created;
No holy house, no house of the gods, no dwelling for them had been created.
All the world was sea,
The spring in the midst of the sea was only a channel,
Then was Eridu built, Esagila was created.[2]

Then Marduk settles the gods into their dwelling places, creates people and animals, and sets up the Tigris and Euphrates.

In a prayer to dedicate the foundation brick of a temple it is obvious that the cosmos and temple were conceived together and thus are virtually simultaneous in their origins.

When Anu, Enlil, and Ea had a (first) idea of heaven and earth,
They found a wise means of providing support of the gods:
They prepared, in the land, a pleasant dwelling,
And the gods were installed (?) in this dwelling:
Their principal temple.[3]

This close connection between cosmic origins and temple building reinforces the idea across the ancient Near East that the temples were considered primordial and that cosmic origins at times were defined in terms of a temple element. It is important to reiterate that I am not suggesting that the Israelites are borrowing from these ancient literatures. Instead the literatures show how people thought in the ancient world, and as we examine Genesis, we can see that Israelites thought in similar ways.

We can draw the connection between temple and cosmos more tightly when we observe that temples in the ancient world were considered symbols of the cosmos. The biblical text as well as the literature of the ancient Near East makes this clear. Ancient Near Eastern evidence comes from a variety of cultures and sources.

First, temples had cosmic descriptions in the ancient world. The earliest example is in the Sumerian Temple Hymn of Kes, one of the oldest pieces of literature known.[4]

> House Keš, platform of the Land, important fierce bull!
> Growing as high as the hills, embracing the heavens,
> Growing as high as E-kur, lifting its head among the mountains!
> Rooted in the Abzu, verdant like the mountains!

The Sumerian text of Gudea's construction of a temple shows the temple serving a cosmic function. Toward the end of Cylinder B, the god Ningirsu, speaking to Gudea, suggests that it is the temple that separates heaven and earth, thus associating it with that most primordial act of creation:

> [Gu]dea, you were building my [house] for me,
> And were having [the offices] performed to perfection [for me],
> You had [my house] shine for me
> Like Utu in [heaven's midst],
> Separating. Like a lofty foothill range,
> Heaven from earth.[5]

Many of the names given to temples in the ancient world also indicate their cosmic role. Among the dozens of possible examples, note especially the temple Esharra ("House of the Cosmos") and Etemenanki ("House of the Foundation Platform Between Heaven and Earth").

In Egypt temples were regarded as having been built where the primeval hillock of land first emerged from the cosmic waters.

> The temple recalled a mythical place, the primeval mound. It stood on the first soil that emerged from the primeval waters, on which the creator god stood to begin his work of creation. Through a long chain of ongoing renewals, the present temple was the direct descendant of the original sanctuary that

> the creator god himself had erected on the primeval mound. An origin myth connecting the structure with creation is associated with each of the larger late temples.[6]

Both Sumerian and Egyptian texts identify the temple as the place from which the sun rises: "Your interior is where the sun rises, endowed with wide-spreading plenty."[7] The Egyptian temples served as models of the cosmos in which the floor represented the earth and the ceiling represented the sky. Columns and wall decorations represented plant life. Jan Assmann, presenting this imagery, concludes that the temple "*was* the world that the omnipresent god filled to its limits."[8] Indeed, the temple is, for all intents and purposes, the cosmos.[9] This interrelationship makes it possible for the temple to be the center from which order in the cosmos is maintained.[10]

In the biblical text the descriptions of the tabernacle and temple contain many transparent connections to the cosmos. This connection was explicitly recognized as early as the second century A.D. in the writings of the Jewish historian Josephus, who says of the tabernacle: "every one of these objects is intended to recall and represent the universe."[11] In the outer courtyard were representations of various aspects of cosmic geography. Most important are the water basin, which 1 Kings 7:23-26 designates "sea," and the bronze pillars, described in 1 Kings 7:15-22, which perhaps represented the pillars of the earth. The horizontal axis in the temple was arranged in the same order as the vertical axis in the cosmos. From the courtyard, which contained the elements outside the organized cosmos (cosmic waters and pillars of the earth), one would move into the organized cosmos as he entered the antechamber. Here were the Menorah, the Table of Bread and the incense altar. In the Pentateuch's descriptions of the tabernacle, the lamp and its olive oil are pro-

vided for "light" (especially Ex 25:6; 35:14; Num 4:9). This word for light is the same word used to describe the celestial bodies in day four (rather than calling them sun and moon). As the Menorah represented the light provided by God, the "Bread of the Presence" (Ex 25:30) represented food provided by God. The altar of incense provided a sweet-smelling cloud across the face of the veil that separated the two chambers. If we transpose from the horizontal axis to the vertical, the veil separated the earthly sphere, with its functions, from the heavenly sphere, where God dwells. This latter was represented in the holy of holies, where the footstool of the throne of God (the ark) was placed. Thus the veil served the same symbolic function as the firmament. To review then, the courtyard represented the cosmic spheres outside of the organized cosmos (sea and pillars). The antechamber held the representations of lights and food. The veil separated the heavens and earth—the place of God's presence from the place of human habitation.[12]

Scholars have also recognized that the temple and tabernacle contain a lot of imagery from the Garden of Eden. They note that gardens commonly adjoined sacred space in the ancient world. Furthermore the imagery of fertile waters flowing from the presence of the deity to bring abundance to the earth is a well-known image.

> The garden of Eden is not viewed by the author of Genesis simply as a piece of Mesopotamian farmland, but as an archetypal sanctuary, that is a place where God dwells and where man should worship him. Many of the features of the garden may also be found in later sanctuaries particularly the tabernacle or Jerusalem temple. These parallels suggest that the garden itself is understood as a sort of sanctuary.[13]

So the waters flowing through the garden in Genesis 2 are

paralleled by the waters flowing from the temple in Ezekiel 47:1-12 (cf. Ps 46:4; Zech 14:8; Rev 22:1-2). This is one of the most common images in the iconography of the ancient world.[14] Consequently we may conclude that the Garden of Eden was sacred space and the temple/tabernacle contained imagery of the garden and the cosmos. All the ideas are interlinked. The temple is a microcosm, and Eden is represented in the antechamber that serves as sacred space adjoining the Presence of God as an archetypal sanctuary.

From the idea that the temple was considered a mini cosmos, it is easy to move to the idea that the cosmos could be viewed as a temple. This is more difficult to document in the ancient world because of the polytheistic nature of their religion. If the whole cosmos were viewed as a single temple, which god would it belong to? Where would temples of the other gods be? Nevertheless it can still be affirmed that creation texts can and do follow the model of temple-building texts, in this way at least likening the cosmos to a temple.[15]

In the Old Testament, polytheism would not interfere with the association of cosmos and temple, and indeed the connection is made. Isaiah 66:1-2 is the clearest text.

> This is what the Lord says:
> "Heaven is my throne,
> and the earth is my footstool.
> Where is the house you will build for me?
> Where will my resting place be?
> Has not my hand made all these things,
> and so they came into being?"
> declares the Lord.

Here we can see the elements of a cosmos-sized temple, a connection between temple and rest, and a connection between cre-

ation and temple. This in itself is sufficient to see that the cosmos can be viewed as a temple. That is precisely what we are proposing as the premise of Genesis 1: that it should be understood as an account of functional origins of the cosmos as a temple. Other passages in the Old Testament that suggest the cosmos be viewed as a temple include 1 Kings 8:27, where in his prayer dedicating the temple, Solomon says, "But will God really dwell on earth? The heavens, even the highest heaven, cannot contain you. How much less this temple that I have built?" In another, Isaiah 6:3, the seraphim chant, "Holy, holy, holy, is the Lord Almighty, the whole earth is full of his glory." The "glory" that the earth is full of is the same as that which comes and takes up residence in the holy of holies in Exodus 40:34.[16]

This chapter has given evidence for the following:

1. In the Bible and in the ancient Near East the temple is viewed as a microcosm.
2. The temple is designed with the imagery of the cosmos.
3. The temple is related to the functions of the cosmos.
4. The creation of the temple is parallel to the creation of the cosmos.
5. In the Bible the cosmos can be viewed as a temple.

When this information is combined with the discoveries of the last chapter—that deity rests in a temple, and that therefore Genesis 1 would be viewed as a temple text—we gain a different perspective on the nature of the Genesis creation account. Genesis 1 can now be seen as a creation account focusing on the cosmos as a temple. It is describing the creation of the cosmic temple with all of its functions and with God dwelling in its midst. This is what makes day seven so significant, because without God taking up his dwelling in its midst, the (cosmic) temple does not exist. The

most central truth to the creation account is that this world is a place for God's presence. Though all of the functions are anthropocentric, meeting the needs of humanity, the cosmic temple is theocentric, with God's presence serving as the defining element of existence. This represents a change that has taken place over the seven days. Prior to day one, God's spirit was active over the nonfunctional cosmos; God was involved but had not yet taken up his residence. The establishment of the functional cosmic temple is effectuated by God taking up his residence on day seven. This gives us a before/after view of God's role.

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PROPOSITION 9

The Seven Days of Genesis 1 Relate to the Cosmic Temple Inauguration

The relationship between cosmos and temple in the Bible and in the ancient world, and particularly the common connection between the two in creation texts suggests that we should think of Genesis 1 in relation to a cosmic temple. This is further confirmed by the divine rest on the seventh day, since divine rest takes place in temples. These ideas should lead us to investigate what other elements of Genesis 1 might be affected by thinking in temple terms.

First in line is the curious fact that the number seven appears so pervasively in temple accounts in the ancient world and in the Bible.[1] Thus the seven days of the Genesis account of origins has a familiarity that can hardly be coincidental and tells us something about the seven-day structure in Genesis 1 that we did not know before and that is not transparent to modern readers. That is, if Genesis 1 is a temple text, the seven days may be understood in relation to some aspect of temple inauguration. What would days of inauguration have to do with creation? What is the connection? If Genesis 1 were an account of material origins, there

would be no connection at all. But as an account of functional origins, creation and temple inauguration fit hand in glove. Given the relationship of the temple and the cosmos, the creation of one is also the creation of the other. The temple is made functional in the inauguration ceremonies, and therefore the temple is created in the inauguration ceremony. So also the cosmic temple would be made functional (created) in an inauguration ceremony.

We must draw an important distinction between the *building* of a temple and the *creation* of a temple. When we look again at the account of Solomon's temple we see that he took seven years to build it (1 Kings 6:37-38). Most of this time was spent on what may be called the "material phase." The stone was quarried and shaped, the precious metals were mined, the furniture built, the cedar acquired and shipped and shaped, the veils sewn, the doors carved, the priestly vestments made and so on. When all of this was done, did the temple exist? Certainly not. Because a temple is not simply an aggregate of fine materials subjected to expert craftsmanship. The temple uses that which is material, but the temple is not material. If God is not in it, it is not a temple. If rituals are not being performed by a serving priesthood, it is not a temple. If those elements are not in place, the temple does not exist in any meaningful way. A person does not exist if only represented by their corpse. It is the inauguration ceremony that transforms a pile of lumber, stone, gold and cloth into a temple.

What happens in a temple inauguration to cause this transformation? We have many inauguration texts from the ancient world, the most detailed being the dedication of the temple of Ningirsu by Gudea about 2100 B.C. One of the first things to note is that at the inauguration the "destiny" and the powers of the temple are assigned (Gudea B.i.3; xiii.6). This is the ultimate function-giving act in the ancient world. Likewise the roles of the functionaries are proclaimed and they are installed.[2]

To guide aright the hand of the one who does righteousness;
To put the wood (neck stock) on the neck of the one who does evil;
To keep the temple true; to keep the temple good;
To give instructions to his city, the sanctuary Girsu;
To set up the throne of decreeing destiny;
To put into the hand the scepter of prolonged days.[3]

In short, by naming the functions and installing the functionaries, and finally by deity entering his resting place, the temple comes into existence—it is created in the inauguration ceremony.

A good biblical example can be seen in the tabernacle account in Exodus 35-39, which concerns the material phase. Exodus 39:32 gives the report on the material phase: "So all the work on the tabernacle, the Tent of Meeting, was completed. The Israelites did everything just as the Lord commanded Moses." In Exodus 39:43, after they have brought everything to Moses, he inspects it, and judges it worthy of blessing. Exodus 40 describes the inauguration—this is the creation of the tabernacle. The chapter reports everything being put in its place, anointed and consecrated (Ex 40:9-16). When all of this is done, the inauguration is completed by the glory of the Lord filling the tabernacle (Ex 40:34). In Exodus we are not told whether all of this was done in one day or over several days, but we do see that it is done in connection with the New Year (Ex 40:2, 17).

Inauguration ceremonies are described in the Old Testament with various levels of detail, including the activities of cultic ritual for consecration and sacrifices that initiate the operation of the sacred space. The Hebrew term is *ḥănukkâ* (see Num 7:10-11, 84, 88; 1 Kings 8:63; 2 Chron 7:5; note also Ps 30). The dedication is the celebration of the people that typically follows, though perhaps at times overlaps with, the inauguration. In the account of the construction of Solomon's Temple the inauguration includes a

seven-day dedication to which is added a seven-day feast/banquet (1 Kings 8:65; 2 Chron 7:9). Solomon's dedicatory prayer proclaims the functions of the temple:

- place for seeking forgiveness (1 Kings 8:30)
- place for oath swearing (1 Kings 8:31-32)
- place for supplication when defeated (1 Kings 8:33-34)
- place for supplication when faced with drought/famine/blight (1 Kings 8:35-40)
- place for the alien to pray (1 Kings 8:41-43)
- place for petition for victory (1 Kings 8:44-45)

In the ancient world the building or restoration of a temple was one of the most notable accomplishments that a ruler could undertake. It was believed to bring the favor of the god, to bring benefits to the city and to bring order to the cosmos. Of course when the temple project was complete there were inauguration activities, consecration, cultic acts, dedication and great public ceremonies. But that was not the end of it. Temple inauguration could also be reenacted on a yearly basis, and pieces of literature like the Sumerian Temple Hymns may have served as the liturgy for such annual celebrations. In Babylon one of the most well-known festivals was the Akitu festival, often celebrated in connection with the New Year, which reinstalled the deity in the temple and reasserted the king's selection by the gods. The Babylonian creation epic, *Enuma Elish,* was read in connection with this festival as it recounts the god Marduk's ascension to the head of the gods and his building of the temple along with his acts of creation.

Long controversy has existed as to whether Israel practiced similar enthronement festivals or New Year celebrations that reaffirmed creation, temple presence and royal election. The Bible

contains no clear evidence of such festivals, but some see hints that they think point that direction. It would be no surprise if they had such a festival and would be theologically and culturally appropriate. Moshe Weinfeld has suggested that Genesis 1 could have served very effectively as the liturgy of such a festival,[4] and the suggestion has much to commend it both textually and culturally, though definitive evidence is lacking. In this way of thinking, Genesis 1 would be a recounting of the functional origins of the cosmos as a temple that was rehearsed yearly to celebrate God's creation and enthronement in the temple.

In this view of Genesis 1, it is evident that the nature of the days takes on a much less significant role than has normally been the case in views that focus on material creation, in that they no longer have any connection to the material age of the earth. These are seven twenty-four-hour days. This has always been the best reading of the Hebrew text. Those who have tried to alleviate the tension for the age of the earth commonly suggested that the days should be understood as long eras (the day-age view). This has never been convincing. The evidence used by the proponents of the day-age view is that the word translated "day" *(yôm)* is often a longer period of time, and they chose that meaning for the word in Genesis 1. The first problem with this approach is that the examples generally used of *yôm* referring to an extended period of time are examples in which the word is being used idiomatically: "in that day." This is a problem because words often take on specialized meaning in idiomatic expressions. So in Hebrew, the phrase "in that day" is simply a way for Hebrew to say "when." The word *yôm* cannot be removed from that expression and still carry the meaning that it has in the expression. Second, if it could be established that the word *yôm* could refer to a longer period of time, the interpreter would still have the responsibility for determining which meaning the author intended in the passage. Word mean-

ings cannot be chosen as if we were in a cafeteria taking whatever we like. Third, the attempt to read long periods of time is clearly a concordist resort,[5] which will be discussed in chapter eleven.

The day-age theory and others that attempt to mitigate the force of the seven days do so because they see no way to reconcile seven twenty-four-hour days of material creation with the evidence from science that the earth and the universe are very old. They seek a solution in trying to stretch the meaning of *yôm,* whereas we propose that once we understand the nature of the creation account, there is no longer any need to stretch *yôm.*

In summary, we have suggested that the seven days are not given as the period of time over which the material cosmos came into existence, but the period of time devoted to the inauguration of the functions of the cosmic temple, and perhaps also its annual reenactment. It is not the material phase of temple construction that represents the creation of the temple; it is the inauguration of the functions and the entrance of the presence of God to take up his rest that creates the temple. Genesis 1 focuses on the creation of the (cosmic) temple, not the material phase of preparation. In the next chapter we will track the implications of the idea that the seven days are not related to the material phase of creation.

PROPOSITION 10

The Seven Days of Genesis 1 Do Not Concern Material Origins

Previous chapters proposed that Genesis 1 is not an account of material origins but an account of functional origins, specifically focusing on the functioning of the cosmos as God's temple. In the last chapter we identified the seven days of creation as literal twenty-four-hour days associated with the inauguration of the cosmic temple—its actual creation, accomplished by proclaiming its functions, installing its functionaries, and, most importantly, becoming the place of God's residence.

One of the most common questions about this view comes from those who are struggling with the worldview shift from material orientation to functional orientation (a difficult jump for all of us). In a last effort to cling to a material perspective, they ask, why can't it be both? It is easy to see the functional orientation of the account, but does the material aspect have to be eliminated altogether?

In answer to this question, if we say that the text includes a material element alongside the functional, this view has to be demonstrated, not just retained because it is the perspective most

familiar to us. The comfort of our traditional worldview is an insufficient basis for such a conclusion. We must be led by the text. A material interest cannot be assumed by default, it must be demonstrated, and we must ask ourselves why we are so interested in seeing the account in material terms. In previous chapters I have proposed the following:

- The nature of the governing verb (*bārāʾ*, "create") is functional.
- The context is functional (it starts with a nonfunctional world in Gen 1:2 and comes back to a functional description of creation after the flood in Gen 8:22).[1]
- The cultural context is functional (ancient Near Eastern literature).
- The theology is functional (cosmic temple).

These provide some significant evidences of the functional perspective.

If we turn our attention to the possible evidences for the material interests of the account we find significant obstacles:

- Of the seven days, three have no statement of creation of any material component (days 1, 3 and 7).
- Day two has a potentially material component (the firmament, *rāqîʿa*), but no one believes there is actually something material there—no solid construction holds back the upper waters. If the account is material as well as functional we then find ourselves with the problem of trying to explain the material creation of something that does not exist. The word *rāqîʿa* had a meaning to Israelites as referring to a very specific object in their cosmic geography. If this were a legitimate material account, then we would be obliged to find something solid up there (not just change the word to mean something else as concordists tend to do). In the functional approach, this compo-

nent of Old World science addresses the function of weather, described in terms that they would understand.

- Days four and six have material components, but the text explicitly deals with them only on the functional level (celestial bodies for signs, seasons, days and years; human beings in God's image, male and female, with the task to subdue and rule).
- This leaves only day five in discussion, where functions are mentioned (e.g., let them swarm) and the verb *bārāʾ* is again used.[2] As a result, it is difficult to sustain a case that the account is interested in material origins if one does not already come with that presupposition.

If the seven days refer to the seven days of cosmic temple inauguration, days that concern origins of functions not material, then the seven days and Genesis 1 as a whole have nothing to contribute to the discussion of the age of the earth. This is not a conclusion designed to accommodate science—it was drawn from an analysis and interpretation of the biblical text of Genesis in its ancient environment. The point is *not* that the biblical text therefore supports an old earth, but simply that there is no biblical position on the age of the earth. If it were to turn out that the earth is young, so be it. But most people who seek to defend a young-earth view do so because they believe that the Bible obligates them to such a defense. I admire the fact that believers are willing to take unpopular positions and investigate all sorts of alternatives in an attempt to defend the reputation of the biblical text. But if the biblical text does not demand a young earth there would be little impetus or evidence to offer such a suggestion.

If there is no biblical information concerning the age of the material cosmos, then, as people who take the Bible seriously, we have nothing to defend on that count and can consider the options

that science has to offer. Some scientific theories may end up being correct and others may be replaced by new thinking. We need not defend the reigning paradigm in science about the age of the earth if we have scientific reservations, but we are under no compulsion to stand against a scientific view of an old earth because of what the Bible teaches.[3]

One of the sad statistics of the last 150 years is that increasing numbers of young people who were raised in the environment of a biblical faith began to pursue education and careers in the sciences and found themselves conflicted as they tried to sort out the claims of science and the claims of the faith they had been taught. It seems to many that they have to make a choice: either believe the Bible and hold to a young earth, or abandon the Bible because of the persuasiveness of the case for an old earth. The good news is that we do not have to make such a choice. The Bible does not call for a young earth. Biblical faith need not be abandoned if one concludes from the scientific evidence that the earth is old.

At this point a very clear statement must be made: *Viewing Genesis 1 as an account of functional origins of the cosmos as temple does* not *in any way suggest or imply that God was uninvolved in material origins—it only contends that Genesis 1 is not that story.* To the author and audience of Genesis, material origins were simply not a priority. To that audience, however, it would likewise have been unthinkable that God was somehow uninvolved in the material origins of creation. Hence there wouldn't have been any need to stress a material creation account with God depicted as centrally involved in material aspects of creation. We can understand this issue of focused interests through any number of analogies from our own world as we indicated in chapter two with the examples of a company and a computer. Many situations in our experience interest us on the functional level while they generate no curiosity at all about the material aspect.

Our affirmation of God's creation of the material cosmos is supported by theological logic as well as by occasional New Testament references. By New Testament times there was already a growing interest in material aspects and so also a greater likelihood that texts would address material questions. Speaking of Christ, Paul affirms, "For by him all things were created: things in heaven and on earth, visible and invisible, whether thrones or powers of rulers or authorities; all things were created by him and for him. He is before all things, and in him all things hold together" (Col 1:16-17). This statement can certainly be understood to include both the material and the functional. Hebrews 1:2 is less explicit as it affirms that the Son is appointed the heir of all things and that through him God made the "universe." Here it must be noted that the word translated "universe" is *aiōnas,* not *kosmos*—thus more aptly referring to the ages of history than to the material world (the same in Heb 11:3).

The theological point is that whatever exists, be it material or functional, God made it. But from there our task as interpreters is to evaluate individual texts to see what aspect of God's creation they discuss.

Finally we need to address the question of what actually happens in the seven days. What would a comparison of the "before" and "after" pictures look like? What would an observer see if able to observe the process of these seven days? On these we can only speculate, but I will try to explore the implications of this view.

The functional view understands the functions to be decreed by God to serve the purposes of humanity, who has been made in his image. The main elements lacking in the "before" picture are therefore humanity in God's image and God's presence in his cosmic temple. Without those two ingredients the cosmos would be considered nonfunctional and therefore nonexistent. The material phase nonetheless could have been under develop-

ment for long eras and could in that case correspond with the descriptions of the prehistoric ages as science has uncovered them for us. There would be no reason to think that the sun had not been shining, plants had not been growing, or animals had not been present.[4] These were like the rehearsals leading up to a performance of a play. The rehearsals are preparatory and necessary, but they are not the play. They find their meaning only when the audience is present. It is then that the play exists, and it is for them that the play exists.

In the "after" picture the cosmos is now not only the handiwork of God (since he was responsible for the material phase all along, whenever it took place), but it also becomes God's residence—the place he has chosen and prepared for his presence to rest. People have been granted the image of God and now serve him as vice regents in the world that has been made for them. Again it is instructive to invoke the analogy of the temple before and after its inauguration. After priests have been installed and God has entered, it is finally a fully functioning temple—it exists only by virtue of those aspects.

What would a college be without students? Without administration and faculty? Without courses? We could talk about the origins of the college when it first opened its doors, enrolled students for the first time, hired faculty, designed courses and offered them and so on. In another sense this process is reenacted year by year as students return (or are newly enrolled), faculty again inhabit their offices, courses are offered. Anyone in academics knows the difference between the empty feel of campus during the summer compared to the energy of a new semester beginning.

Before the college existed, there would have been a material "construction" phase. What a mess! Partially built buildings, construction equipment, torn up ground and so forth. This is all part of a campus taking shape—but it is only preliminary to a college

existing, because a college is more than a campus.

What would the observer have seen in these seven days of Genesis 1? At one level this could simply be dismissed as the wrong question. It continues to focus on the eyewitness account of material acts. But perhaps we can indulge our imagination for a moment as we return to the analogy of the college.

The main thing that happens is that students arrive. But even that would not necessarily mean much if faculty did not begin offering courses. In the light of those two events, however, everything else that was there all along takes on energy and meaning. The course schedule brings order to time. Time had been there all along, but the course schedule gives time a meaning to the college and the students. Even the course schedule had been there a long time (designed months earlier with students registering), but it has no existence until the semester begins. Dorms had existed filled with furniture. But now students inhabit the dorms and the furniture begins to serve its function.

The observer in Genesis 1 would see day by day that everything was ready to do for people what it had been designed to do. It would be like taking a campus tour just before students were ready to arrive to see all the preparations that had been made and how everything had been designed, organized and constructed to serve students. If Genesis 1 served as a liturgy to reenact (annually?) the inauguration of the cosmic temple, we also find a parallel in the college analogy as year by year students arrive and courses begin to bring life and meaning to the campus.

Death

Some might object that if the material phase had been carried out for long ages prior to the seven days of Genesis, there would be a problem about death. Romans 5:12 states unequivocally,

"Therefore, just as sin entered the world through one man, and death through sin, and in this way death came to all men, because all sinned." Interpreters have inferred from this verse that there was no death at any level prior to the Fall, the entrance of sin. But we should notice that the verse does not say that. Paul is talking about how death came to people—why all of humanity is subject to death. Just because death came to *us* because of sin, does not mean that death did not exist at any level prior to the Fall.

Not only does the verse not make a claim for death in general, everything we know logically repudiates the absence of death at any level prior to the Fall. Day three describes the process by which plants grow. The cycle of sprouting leaves, flowers, fruit and seeds is one that involves death at every stage. This system only functions with death as part of it. Likewise with animals: we need not even broach the topic of predatory meat eaters to see that the food chain involves death. A caterpillar eating a leaf brings death. A bird eating the caterpillar brings death. Fish eating insects brings death. If animals and insects did not die, they would overwhelm their environment and the ecology would suffer. Furthermore, if we move to the cellular level death is inevitable. Human skin has an outer layer of epidermis—dead cells—and we know that Adam had skin (Gen 2:23).

All of this indicates clearly that death did exist in the pre-Fall world—even though humans were not subject to it. But there is more. Human resistance to death was not the result of immortal bodies. The text indicates that we are formed from the dust of the earth, a statement of our mortality (for dust we are and to dust we shall return, cf. Gen 3:19). No, the reason we were not subject to death was because an antidote had been provided to our natural mortality through the mechanism of the tree of life in the garden. When God specified the punishment for disobedience, he said

that when they ate, they would be doomed to death (the meaning of the Hebrew phrase in Gen 2:17). That punishment was carried out by banishing them from the garden and blocking access to the tree of life (Gen 3:23-24). Without access to the tree of life, humans were doomed to the natural mortality of their bodies and were therefore doomed to die. And so it was that death came through sin.

PROPOSITION 11

"Functional Cosmic Temple" Offers Face-Value Exegesis

As discussed in chapter three when we explored the word *bārāʾ*, the word *literal* can have different meanings to different people. Mostly people use the word to express that they want to understand what the text "really says." The question is, what criteria make that determination? Certainly the meanings of words and the grammatical and syntactical framework are of importance. But grammar, words and sentences are all just the tools of communication. Usually our search to find out what a text "really says" must focus on the intended communication of the author and the ability of the audience to receive that same intended message. Words, grammar and syntax will be used adequately by a competent writer or speaker to achieve the desired act of communication. The same words can be used in a straightforward manner, or be used in a symbolic, metaphorical, sarcastic or allegorical way to achieve a variety of results.

As readers, we want to know how the author desired his communication to be understood. I referred to this in chapter three as the "face value" of the text. If a communication is intended to be

metaphorical, the interpreter interested in the face value will want to recognize it as metaphor. If the author intends to give a history, the interpreter must be committed to reading it that way. In other words, interpreters have to give the communicator the benefit of the doubt and treat his communication with integrity.

Interpreters have come to Genesis 1 with a variety of approaches. Increasingly those who are uncomfortable with the scientific implications of the traditional interpretation have promoted a variety of ways to read the text so as to negate those implications. For example, some have suggested that the text is only theological—indicating that God is the Creator and the sabbath is important. Others have indicated that the text has a literary shape that makes it poetic and should not be taken as any sort of scientific record. While it is easy to affirm that important theology is the foundation of the account and that it has an easily recognizable literary shaping, one can still ask, is that all there is? Those who have championed the "literal" interpretation of the text have objected that these approaches are reductionistic attempts to bypass difficult scientific implications and claim that by pursuing them the text is so compromised that it is, in effect, rejected.

In the cosmic-temple interpretation offered in this book—which sees Genesis 1 as an account of functional origins—we find a different sort of resolution to the problems faced by the interpreter. I believe that if we are going to interpret the text according to its face value, we need to read it as the ancient author would have intended and as the ancient audience would have heard it. Though the literary form of expression and the theological foundation are undeniable, I believe that study of the ancient world indicates that far more is going on here than that.

Scholars in the past who have compared Genesis 1 to other ancient literature have sometimes suggested that the biblical text

intends to be polemical—to offer a view in opposition to that of the rest of the ancient world. Again, it cannot be denied that Genesis offers a very different perspective than other creation texts in a number of ways. Here there is only one God, and there is no conflict to overcome. Since Genesis allows only one God, the account does not explain other gods being brought into existence and thus it breaks the close association between the components of the cosmos and the gods. All of this is true, and could be viewed as polemic. But it must also be noticed that the author of Genesis 1 is not explicitly arguing with the other views—he is simply offering his own view. His opposition to other ancient views is tacit.

The view presented in this book has emphasized the similarities between the ways the Israelites thought and the ideas reflected in the ancient world, rather than the differences (as emphasized in the polemical interpretation). While we can never achieve deep levels of understanding of how an ancient Israelite thought, we can at least see some of the ways they thought differently than we do. In this small accomplishment we can identify ways that we may have been inclined to innocently read our own thought patterns into texts whose authors did not share those thought patterns. If the Israelites, along with the rest of the ancient Near East, thought of existence and therefore creation in functional terms, and they saw a close relationship between cosmos and temple, then those are part of the face value of the text and we must include them in our interpretation.

In contrast, a concordist approach intentionally attempts to read an ancient text in modern terms. Concordist interpretations attempt to read details of physics, biology, geology and so on into the biblical text. This is a repudiation of reading the text at face value. Such interpretation does not represent in any way what the biblical author would have intended or what the audi-

ence would have understood. Instead it gives modern meaning to ancient words.

The rationale for this sort of reading involves several factors. First, these interpreters identify the ultimate author of Scripture as God. Therefore they feel justified in suggesting that reading the text scientifically yields God's intention even if the human author knew nothing of it. How do they determine the divine author's meaning if not through the human author? Their answer often derives from the idea that "all truth is God's truth." Therefore if we believe that physicists, biologists, geologists and other scientists have a bead on truth, that truth can be attributed to the divine author. Thus they might conclude that if the big bang really happened as a mechanism for the origins of the universe, it must be included in the biblical account of the origins of the universe. So concordists will attempt to determine where the big bang fits into the biblical record and what words could be understood to express it (even if in rather mystical or subtle ways). In this way the concordist is looking at modern science and trying to find a place for it in the biblical account with the idea that science has determined what really happened, so the Bible must reflect that. Other concordists rewrite science so that the correlation with the Bible can be made comfortably. In this way, concordism can be seen to be very different than wrestling with the face-value meaning of the text.

The problem with concordist approaches is that while they take the text seriously, they give no respect to the human author. The combination of "scientific truth" and "divine intention" is fragile, volatile and methodologically questionable. We are fully aware that what we call "scientific truth" one day may be different the next day. Divine intention must not be held hostage to the ebb and flow of scientific theory. Scientific theory cannot serve as the basis for determining divine intention.

God has communicated through human authors and through their intentions. The human author's communication is inspired and carries authority. It cannot be cast aside abruptly for modern thinking. The human author gives us access to the divine message. It has always been so. If additional divine meaning is intended, we must seek out another inspired voice to give us that additional divine meaning, and such an inspired voice can only be found in the Bible's authors. Scientific theory does not qualify as such an inspired voice.

We have neither the right nor the need to force the text to speak beyond its ken. This is not only important on a theoretical level, it is observable throughout the text. As mentioned in chapter one, there is not a single instance in the Old Testament of God giving scientific information that transcended the understanding of the Israelite audience. If he is consistently communicating to them in terms of their world and understanding, then why should we expect to find modern science woven between the lines? People who value the Bible do not need to make it "speak science" to salvage its truth claims or credibility.

The most respectful reading we can give to the text, the reading most faithful to the face value of the text—and the most "literal" understanding, if you will—is the one that comes from their world not ours. Consequently the strategy we have adopted for reading the text as ancient literature offers the most hope for treating the text with integrity. We are not trying to bypass what the text is saying, nor to read between the lines to draw a different meaning from it.

Concordist approaches, day-age readings, literary or theological interpretations all struggle with the same basic problem. They are still working with the premise that Genesis 1 is an account of material origins for an audience that has a material ontology. Modern inability to think in any other way has resulted in re-

course to all of this variety of attempts to make the text tolerable in our scientific naturalism and materialism.

Our face-value reading in contrast, does the following:

1. recognizes Genesis 1 for the ancient document that it is;
2. finds no reason to impose a material ontology on the text;
3. finds no reason to require the finding of scientific information between the lines;
4. avoids reducing Genesis 1 to merely literary or theological expressions;
5. poses no conflict with scientific thinking to the extent that it recognizes that the text does not offer scientific explanations.

PROPOSITION 12

Other Theories of Genesis 1 Either Go Too Far or Not Far Enough

Previous chapters have made passing reference on a number of occasions to other theories concerning Genesis 1. In this chapter each one will be briefly evaluated to identify the points of comparison with the theory proposed here.

Young Earth Creationism (YEC)

The YEC position believes that the days in Genesis 1 are consecutive twenty-four-hour days during which the entire material cosmos was brought into existence. Proponents of this view therefore believe that everything must be recent (the origins of the universe, the earth and humankind). Some variation exists as to whether the cosmic origins go back 10,000-20,000 years as some would allow, or only go back about 6,000 years from the present (as promoted at the Creation Museum in Petersburg, Kentucky). The challenge they face is to account for all of the evidences of great age of the earth and of the universe. They do this by offering alternative theories allegedly based on science. For example, they typically account for the visibility of the stars by suggesting

that light was created in transit. Most propose that the geological strata were laid down by the flood, and some contend that continental drift has all taken place since the flood. They commonly use the idea that God created with the appearance of age to account for some of what is observed.

Though each of their proposals could be discussed individually,[1] it is more important here to address the foundation of the approach. I would contend that this view goes too far in its understanding of what we need to do to defend the biblical text. It goes too far in its belief that the Bible must be read scientifically, and it goes too far in its attempts to provide an adequate alternative science. It uses a particular interpretation of the biblical text to provide the basis for scientific proposals about rock strata, an expanding universe and so forth. The YEC position begins with the assumption that Genesis 1 is an account of material origins and that to "create" something means to give it material shape. It would never occur to them that there are other alternatives and that in making this assumption they are departing from a face-value reading of the biblical text. In fact they pride themselves on reading the text literally and flash this as a badge of honor as they critique other views. Reading the text scientifically imposes modern thinking on an ancient text, an anachronism that by its very nature cannot possibly represent the ideas of the inspired human author.

I would contend that while their reading of the word "day" *(yôm)* as a twenty-four-hour day is accurate, they have been too narrow in their reading of words such as "create" *(bārāʾ)* and "made" *(ʿāśâ)*. It is not that they have considered the merits of a nonmaterial understanding of these words and rejected it. They are not even aware that this is a possibility and have therefore never considered it. In the functional view that has been presented in this book, the text can be taken at face value without necessitating all of the scientific gymnastics of YEC. Their scientific scenarios

have proven extremely difficult for most scientifically trained people to accept. When the latter find YEC science untenable, they have too often concluded that the Bible must be rejected.

Old Earth Creationism (OEC)

One of the more prominent voices supporting the OEC position is found in the writings of Hugh Ross and his associates (Reasons to Believe). Ross believes that the Bible is not characterized by the limited scientific knowledge of its time and place.[2] So, for example, he suggests that in Genesis 1:3-5 the presence of light is evident through the "dense shroud of interplanetary dust and debris" that prevents the heavenly bodies from being seen. He sees day two as the beginning of the water cycle and "the formation of the troposphere, the atmospheric layer just above the ocean where clouds form and humidity resides, as distinct from the stratosphere, mesosphere, and ionosphere lying above." He looks to tectonics and volcanism to explain day three.[3] Ross believes, along with many others, that the old age of the earth and the universe can be easily accommodated to Genesis 1 once we realize that the days can represent long eras.[4]

One may not be inclined to dispute the science that underlies this approach, and Ross's desire to validate the text of Genesis, as in the YEC camp, is commendable. The question is, Is that what the author of Genesis is trying to say? We might be able to make the claim that there is some sort of compatibility between the scientific sequence and the textual sequence, but that is not proof that the text should be interpreted in scientific ways with advanced scientific content (latent in the text). One could do the same thing with Babylonian or Egyptian creation accounts. It is proof of our ingenuity rather than evidence of some ingrained underlying science.

If those from this camp were to consider the merits of the functional view proposed in this book, they would not have to give up

all the scientific correlations proposed, but such an approach would no longer be of interest or carry any urgency, necessity or significance. They would only have to admit that the text makes no such claims and requires no such validation. Taking the text seriously is not expressed by correlating it with modern science; it is expressed by understanding it in its ancient context. If the text is interested in functional origins, it need not be evaluated against material claims and material knowledge. Its validation would come in answer to the question, Is this really how God set up the world to run, and is he the one who set it up? This stands in stark contrast to the validation that asks, Is this a scientifically accurate account of how the material universe came into being?

Framework Hypothesis

The framework hypothesis represents a literary/theological approach to Genesis 1. On the literary side it recognizes that the account of the seven days is highly structured, with the first three days defining realms of habitation and the second set of three filling these realms with inhabitants. Parallels exist between days one and four, days two and five, and days three and six. From this literary structuring conclusions are drawn about the account.

> We may simply conclude from this high level of patterning that the order of events and even lengths of time are not part of the author's focus. . . . In this understanding, the six workdays are a literary device to display the creation week as a careful and artful effort.[5]

Discussion then typically follows that draws out the theologically significant points of the passage on which all agree: God as Creator of all, the sovereignty of God, the power of the spoken word, the "goodness" of creation, the image of God in people and the significance of sabbath.[6]

The question to be posed to this group is whether they have gone far enough with the text. Is there more to it than theological affirmations expressed in a literary way? While no objection can be raised against the literary structure and no disagreement with the theological points, one has to ask whether Israelites thought of this text in only literary/theological terms. This view risks reductionism and oversimplification, and should be only a last resort.

For those who have in the past adopted the framework hypothesis, the theory proposed in this book does not require them to discard that interpretation, but only to accept the functional perspective alongside it. This does not require replacement, but would add value.

Other Theories

Throughout much of the twentieth century, a popular view was known as the "gap theory" or the "ruin-reconstruction" theory, promoted in the Scofield Reference Bible. It suggested that Genesis 1:1 recounted a prior creation ruled by an unfallen Satan. It had the advantage that it allowed for the universe and earth to be old, but the days of Genesis to be recent. Anything that did not fit into a recent earth (e.g., geological strata, dinosaurs) could just be shoved back into the first creation. In this view, at Satan's fall that first creation was destroyed—this is the gap between Genesis 1:1 and Genesis 1:2. The second verse was translated, "The earth became formless and void." Response to this theory demonstrated that the Hebrew text could not be read in that way and the theory has been gradually fading from the scene.

Others have suggested that the accounts in Genesis 1:1—2:3 and Genesis 2:4-25 are separated by many millions of years. In this view the old earth can be supported along with the mass appearance of hominid species in the first account. The second account is then associated with something like the Neolithic revolu-

tion in relatively recent times and associated with the granting of the image of God on two individuals that leads to Homo sapiens.[7] The problems with this position are largely theological. Were the previous hominid species in the image of God? Were they subject to death? How do they relate to the Fall? Are they biologically mixed into the current human race? These are questions that need to be answered by those promoting this position.

In conclusion it should be reemphasized that all of these positions have in common that they are struggling to reconcile the scientific findings about the material cosmos with the biblical record without compromising either. They all assume that the biblical account needs to be treated as an account of material origins, and therefore that the "different" scientific account of material origins poses a threat to the credibility of the biblical account that has to be resolved. This book has proposed, instead, that Genesis 1 was never intended to offer an account of material origins and that the original author and audience did not view it that way. In fact, the material cosmos was of little significance to them when it came to questions of origins. In this view, science cannot offer an unbiblical view of material origins, because there is no biblical view of material origins aside from the very general idea that whatever happened, whenever it happened, and however it happened, God did it.

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PROPOSITION 13

The Difference Between Origin Accounts in Science and Scripture Is Metaphysical in Nature

We have now completed the presentation of the view that Genesis 1 presents an account of functional origins and will begin to integrate this view into the broader issues of science and society. The following chapters will explore the implications of this view in relation to evolution and Intelligent Design, as well as a consideration of some of the issues of policy in public education. As a prologue to that discussion, this chapter will draw some distinctions at the metaphysical level that will seek to probe some of the philosophical questions and reality outside of the material realm.

Many people who feel caught in a perceived origins conflict between the Bible and science subconsciously think of the origins question as a pie. Various aspects of origins are evaluated to decide whether God did it or a naturalistic process could be identified. The "origins pie" is then sliced up with each piece either going to "supernatural" or "natural" causation. The inevitable result as science progresses is that God's portion gets smaller and smaller, and overall, God becomes no longer useful or necessary.

Chapter one already discussed the issue that the distinction between "natural" and "supernatural" is not readily evident in the Old Testament and its world. One could go through passages such as Psalm 104 or Job 38 and see that the things attributed to God can also be explained in "natural" terms. The ancients were not inclined to distinguish between primary and secondary causation, and everything was attributed to deity. We can see, then, that the pie model is characterized by a distinction that is essentially unbiblical.[1]

If we want to adopt a more biblical view, we have to switch desserts! We need to think in terms of a layer cake.[2] In this view the realm of scientific investigation would be represented in the lower layer. This layer represents the whole realm of materialistic or naturalistic causation or processes. It is subject to scientific observation, investigation and explanation. Discovery in this layer does not subtract from God or his works. This is the layer in which science has chosen to operate and where it is most useful.

In contrast, the top layer represents the work of God. It covers the entire bottom layer because everything that science discovers is another step in understanding how God has worked or continues to work through the material world and its naturalistic processes. In this way, the bottom layer might be identified as the layer of secondary natural causation while the top layer is identified as ultimate divine causation.[3]

Science, by current definition, cannot explore the top layer. By definition it concerns itself with only that which is physical and material.[4] By restricting itself to those things that are demonstrable, and more importantly, those things that are falsifiable, science is removed from the realm of divine activity. Though scientists have their beliefs, those must be seen as distinct from their scientific work. It is unconvincing for a scientist to claim that he or she finds no empirical evidence of God. Science as currently

defined and practiced is ill-equipped to find evidence of God.[5] The bottom layer may continue to have areas for which science cannot offer explanation, but that is only evidence of science's limitations, not evidence of God. A believer's faith holds that there is a top layer, even though science cannot explore it.

That top layer addresses ultimate causation, but it also addresses purpose, which in the end, is arguably more important. God is always the ultimate cause—that is our belief whatever secondary causes and processes can be identified through scientific investigation. But we also believe that God works with a purpose. Neither ultimate cause nor purpose can be proven or falsified by empirical science. Empirical science is not designed to be able to *define* or *detect* a purpose, though it may theoretically be able to deduce rationally that purpose is logically the best explanation.[6] As the result of an empirical discipline, biological evolution can acknowledge no purpose, but likewise it cannot contend that there is no purpose outside of a metaphysical conclusion that there is no God. It must remain neutral on that count since either contention requires moving to the top layer, which would mean leaving the realm of scientific inquiry. Science cannot offer access to God and can neither establish his existence beyond reasonable doubt nor falsify his existence. Therefore science can only deal with causation sequences—it cannot establish beyond reasonable doubt that a purpose governs or does not govern that which they observe.

The term for the technical philosophical interest in purpose is *teleology*. Teleology is the study of the goal of some intentional process that is usually the byproduct of purpose. That is, God works intentionally with his own purposes in mind to achieve a final goal. This concerns the realm of theology, or more broadly, metaphysics, and is not the stuff of empirical science.

The scientific observations and theories that compose the lower layer of the cake do not in and of themselves carry teleological

conclusions (though they might be consistent with such conclusions). They cannot do so, because the presence of a purpose cannot be falsified. So some scientists might believe that the lower layer is all there is. For them the naturalistic causes are all that can be affirmed, and they do not believe in a purpose, for their layer, their worldview, their metaphysics, have no room for God. This view is exclusively materialistic and could be described as *dysteleological* (no discernible purpose).[7] This is not a scientifically drawn conclusion, but one that is drawn from the limitations of science. It would be like a fish claiming that there was only water, no air (despite the fact that they could not breathe if the water were not oxygenated by the air).

In contrast, there are many scientists who believe that there is indeed a top layer—that there is a God involved in ultimate causes and carrying out his purposes through the naturalistic operations of the cosmos. This belief does not change their approach to their scientific study—it does not affect their perception of the bottom layer nor does it affect their methods for studying the bottom layer. But their metaphysical position would be described as teleological. Nothing is random or accidental. Many of the great minds in the history of science were in this category (e.g., Galileo, Newton).

I have proposed here that Genesis is *not* metaphysically neutral—it mandates an affirmation of teleology (purpose), even as it leaves open the descriptive mechanism for material origins. Affirming purpose in one's belief about origins assures a proper role for God regardless of what descriptive mechanism one identifies for material origins. Since Genesis is thoroughly teleological, God's purpose and activity are not only most important in that account, they are almost the only object of interest. Genesis is a top-layer account—it is not interested in communicating the mechanisms (though it is important that they were decreed by the word of God). Whatever empiri-

cal science has to say about secondary causation offers only a bottom-layer account and therefore can hardly contradict the Bible's statements about ultimate causation. Whatever mechanisms can be demonstrated for the material phase, theological convictions insist that they comprise God's purposeful activity. It is not a scientific view of mechanism (naturalism) that is contrary to biblical thinking, but exclusive materialism that denies biblical teaching. Naturalism is no threat—but materialism and its determined dysteleology is.[8]

The functional orientation proposed for Genesis 1 in this book is fully in line with a penetrating teleology. God's purposes and intentions are most clearly seen in the way the cosmos runs rather than in its material structure or in the way that its material structures were formed (although the material structures can point to a designer). Instead of offering a statement of causes, Genesis 1 is offering a statement of how everything will work according to God's purposes. In that sense the text looks to the future (how this cosmos will function for human beings with God at its center) rather than to the past (how God brought material into being).[9] Purpose entails some level of causation (though it does not specify the level) and affirms sovereign control of the causation process.

The principle factor that differentiates a biblical view of origins from a modern scientific view of origins is that the biblical view is characterized by a pervasive teleology: God is the one responsible for creation in every respect. He has a purpose and a goal as he creates with intentionality. The mechanisms that he used to bring the cosmos into material existence are of little consequence as long as they are seen as the tools in his hands. Teleology is evident in and supported by the functional orientation.

Technical Support

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PROPOSITION 14

God's Roles as Creator and Sustainer Are Less Different Than We Have Thought

Now that we have developed a modified view of the creation account in Genesis and a corresponding modified view of what constitutes creative activity, we can explore how these give us a renewed vision of God as Creator.

Two extremes need to be avoided as we seek to understand God as Creator:

1. that his work as Creator is simply a finished act of the past (potential for deism), or
2. that his work as Creator is in an eternally repeating present (potential for micromanagement)

The first extreme is most common in popular Christianity today. In this view Genesis is an account of material origins and the creation of the physical universe took place in the past (whether the distant past or the more recent past). Consequently God's role as Creator was focused on a particular time and a particular task, and has been completed. This view can easily result in a practical deism in that it generally assumes that in creation God set up natural laws and physical structures subject to those laws so that the

universe now virtually "runs by itself." This view potentially distances God from the day-to-day operations of the cosmos.

One form of this practical deism is particularly noticeable in some permutations of "theistic evolution" in which God is seen as responsible for "jump-starting" the evolutionary process and then letting it unwind through the eons. Alternatively God is sometimes viewed as involved more regularly at critical junctures to accomplish major jumps in evolution. The problem is that these approaches not only potentially remove God from ongoing operations in nature, but they even write God out of most of the origins story. The deism view gives too much to the ongoing functions of creation as well as rendering them too independent from God. The interventionist view treats the functionality of natural processes too lightly, as being inadequate to accomplish God's purposes. Potentially, the processes left to run on their own might very well fail to achieve God's purposes, but this possibility reveals the all-or-nothing assumption behind these two views—that what happens in natural history is either all due to natural processes running on their own *or* is due to direct divine intervention in the natural operations. That God might be working alongside or through physical and biological processes in a way that science cannot detect is one possibility that this either-or assumption ignores.[1]

But in all fairness the young-earth creationists are not immune from distancing God from the operations of nature. Even though they view God as totally responsible for origins, his Creator work is considered finished after those first six days. The "natural" world has been put in place, and it runs (on its own? vaguely sustained?) by those principles God put in place. For those who see it that way (admittedly not all in this camp), creation is over, and a practical deism looms over the ongoing operations of the world.

A second extreme, rather than adopting the sharp discontinu-

ity between creation and operations as just described, considers there to be such continuity that it virtually eliminates beginning and end. Here creation is a constantly recurring process,[2] and God never ceases creating. One immediate objection to this view is found in the idea of teleology that was presented in the last chapter. For there to be a goal and purpose (telos), there must be a beginning and an end.[3] But beyond this important distinction, we need to explore the nature of continuity and discontinuity between the creative acts in Genesis 1 and what might be considered continuing creative activity.

The Bible to some extent offers the idea that creation is ongoing and dynamic. So theologian Jürgen Moltmann believes that God's creative work is not just the static work of the past, but that it is dynamic as it continues in the present and into the future.[4] This suggestion merits consideration, but key to the discussion is the extent to which what happens after the beginning could still be called creation, or if it is something else (e.g., "sustaining").[5] The answer to this question may be determined by how we understand the nature of creative activity in the Bible, and particularly, the view of origins underlying Genesis 1.

In the position of this book, the idea that Genesis 1 deals with functional origins opens up a new possibility for seeing both continuity and a dynamic aspect in God's work as Creator, because he continues to sustain the functions moment by moment (for example, see Neh 9:6; Job 9:4-10; Job 38; Ps 104; Ps 148; Amos 4:13; Mt 6:26-30; Acts 17:24-28; Col 1:16-17; Heb 1:3).[6] Creation language is used more in the Bible for God's sustaining work (i.e., his ongoing work as Creator) than it is for his originating work.[7] As we reduce the distinction between creating and sustaining, we take a departure from Moltmann, whose idea of dynamic creation considers all of covenant, redemption and eschatology as creative acts.[8]

I contend that there is a line between the seven days of Genesis 1 and the rest of history, making Genesis 1 a distinct beginning that is located in the past. If we see this as an account of functional origins, the line between is dotted rather than solid, as the narrative of Genesis 1 puts God in place to perpetuate the functions after they are established in the six days. In this way, day seven, God taking up his rest in the center of operations of the cosmos, positions him to run it. This continuing activity is not the *same* as the activity of the six days, but it is the reason why the six days took place. John Stek summarizes it well as he states that "in the speech of the Old Testament authors, whatever exists *now* and whatever *will come into existence* in the creaturely realm has been or will have been 'created' by God. He is not only the Creator of the original state of affairs but of all present and future realities."[9] As noted several times already, this does not result in a view of God as a micromanager, but it insists that he cannot be removed from the ongoing operations. The paradox of intimate involvement without micromanagement defies definition.

Returning to the college analogy that we introduced earlier, the origin of the college was intentional, with purpose in mind—all of the courses were designed, faculty and staff hired, students enrolled so that the college could exist. Those functions must continue to be sustained for the college to remain in existence, and it is the ongoing work to keep the college running that constitutes its dynamic aspect. Once the college (or cosmos) is brought into existence, that functional existence must be continually sustained. The physical campus must be *maintained* (cleaned, kept up, repaired, etc.), but the functional college must be *sustained* (courses offered again and again, new students enrolled, new employees hired, etc.). *Maintaining* relates to the material and the physical existence. *Sustaining* relates to the functional and operational. Consequently, when we take the functional approach to

origins and the theological position of God's continual sustaining work, both originating and sustaining can be seen as variations of the work of the Creator, even though they do not entirely merge together. Genesis 1 is in the past, but the continuing activities of the Creator in the future and present are very much a continuation of that past work. In contrast to the first extreme, creation is not over and done with. In contrast to the second extreme, origins is rightfully distinguished from God's sustaining work, but both could be considered in the larger category of creation.

As we are going to discuss in the remainder of the book, it is precisely this pervasive role of God as Creator in all aspects of originating and sustaining that serves as the main dispute that Christians have with a purely materialistic view of origins. This materialistic view is often interwoven with biological evolution and at times is referred to as "evolutionism."[10] The existence of biological processes is not a major concern, whereas the denial of any role to God in relation to those biological processes—whatever they are—are theologically and biblically unacceptable. But that discussion is for another chapter.

The relationship between creation and other aspects of God's work such as covenant, redemption and eschatology is that each of these also involves God in the process of bringing order to disorder. He also did this for the cosmos in his creating work and continues to do it in sustaining the cosmos. But these—covenant-making, redemption and so on—are more related to his role in progressive revelation than to his Creator role.

In conclusion I suggest that God initiated the functions in Genesis 1 so that they are seen to originate in him. As a result of taking up his residence in the cosmic temple, he sustains the functions moment by moment, as the very existence of the cosmos depends on him entirely. Both initiating and sustaining are the acts of the Creator God. We recognize his role of Creator God by

our observance of the sabbath, in which we consciously take our hands off the controls of our lives and recognize that he is in charge. His place in the temple and his role as Creator may have been ritually reenacted annually in temple liturgies. It would be a commendable sacred holiday for the church to reinstate. For even though God does not reside in geographical sacred space any longer, he is still in his cosmic temple, and he now resides in the temple that is his church (1 Cor 3:16; 6:19).

Technical Support

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PROPOSITION 15

Current Debate About Intelligent Design Ultimately Concerns Purpose

Having now covered the biblical and theological issues, we are ready to move into the discussion of contemporary issues. Specifically the next several chapters explore the impact of this view of Genesis 1 on our understanding of evolution, Intelligent Design and public education.

As we begin, it is most important to keep in mind that the view presented in the preceding chapters is what philosophers would label as "teleological"—by which they mean that the view involves God working with intention, purpose and a goal in every aspect of his role as Creator (which includes originating and sustaining). The obvious result of this is that all of creation is, by this definition, intelligent, and likewise, all of it is designed. Nothing could be considered accidental. Nothing happens "by itself," and origins are not just found in the outworking of natural laws. Nothing is really coincidence. In one of Orson Scott Card's novels one character quips, "Coincidence is just the word we use when we have not yet discovered the cause. . . . It's an illusion of the human mind, a way of saying, 'I don't know why this happened this way,

and I have no intention of finding out.'"[1]

Likewise, the fact that we believe that God did *X* does not mean that it is no longer subject to scientific investigation. Everything that exists and everything that happens is, in Christian thinking, ultimately an act of God. Yet in the layer cake model we have presented, that does not mean that scientific or historical inquiry should be cut off—they still have the potential of leading to understanding at a different level.

In recent decades a movement referred to as Intelligent Design has become prominent. Throughout the ages scientists have always admired the cosmos as evidencing design, though in more modern times, many scientists are more likely to talk about the "appearance" of design. The Intelligent Design movement (ID) insists that this appearance of design is not illusive, but is the result of an unidentified intelligent designer.

One of the primary ways the Intelligent Design movement has offered evidence for its contention is through the identification of what they call irreducible complexity.[2] They have identified structures that require a multitude of parts that need to be functional all at once for the structure to continue to exist and do its job, therefore concluding that the structure could not have evolved one piece at a time. They make no consistent claims about the nature of the designer. They believe that these irreducible complexities show the weaknesses of Neo-Darwinian evolution (the reigning paradigm for understanding biological origins), but they have not gotten to the point where they have alternative scientific mechanisms to promote. In other words, ID does not offer a theory of origins. It offers conclusions from observations in the natural world and posits that those observations argue against the reigning paradigm of Neo-Darwinism. It must be noted, however, that even as many might grant weaknesses in the reigning paradigm, ID would only be one among many possible alternatives.

Protagonists of ID would like their claims and particularly their critique accepted as science. In the political realm, some have tried to force its adoption as an alternative to be offered in public education. The difficulty they face is that if there is intelligent design, there must logically be an intelligent designer. Given the existence of a designer, it would logically be inferred that such a designer is not simply playing games or being artistic, but is working with a purpose.[3] Science is not capable of exploring a designer or his purposes. It could theoretically investigate design but has chosen not to by the parameters it has set for itself (back to the layer cake analogy). Therefore, while alleged irreducible complexities and mathematical equations and probabilities can serve as a critique for the reigning paradigm, empirical science would not be able to embrace Intelligent Design because science has placed an intelligent designer outside of its parameters as subject to neither empirical verification nor falsification.

In short, teleological aspects (exploration of purpose) are not in the realm of science as it has been defined and therefore could not be factored into a scientific understanding. ID *could* be considered as contributing to the scientific enterprise when it is offering a critique of the reigning paradigm because it offers scientific observations in its support. But it does not contribute to the advance of scientific understanding because it does not offer an alternative that is scientifically testable and falsifiable. Its basic premise is a negative one: that "naturalistic mechanisms (i.e., natural selection, random mutation) cannot fully account for life as we know it."[4] ID does not deny the operation of naturalistic mechanisms—it simply finds them insufficient to offer a comprehensive explanation of all observable phenomena. It cannot offer at present a scientific hypothesis proposing alternatives. Consequently it can only offer inferences regarding science that can only be tracked currently by leaving the realm of science. Nevertheless proponents

of ID would make a lesser claim that design itself is detectable and researchable and therefore can be subject to scientific investigation—the design element, not the nature or existence of the designer. They offer no theory of origins nor do they attempt to interpret the Bible or contribute to theological thinking.

Some would say that it is just plain and simple logic that some things are the product of design.

> Design seems to be a common thread that runs through the whole of nature. Time and again, in cases that have been cataloged since the dawn of biology, nature reveals that (1) its inhabitants are remarkably suited to fit their environment and (2) the various parts and systems that constitute organisms are remarkably suited to work in concert with one another.[5]

No one finds a watch on the beach and thinks that it is a relic of nature; no one looks at Mount Rushmore and concludes that it is the result of wind and erosion. But when these products of intelligent design are recognized, the process to understand them becomes a historical one, not a scientific one. To recognize them as products of design is to remove them from the arena of scientific investigation.

Intelligent Design has been criticized as being a God of the gaps approach. "God of the gaps" says that if there is no known naturalistic explanation of an observable phenomenon, that phenomenon is attributable to God. The unfortunate result of this way of thinking is that as scientific knowledge grows and more phenomena are explained, the role of God shrinks away. While ID vehemently denies being a God of the gaps approach, the logical hurdle is that if they believe that naturalistic explanations are insufficient, design in nature can only be established beyond reasonable doubt if all naturalistic explanations have been ruled out.[6]

Proving a negative logically requires that all possibilities have been considered, which in turn requires that all possibilities are known. As a result design cannot be established beyond reasonable doubt (it would be presumptuous to suggest that knowledge is so exhaustive that all possibilities are known), and it can only fall back on the claim that the *currently proposed* naturalistic mechanisms do not suffice. Design is thus attributed to observable phenomena that carry characteristic hallmarks of design (in an ID way of understanding) that cannot be explained by naturalistic mechanisms. This list ends up looking very much like the God of the gaps list.

Neo-Darwinism (N-D) is in no more attractive a position. While ID says that irreducible complexity provides evidence for design, N-D swings the pendulum in the opposite direction. It responds to the claims of irreducible complexity by proposing components that might have come together to produce what now appears to be irreducibly complex. Even if such an explanation cannot be found, or is criticized as being far-fetched, the underlying assumption is that there *must be one* (presumably because all phenomena *must* be the result of naturalistic mechanisms). Both then are ultimately based on metaphysical premises. ID has defined itself to allow a metaphysical acceptance of purpose (teleology), while some proponents of N-D presuppose by definition a metaphysical acceptance of "dysteleology"—that there can be no purpose or goal. In effect then ID suggests that there is warrant for opening scientific investigation to teleological possibilities. Mainstream science contends that dysteleology must be retained in its self-definition. At this point they are not willing to rewrite the current rules of science to allow for either intelligence or design. Having said this, it must be reiterated that whatever definitions of science may be and whatever scientific methods may be allowed or disallowed, the existence of purpose is unaffected.

Perhaps there are other naturalistic mechanisms beyond random mutation and natural selection that offer better explanations for observable phenomena (and along the way show more promise of explaining how presumably irreducibly complex phenomena came to be). Just such approaches are constantly being proposed and developed. What has been referred to as "meta-Darwinism"[7] includes a variety of (independent) proposals for naturalistic mechanisms that do not supplant natural selection and random mutation, but relegate them to a different role in the developmental process of organisms. These proposed mechanisms include endosymbiosis, developmental mutations (evo-devo), multilevel selection and complexity theory (self-organization). Of course these do not resolve the metaphysical issues if they still operate with dysteleological presuppositions. Some, to their credit, attempt to be neutral with respect to teleology. The stricture remains against making any explicit appeal to purpose in scientific explanations. To appeal to purpose is to shift to a different kind of explanation (e.g., metaphysical, theological).

Consequently we find that even as ID proposes that N-D fails to provide adequate naturalistic mechanisms to explain the existence of "irreducible complexities," the response of science has *not* been to admit that there must be a designer. Instead critique from a variety of sources has prompted continuing work to offer alternative naturalistic mechanisms that will remedy the inadequacies of N-D. This is how science works—it seeks out other scientific explanations. If scientists simply threw up their hands and admitted that a metaphysical, teleological explanation was necessary, they would be departing from that which is scientific.

The question is whether we can assume such hard and fast lines of distinction between the scientific and the metaphysical. It is true that observations can be put into one category or the other, but the fact is that such a categorization is artificial because none

of us has a worldview comprised of only one of them. Science and metaphysics blend together in life. Can science be taught with no metaphysical aspect? Should metaphysics be isolated from the sciences? These questions will be dealt with in future chapters.

In conclusion, this chapter has introduced ID as both a critique of N-D, in which sense it alleges to be scientific, but also as offering an understanding of the world that is ultimately teleological—purposeful—in which sense it departs from the realm of scientific investigation and theorization.

The view of Genesis offered in this book is also teleological but accepts that all of creation is the result of God's handiwork, whether naturalistic mechanisms are identifiable or not, and whether evolutionary processes took place or not. God has designed all that there is and may have brought some of his designs into existence instantaneously, whereas others he may have chosen to bring into existence through long, complicated processes. Neither procedure would be any less an act of God.

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PROPOSITION 16

Scientific Explanations of Origins Can Be Viewed in Light of Purpose, and If So, Are Unobjectionable

The view offered of Genesis 1 recognizes that it was never intended to be an account of material origins. Rather it was intended as an account of functional origins in relation to people in the image of God viewing the cosmos as a temple. Though the Bible upholds the idea that God is *responsible* for all origins (functional, material or otherwise), if the Bible does not offer an *account* of material origins we are free to consider contemporary explanations of origins on their own merits, as long as God is seen as ultimately responsible. Therefore whatever explanation scientists may offer in their attempts to explain origins, we could theoretically adopt it as a description of God's handiwork. Scientific discussions of origins include a variety of different sciences including physics, geology, biochemistry and biology. As we consider these areas we might say that if there was a big bang (the current leading scientific explanation adopted by physicists and cosmologists), that is a description of how God's creation work was accomplished. If it turns out that some other explana-

tion works better, God was at work through that. If the universe is expanding, God is at work. If geological strata were laid down eon by eon, God is at work. If various life forms developed over time, God is at work. Since biological evolution is the hot spot for controversy, we will focus our attention on that aspect of origins.

One possible objection is that too much in an evolutionary system is difficult to reconcile to the character of God. While it has been noted over the centuries that the cosmos is ideally suited for human habitation (anthropic principle), we also observe many disturbing features.[1] Survival of the fittest seems cruel. Pseudogenes seem useless and wasteful. Why were chromosomal aberrations not corrected instead of just being transmitted down the line?

In response to this objection, note that when Job believed that his understanding of the world and how it worked could be reduced to a single model (retribution principle: the righteous will prosper; the wicked will suffer), his suffering took him by surprise and was without explanation. How could such a thing happen? Why would God do this? The book is full of Job's demand for an explanation. When God finally appears he does not offer an explanation, but offers a new insight to Job. By confronting Job with the vast complexity of the world, God shows that simplistic models are an inadequate basis for understanding what he is doing in the world. We trust his wisdom rather than demanding explanations for all that we observe in the world around us and in our own lives. Scientific theories offer explanations concerning how the world, which we attribute to God's design, works. The objection to evolution raised above asks *why* God would do it that way. This is one of those "if I were God I would do it differently" (read, "better") kinds of arguments that humans presumptuously engage in. This is unhelpful in the same way as questioning God's justice with the implication that we could do it better. God did what he

did, and we cannot second guess him.

This is a lesson we still need to learn. God in his wisdom has done things in the way that he has. We cannot stand in judgment of that, and we cannot expect to understand it all. We can still explore the *what* and the *how* questions, but the *why* will always lie beyond our understanding and beyond our models. Relative to God, as humans we are by definition simplistic. We must also remember some of the key lessons of Scripture. In our weakness he is strong. He can use suffering to strengthen our character. He can use evil to accomplish good (precisely the nature of the discussion in the book of Habakkuk). God's sovereignty is demonstrated in that whatever personal or nonpersonal agents do, God takes it and turns it to his purpose.

Our question then cannot be whether one model or explanation for the cosmos and its origins is reconcilable with the nature of God. We don't have enough information to make that assessment. We can only ask what Scripture requires us to defend.

In chapter one we pointed out that the common dichotomy drawn today between "natural" and "supernatural" did not exist in the ancient world. I would also propose that it is not theologically sound. God cannot be removed or distanced from those occurrences that we so glibly label "natural." When we so label phenomena, it is an indication that we understand (at least to some extent) the laws and causes that explain it. Be that as it may, that does not mean that God does not control that process. What we identify as natural laws only take on their law-like quality because God acts so consistently in the operations of the cosmos. He has made the cosmos intelligible and has given us minds that can penetrate some of its mysteries.

Let us take an example to comment on this dynamic. In Psalm 139:13 the psalmist declares to God: "You knit me together in my mother's womb." This and other statements in the

Bible affirm God as the creator of each human being in the womb. The first observation is that this act of creation is not instantaneous but involves a process. Yet it is the work of God. A second observation is that this process is well understood by science. From the process of fertilization, implantation, fetal development and birth, scientists find that which is explainable, predictable and regular. The field of science called embryology offers a complex sequence of naturalistic cause and effect for the development of a child. Yet this blossoming of a life remains full of mystery.

Our biblical belief does not associate God's work only with those aspects that remain a mystery. God is involved with the entire process start to finish. He made us so that the process can work the way that it does, and each child is his handiwork.[2] In like manner we should observe that our biblical faith in the statement of Psalm 139 does not require us to denounce the science of embryology. It is not an either/or decision. God knits us together in our mother's womb and the processes observed by scientists merely explore the work of God. We have no cause to reject the science, yet science is incapable of affirming or identifying the role of God.

These same phenomena are also true in history. We believe that God is in control of history and shapes events moment by moment. It is all subject to his sovereignty. Despite that theological affirmation, no historian is able to see God's hand clearly, though depending on one's presuppositions one may conclude that God is at work. Some of those conclusions would be the result of incredible coincidences, while others would be the result of that which is otherwise unexplainable. We might notice that these are the same issues that drive Intelligent Design in their assessment of the sciences.

We believe that God controls history, but we do not object

when historians talk about a natural cause-and-effect process. We believe that God creates each human in the womb, but we do not object when embryologists offer a natural cause-and-effect process. We believe that God controls the weather, yet we do not denounce meteorologists who produce their weather maps day to day based on the predictability of natural cause-and-effect processes. Can evolution be thought of in similar terms?

It would be unacceptable to adopt an evolutionary view as a process without God. But it would likewise be unacceptable to adopt history, embryology or meteorology as processes without God. The fact that embryology or meteorology do not identify God's role, or that many embryologists or meteorologists do not believe God has a role makes no difference. We can accept the results of embryology and meteorology (regardless of the beliefs of the scientists) as processes that we believe describe in part God's way of working. We don't organize campaigns to force academic institutions that train meteorologists or embryologists to offer the theological alternative of God's role. Why should our response to evolution be any different?

There are, of course, some differences that come to mind. First, meteorology and embryology are advanced sciences—they are not taught in middle school. Therefore evolution is more of an issue in public education than the others are. Second, there is a sense in which evolution is "closer to home" in that it potentially touches on our identity, our place in the world, our sense of significance. As such it threatens us at personal levels in ways that meteorology and embryology do not. Third, the teaching of evolution is more likely to eventuate in metaphysical implications if not in explicit metaphysical statements. That is, it is more likely that evolution will be offered as an account of origins that explicitly denies God a role, thus setting up a conflict and demanding a choice. Such a choice is unnecessary and unacceptable (to be discussed in a future chapter),

but should lead to adjustments in how the subject is taught, not in the total rejection of the principles and role of biological evolution.

This does not mean that all aspects of evolutionary theory should be accepted uncritically or even that evolution provides the best model. Meteorology and embryology are being constantly modified, and biological evolution is no different. I am not suggesting a wholesale adoption of evolution, merely suggesting that neither Genesis 1 specifically nor biblical theology in general give us any reason to reject it as a model as long as we see God as involved at every level and remain aware of our theological convictions.

As I have thought about the issues, it seems that there are three major reasons that people who take the Bible seriously have troubles with biological evolution.[3]

1. Theology

The problem people have on the theological level, as we have discussed, is that evolution is often construed in such a way as to leave God out of the picture—as if it denies the existence of God or even can establish beyond reasonable doubt that he does not exist. This is not a problem with evolutionary theory, only a problem with some who propagate evolution in dysteleological ways (absent of purpose). This problem is easily resolved by an affirmation that whatever evolutionary processes may have taken place, we believe that God was intimately involved in them. This is a metaphysical and theological decision that can only take place outside of the scientific aspects of evolutionary theory. The choice we make about God's role eliminates the problem without requiring that all evolutionary theory be rejected.

2. Genesis 1

Genesis 1 presents many challenges in people's minds to accepting

evolutionary theory. As we have been discussing, many believe that the seven-day structure of Genesis 1 requires a young earth, while evolutionary theory requires long periods of time. Likewise some would point out that in Genesis 1 creation takes place by the word of the Lord, from which they infer instantaneous creation. The first of these objections is resolved if we see Genesis 1 to be an account of functional origins as proposed and defended in previous chapters. The question of the age of the earth can only be addressed from Genesis 1 if it is an account of material origins. If it is not, then the Bible offers no information on the age of the earth.

The second objection can be addressed by looking at the wide range of phenomena that are brought into being by divine speech (divine fiat). God is sovereign and his word is an effective decree. While some of what he decrees comes about immediately, in other instances his decree initiates a process.[4] One need not conclude that divine fiat implies instantaneous fulfillment. God does everything, and everything that he does is by his decree.

If Genesis 1 does not require a young earth and if divine fiat does not preclude a long process, then Genesis 1 offers no objections to biological evolution. Biological evolution is capable of giving us insight into God's creative work.

3. Genesis 2 and Romans 5

The third reason that people who take the Bible seriously object to evolution is related to the nature of humanity as being in the image of God, to the nature of sin, and to the question of the historicity of Adam and Eve. Here we are talking about theological realities taught clearly in the Old and New Testaments. How can human beings be considered the result of an evolutionary process and the biblical teachings be preserved? A solution that some offer suggests separating the material issues in human origins from the spiritual or metaphysical ones. In other words, they pro-

pose considering that humans develop physically through a process and somewhere in that process, undetectable by science, the image of God becomes part of the human being by an act of God. This would be followed by an act of disobedience by those image-bearing humans that constitutes the Fall and initiates the sin nature. Some suggest that this is what occurred with a single, historical human pair (a literal Adam and Eve) while others conjecture that this transpired with a group of persons so that "Adam and Eve" would be understood corporately as the first humans, not as a single original human pair. Such views, which I continue to find problematic on a number of levels, have been proposed in attempts to reconcile the supposed contradictions between the Bible and the anthropological fossil evidence, and they stand as examples of continuing attempts to try to sort out this complex issue.[5] Unfortunately no option is without difficulties.

As always, in our commitment to defend an accurate interpretation of the text and sound theology we must consider carefully and try to determine precisely what issues we must defend. The image of God and the sinful act of disobedience dooming all of humanity are biblical and theological realities linking us to Adam and Eve, whom the biblical text treats as historic individuals (as indicated by their role in genealogies).[6] That God is the Creator of human beings must be taken seriously. We continually seek understanding of biblical texts for what they communicate in their own theological and cultural contexts. Whatever evolutionary processes led to the development of animal life, primates and even prehuman hominids, my theological convictions lead me to posit substantive discontinuity between that process and the creation of the historical Adam and Eve. Rather than cause-and-effect continuity, there is material and spiritual discontinuity, though it remains difficult to articulate how God accomplished this. The point I want to make is that

perhaps Genesis 2 and Romans 5 do not pose as many problems as some have thought, allowing us to reap from science understandings of how life developed up to and including the creation of the first humans.

If the theory proposed in this book is on target, Genesis 1 does not offer a descriptive model for material origins. In the absence of such a model, Christians would be free to believe whatever descriptive model for origins makes the most sense. The major limitation is that any view eventually has to give God full control of the mechanisms if it claims to be biblical. A biblical view of God's role as Creator in the world does not require a mutually exclusive dichotomy between "natural" and "supernatural," though the reigning paradigms are built on that dichotomy. It does not matter that there may be perfectly acceptable and definable empirical descriptions and explanations for observed phenomena and aspects of origins. Such would not exclude divine activity because without the natural/supernatural dichotomy, divine activity is not ruled out by empirical explanation. I can affirm with the psalmist that God "knit me together in my mother's womb" without denying the premises of embryology. Likewise those aspects of evolutionary mechanisms that hold up under scrutiny could be theoretically adopted as God's mechanisms.

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PROPOSITION 17

Resulting Theology in This View of Genesis 1 Is Stronger, Not Weaker

Having discussed what effect this interpretation of Genesis 1 has on thinking about science, we now ought to consider what effect it has on our thinking about theology. What threats might it pose or what strength or clarity might it offer?

The changes that this interpretation might suggest do nothing to weaken the picture of God. Even if the account in Genesis 1 is taken as an account of functional origins, it would not therefore imply that God is not responsible for material origins. The biblical view is that whatever exists from any perspective is the work of God. So this view does not reduce what God has done, it only suggests a change of focus concerning what aspect of God's work is represented in Genesis 1.

In the same fashion the suggestion that some of God's work of creation may have taken place over a long period of time rather than instantaneously does not reduce God's power.[1] God can create any way he sees fit, and it is no less an act of his sovereign power if he chooses to do it over extended billions of years. It is still accomplished by his word. Some would see the great span of time as further indication of God's majesty. If nothing is taken

away from God's works and his sovereignty is not reduced, then there is no theological threat regarding God's person or deeds.

On the other side of the equation, there is much to be gained theologically from this interpretation of Genesis 1. In fact we will find that a more vital and robust theology of God as Creator emerges when we adopt this interpretation and its implications. Some of these have been pointed out in previous chapters, but here they will be gathered together for consideration.

God's Role in Everything

Our scientific worldview has gradually worked God out of the practical ways in which we think about our world. When science can offer explanation for so much of what we see and experience, it is easy for our awareness of God's role to drift to the periphery. It is not that we believe any less that he is active, it is just that we are not as conscious of his role. The result is a practical (if not philosophical) deism in which God is removed from the arena of operations.

In contrast, when God's work is fully integrated with our scientific worldview and science is seen to give definition to what God is doing and how he is doing it, we regain a more biblical perspective of the work—a perspective that is theologically healthier.

Creator Role Ongoing

If God's work of creation is considered only a historical act that took place in the past, it is easy to imagine how people might not think in terms of God being active today. We have lost the view that nature does not operate independently from God. He is still creating with each baby that is born, with each plant that grows, with each cell that divides, with each nebula that forms. We might find it easy to look at some majestic view like a glorious sunset or the grandeur of the mountains and ponder the magnificence of

God's handiwork. But this sense needs to extend beyond the "wow" moments to encompass all of our experience of his world. We have the same problem when we only recognize God in some incredible occurrence in our lives and forget that he provides for us, cares for us and protects us moment by moment, day after day. God did not just create at some time in the past; he is the Creator—past, present and future.

God's Control of Functions

Although we are acutely aware of the physical world around us, we live in a world of functions. Materialism sees the functions of our world as the consequence of structures, that is, that objects or phenomena in our world function the way that they do because of their physical structures. In the biblical way of thinking, the objects and phenomena in the world function the way they do because of God's creative purposes. This gets back to the issue of teleology that we have discussed in previous chapters. Materialism has no room for purpose, and so the operative equation concerns only structures and the resulting functions. The biblical way of thinking counters materialism when it insists that the most important part of the equation is God's purposes.

Our world tends to subordinate the functional to the material. That is why ever since the Enlightenment (at least) we have generally believed that it is most important for us to think of creation in terms of the material. Our world has taught us to give priority to the material. In the view that we have presented of Genesis 1, the material is subordinate to the functional. The Bible considers it much more important to say that God has made everything *work* rather than being content to say that God made the physical stuff. The purpose, the teleology (which is the most important part), is located and observed in the functional, not the material.

To think about the contrast between the material and the

functional, and the illusionary nature of the material world, consider the following statements of one of the characters in Orson Scott Card's novel *Prentice Alvin:*

> "Everything's mostly empty. That anvil, it looks solid, don't it? But I tell you it's mostly empty. Just little bits of ironstuff, hanging a certain distance from each other, all patterned there. But most of the anvil is the empty space between. Don't you see? Those bits are acting just like the atoms I'm talking about. So let's say the anvil is like a mountain, only when you get real close you see it's made of gravel. And then when you pick up the gravel, it crumbles in your hand, and you see it's made of dust. And if you could pick up a single fleck of dust you'd see that it was just like the mountain, made of even tinier gravel all over again."
>
> "You're saying that what we see as solid objects are really nothing but illusion. Little nothings making tiny spheres that are put together to make your bits, and pieces made from bits, and the anvil made from pieces—"
>
> "Everything is made out of living atoms, all obeying the commands that God gave them. And just following those commands, why, some of them get turned into light and heat, and some of them become iron, and some water, and some air, and some of them our own skin and bones. All those things are real—and so those atoms are real."[2]

Sacred Space

Once we turn our thinking away from "natural world" to "cosmic temple" our perspective about the world around us is revolutionized. It is difficult to think of the "natural world" as sacred (because we just designated it "natural"). When the cosmos is viewed in secular terms, it is hard to persuade people to respect it unless

they can be convinced that it is in their own best interests to do so. If it is secular, it is easy to think of it only as a resource to be exploited. We even refer to "natural resources."

But when we adopt the biblical perspective of the cosmic temple, it is no longer possible to look at the world (or space) in secular terms. It is not ours to exploit. We do not have natural resources, we have sacred resources. Obviously this view is far removed from a view that sees nature as divine: As sacred space the cosmos is *his place*. It is therefore not *his person*. The cosmos is his place, and our privileged place in it is his gift to us. The blessing he granted was that he gave us the permission and the ability to subdue and rule. We are stewards.

At the same time we recognize that the most important feature of sacred space is found in what it is by definition: the place of God's presence. The cosmic-temple idea recognizes that God is here and that all of this is his. It is this theology that becomes the basis for our respect of our world and the ecological sensitivity that we ought to nurture.

Sabbath

The fourth commandment directs people to observe the sabbath based on God's rest in Genesis 1.[3] Throughout human history interpreters of Scripture have struggled to work out the implications of this directive. What constitutes rest? What activities are ruled out? Part of the difficulty is that the Bible offers little detail as it tends more toward vague generalizations. Furthermore most of the statements are negative (what one should not do) rather than positive (approved or even mandated activities).

Given the view of Genesis 1 presented in this book, we get a new way to think about the sabbath. If God's rest on the seventh day involved him taking up his presence in his cosmic temple which has been ordered and made functional so that he is now

ready to run the cosmos, our sabbath rest can be seen in a different light. Obviously, God is not asking us to imitate his sabbath rest by taking the functional controls. I would suggest that instead he is asking us to recognize that he is at the controls, not us. When we "rest" on the sabbath, we recognize him as the author of order and the one who brings rest (stability) to our lives and world. We take our hands off the controls of our lives and acknowledge him as the one who is in control. Most importantly this calls on us to step back from our workaday world—those means by which we try to provide for ourselves and gain control of our circumstances. Sabbath is for recognizing that it is God who provides for us and who is the master of our lives and our world. We are not imitating him in sabbath observance, we are acknowledging him in tangible ways.

If we have to be reminded or coerced to observe it, it ceases to serve its function. Sabbath isn't the sort of thing that should have to be regulated by rules. It is the way that we acknowledge that God is on the throne, that this world is his world, that our time is his gift to us. It is "big picture time." And the big picture is not me, my family, my country, my world, or even the history of my world. The big picture is God. If the sabbath has its total focus in recognition of God, it would detract considerably if he had to tell us what to do. Be creative! Do whatever will reflect your love, appreciation, respect and awe of the God of all the cosmos. (This is the thrust of Is 58:13-14.) Worship is a great idea, but it can't be mechanical, and it may only be the beginning. It is up to the individual to determine his or her personal response to give the honor that is due. The more gratitude we feel toward God and the more we desire to honor him, the more the ceremonies will mean and the more we will seek out ways to observe the sabbath. All of this derives from a renewed understanding of the sabbath that proceeds from our interpretation of Genesis 1.

Order

Any reader of the Bible can see that wisdom is a worthy pursuit and that as an attribute of God he grants it to humans who, being in his image, are able to achieve it to some degree. What is less transparent, and often the topic of discussion, is exactly what constitutes wisdom. A theory I find very attractive for the way it suits the wide variety of data is that wisdom entails finding inherent order and conforming oneself to that order. One understands authority, society, family, relationships, ethics and etiquette all in relationship to an understanding of order.

Interpreters of Wisdom literature have consistently noticed how prominent a topic creation is in that literature. The connection of wisdom with order offers an explanation for that prominence. God's creative work has established order in the cosmos just as he has established order in society and all other areas. Science has observed that order and given us an appreciation of how deeply order penetrates.

In the interpretation of Genesis 1 that has been proposed here, we understand that one of the main emphases of the account of creation is the order that God brings to the cosmos in his wisdom. The temple was seen as being at the center of the ordered world as God established and preserved order in the world from the temple.

When we are troubled by the disorder that we encounter in this world, it is important to understand that the disorder and brokenness of this world are the result of human sin and the Fall. The theological commitment we draw from Genesis 1 is that God is the author of order. We respond by understanding how he has ordered the world: materially, functionally and spiritually.

Human Role

The description of humankind and the statement of blessing in

Genesis 1 can now be understood perhaps a little more clearly as related to human functions. When God grants the privilege that people may be fruitful and multiply, he gives us the function of populating the world without limitation. When God creates people in his image it indicates, perhaps among other things, that we are to function as his stewards over creation. When God gives the mandate to subdue and rule, he is assigning a task and providing the wherewithal to accomplish that task. Through Genesis 1 we come to understand that God has given us a privileged role in the functioning of his cosmic temple. He has tailored the world to our needs, not to his (for he has no needs). It is his place, but it is designed for us and we are in relationship with him.

This view is different from both the ancient Near East and different from modern materialism. In the ancient Near East people were created as slaves to the gods. The world was created by the gods for the gods, and people met the needs of the gods. In the Bible God has no needs, and his cosmic temple has been created for people whom he desires to be in relationship with him. In modern materialism people are nothing but physical forms having no function other than to survive. The theology of Genesis 1 is crucial to a right understanding of our identity and our place in the world.

Theological Implications of "It Was Good"

Finally, interpreters have often offered a variety of opinions of the meaning of the repeated statement in Genesis 1 that "it was good." Some have drawn far-reaching implications from their interpretation. We have already discussed in chapter four the idea that "good" is a reference to being functional, not a matter of moral goodness. This is an important distinction because it does not suggest that we ought to look for moral goodness in the way that the cosmos operates. When we think of "good" in connection to

being functional rather than moral, we don't have to explain how predation can be part of a morally good world. As God indicated to Job, even though the world is God's place and functions under his control, that does not mean that the cosmos is a reflection of God's attributes (Job 38). The cosmos declares God's glory, and his existence can be deduced in the observation of the world, but those truths do not indicate that his attributes are consistently worked out in what we call the "natural world." Gravity is not just; rain falls on the righteous and unrighteous alike , even where no one lives (Job 38:25-27); the created world is not "fair." If it were going to be consistently fair and just, there would be no room for sin at all. Given that it is a sinful world, God's condescending grace reigns.

The theological issues presented in this list should be recognized as mirroring the theological interests about creation found in the rest of the Bible. As the reader of the Bible looks through Psalms, Wisdom literature, prophets and on into the New Testament, one finds these same sorts of theological affirmations to be the focus. The Bible gives little attention to material origins, though of course God did that too. Consequently even if the reader is not inclined to adopt the proposed interpretation of Genesis 1, his or her theology could still be greatly enhanced by the observations offered here by embracing a renewed and informed commitment to God's intimate involvement in the operation of the cosmos from its incipience and into eternity. We all need to strengthen our theology of creation and Creator whatever our view of the Genesis account of origins. Even though it is natural for us to defend our exegesis, it is arguably even more important to defend our theology. I have attempted to demonstrate that exegesis of the original meaning of Genesis 1 gives us no cause to argue with the idea of the physical world coming about by a slow process. But we do need to defend at all costs an

accurate view of the nature of God and his role in our world.

So what affirmations does the proposed interpretation of Genesis 1 expect of us?

1. The world operates by Yahweh's design and under his supervision to accomplish his purposes.
2. The cosmos is his temple.
3. Everything in the cosmos was given its role and function by God.
4. Everything in the cosmos functions on behalf of people who are in his image.

PROPOSITION 18

Public Science Education Should Be Neutral Regarding Purpose

On the basis of the view that Genesis 1 is a discussion of functional origins, we may now tackle the question of what is appropriate in the classroom. If a science course intends to discuss material origins from the perspective of a material ontology (which is essential to the nature of empirical science), there is no point at which the Genesis account becomes relevant, because Genesis does not concern material origins and does not have a material ontology. A significant point of disagreement, however, does exist between the Bible and the metaphysical assumptions that may at times accompany the teaching of evolutionary theory. This conflict arises from the metaphysical issue of purpose (teleology). Framing the issue this way moves the discussion from the sphere of theology to the larger metaphysical sphere and asks: Are origins teleological (having a purpose and a goal) or dysteleological (no purpose, no goal)?

Those who accept the Bible by faith accept also by faith a teleological view of origins. Empirical science[1] is not designed to be able to *define* purpose, though it may theoretically be able to de-

duce rationally that purpose is logically the best explanation. As the result of an empirical discipline, biological evolution can acknowledge no purpose, but likewise it cannot contend that there is no purpose—it must remain teleologically neutral. In this book I have proposed that Genesis 1 presents an account of functional origins and therefore that it offers no descriptive mechanism for material origins. If this is so, one could accept biological evolution as providing a descriptive mechanism putatively describing how God carried out his purposes. Perhaps this approach could be labeled *teleological evolution*. In terms of cosmic origins, biblical theology is compatible with a descriptive mechanism such as that provided by biological evolution offered in terms that leave aside questions concerning purpose (i.e., teleologically neutral). But biblical theology is irreconcilable with metaphysical naturalism[2] to the extent that the latter is committed to refusing any consideration of purpose (dysteleological). This bone of contention concerns metaphysics, not empirical science.

I have proposed here that Genesis is *not* metaphysically neutral—it mandates an affirmation of purpose, but it leaves the descriptive mechanism for material origins undetermined. Teleological affirmation (there *is* a purpose and God is carrying it out in his work of creation) in one's belief assures a proper role for God regardless of the descriptive mechanism identified for material origins. This view of Genesis can be compared to other theoretical approaches as follows:

Creationism, particularly young earth creationism, differs from the view proposed in this book by insisting that the Bible *does* offer a descriptive mechanism for material origins in Genesis 1, and therefore is both teleological and intrinsically opposed to the descriptive mechanism offered by biological evolution. We have suggested that this perspective does not represent an accurate contextual reading of Genesis.

Biological evolution is an empirically derived model that suggests several descriptive mechanisms for material origins. As an empirically derived model, it can only be agnostic concerning teleological affirmation or denial because purpose cannot be identified by any empirical methods. The descriptive mechanisms associated with biological evolution *can* operate within empirical science without dabbling in the metaphysics of teleology. Of course that does not mean that this is how it is consistently handled in textbooks and classrooms. For example, in 1995 the National Association of Biology Teachers (NABT) issued a "Statement on the Teaching of Evolution."[3] An initial description of evolution used adjectives such as "unsupervised" and "impersonal."[4] These words faced strong opposition from a variety of outside parties and were later struck from the statement (1997 revision). More care is needed to articulate a view that, while unapologetic in its foundation in *methodological* naturalism,[5] avoids embracing *metaphysical* naturalism. A good example is in the revised statement that subsequently appeared on the NABT website, which indicates that "natural selection has no discernable [*sic*] direction or goal, including survival of a species."[6] The critical word here is *discernible,* which makes this a more carefully nuanced and more acceptable statement of metaphysical neutrality.

On the whole science educators seem very concerned about limiting their focus to that which is valid science.[7] This is commendable. So, for example, the NABT statements regularly have something like the following: "Evolutionary theory, indeed all of science, is necessarily silent on religion and neither refutes nor supports the existence of a deity or deities."[8] Unfortunately, although they are quick to dismiss positions which blatantly promote teleological perspectives (creationism, Intelligent Design), there seems to be no attempt to dismiss positions that blatantly promote dysteleology, which is equally impossible to affirm

through empirical science (as they indicate). One wonders how willing the NABT would be to rise up against a teacher who actively promotes dysteleology, and would they do so with the same passion that they demonstrate when opposing those who support creationism or ID? Dysteleological approaches are just as invalid as teleological approaches in any curriculum that seeks to focus on empirical science. Science education can promote *methodological* naturalism (refusing to resort to a "God did it" explanation in their empirical study) without indoctrinating students in *metaphysical* naturalism, to which we now turn.

Metaphysical naturalism is *not* metaphysically neutral regarding teleology. Not content with an empirically based methodology, it mandates the restriction of *reality* to that which is material. By definition, empirical science is characterized by *methodological* naturalism, but once it begins propounding *metaphysical* naturalism, it has overstepped its disciplinary boundaries. We noted that Genesis assumes teleology (origins are the result of God acting with a purpose and a goal) and teaches tel-eology. That is part of its theology and is admittedly not something subject to observation or scientific demonstration—it is a matter of belief. Many modern scientists, in contrast, assume dysteleology (no purpose or goal), but such a conclusion is likewise part of a metaphysical system and is not subject to observation or scientific demonstration. Even when a divine hand cannot be observed through scientific methods, that is insufficient reason to conclude that a divine hand does not exist or is not active. Science is designed only to operate within the closed system of the material universe—it ought not therefore pass judgment on whether or not there is anything outside the material universe. It therefore should not draw dysteleological conclusions if it is seeking to restrict itself to valid science. This is an important observation in the discussion of public education.

Intelligent Design has been a subject of considerable controversy

in recent years in the debate concerning public education. In our chapter on ID we drew a distinction between the issues of design and irreducible complexity, the former being largely metaphysical (though at times only reflecting a rational deduction), the latter reflecting a scientific observation about the interdependence of the parts of a structure. "Design" implies an intelligent cause rather than an undirected process, and as such proposes a *solution* to some perceived problems in biological evolution. The problem is that design refers to a rational deduction and as such is only one possible inference from what appears to some to be irreducible complexity.[9] Design by its nature can hardly avoid the transition from a rational deduction to a metaphysical proposal accompanied by an assumption of purpose (thus affirming a teleological view).[10] In contrast we have observed that evidence or claims of irreducible complexity can offer challenges for standard biological evolutionary theory. Such evidence confronts the reigning paradigm by raising questions about theories of evolutionary mechanisms that beg for solutions.

If public education is committed to the idea that science courses should reflect only empirical science, neither design nor metaphysical naturalism is acceptable because they both import conclusions about purpose into the discussion. This is not an issue of God, religion, faith, or church and state. It is a question about whether the metaphysical questions about purpose (teleology) should come into play in the science classroom, presumably adulterating that which is empirical with that which is nonempirical; and we contend that it should not.[11] The assertions of purposelessness (dysteleology) by materialists are objectionable to many people of faith, and affirmation of purpose (teleological elements) of theism, creationism or design are objectionable to many scientists. Once we rule out those approaches that represent blatant and self-acknowledged teleological platforms (i.e., Genesis, creationism and metaphysical naturalism), we can see that what re-

mains in the public education debate is no longer legitimately an issue of church and state, because neither theism per se nor any religious system is involved in the question. Neither design nor randomness can be proven—they are matters of deduction since both are based on a combination of probabilities and metaphysical presuppositions. If randomness cannot be sustained in certain cases, that still does not "prove" design. Likewise, if design cannot be sustained in certain cases, that does not "prove" randomness.[12]

If irreducible complexity is a valid observation, it should not be ignored on the basis of its common association with a design solution. The objective is for public education to inform students of scientifically plausible mechanisms without straying from empirical science into metaphysical teleology or dysteleology, either in what is taught or in what is banned from the classroom.

Various models for descriptive mechanisms of material origins could theoretically be taught, whatever their teleological underpinnings, as long as they have an appropriate level of scientific plausibility as descriptive mechanisms. At present, however, biological evolution is the reigning paradigm. We have proposed that Genesis 1 does not offer a competing descriptive mechanism for material origins, and Intelligent Design likewise does not currently have a replacement model to propose. The Discovery Institute, a think tank that explores Intelligent Design, agrees with this assessment. They do not promote a requirement to teach Intelligent Design.

> Discovery Institute recommends that states and school districts focus on teaching students more about evolutionary theory, including telling them about some of the theory's problems that have been discussed in peer-reviewed science journals. In other words, evolution should be taught as a scientific theory that is open to critical scrutiny, not as a

> sacred dogma that can't be questioned. We believe this is a commonsense approach that will benefit students, teachers, and parents.[13]

On the other hand, the Discovery Institute does not agree with legislation or policy that prohibits teachers from discussing design. "Although Discovery Institute does not advocate requiring the teaching of intelligent design in public schools, it does believe there is nothing unconstitutional about discussing the scientific theory of design in the classroom. In addition, the Institute opposes efforts to persecute individual teachers who may wish to discuss the scientific debate over design."[14] Here it would have to be clarified just what is meant by the "scientific theory of design" beyond being a reference to irreducible complexity. Consequently it should be noted that the Discovery Institute would not agree that teleological models do not belong in the science classroom.

For those concerned with the purity of science, the focus on descriptive mechanisms in an empirical discipline will be welcomed, and considering legitimate weaknesses in the reigning paradigm should pose no problem since science always accepts critiques—that is how it develops and improves. For those concerned about the Bible and the integrity of their theology, the descriptive mechanisms that compose the evolutionary model need not be any more problematic for theology than the descriptive disciplines of meteorology or embryology. These descriptive mechanisms can operate within either a teleological or dysteleological system.[15] If all parties were willing to agree to similar teleological neutrality in the classrooms dedicated to instruction in empirical science, the present conflict could move more easily toward resolution.[16]

In conclusion, when origins are discussed in the classroom, empirical science should be taught. We have discussed three important criteria regarding what constitutes empirical science:

1. It is based on a material ontology and premised on methodological naturalism (this eliminates Genesis from the classroom).
2. It is focused on scientifically valid descriptive mechanisms with their strengths and weaknesses acknowledged. So it should include critiques of Neo-Darwinism as well as other origins theories that are trying to offer better explanations of current observations.
3. It must be teleologically neutral (this rules out Genesis, metaphysical naturalism and design).

Summary of Conclusions

1. Genesis operates primarily within a functional ontology as a faith system.
2. Genesis is insistent in affirming teleology with no possible neutrality.
3. Consequently Genesis should not be taught in empirical science classrooms, for it is not empirical science.
4. Empirical science operates within a material ontology and can be taught as a byproduct of that ontology.
5. Empirical science need not favor teleology or dysteleology and should remain neutral on the issue as much as possible.
6. What science has to offer concerning descriptive mechanisms of material origins can be explored in metaphysically neutral ways without offense to biblical affirmations in Genesis 1.
7. If metaphysical naturalism were to be allowed in the science classroom, then there would no longer be any logical reason to ban discussion of design. Since metaphysical naturalism opposes teleological conclusions, it functions on the same metaphysical plane as design, which opposes dysteleological conclusions.
8. Irreducible complexity has a potential role in the empirical sci-

ence classroom but should not be a matter for legislation one way or the other.

Having granted the role of empiricism in the science classroom, our public educational systems are woefully inadequate if curricula totally ignore metaphysics. I would not want to burden scientists with the task of teaching metaphysics in their science classrooms—whether their metaphysics agree with mine or not. Likewise we need not introduce theology into the public curriculum, though it may have a defensible place as an academic discipline. But somewhere students should be taught about metaphysical systems and the alternatives, and about how a variety of metaphysical systems could integrate with science. This is not an issue of faith, or of a particular religion, or of biblical teaching. It is simply an issue of a well-rounded education. "The only way around this logjam is to *decouple the philosophical (or religious) commitments from the science.*"[17]

The fact is that even though empirical science can be taught as such, scientists must function in an integrated world. A scientist could be at the top of his or her scientific discipline, but that would not mean the scientist was equipped to apply his or her scientific expertise to the various social issues that arise in our world. Bioethics requires an understanding of biology *and* of ethics. Decisions about applied technologies, genetic research, fossil fuel use, environmental controls and a myriad of other important issues require not only scientific training but metaphysical (philosophical and even theological) sophistication. If scientists are the ones making decisions for how their science will find its use in society, they must be as astute in thinking about the metaphysical aspects as they are in thinking about the scientific issues.

It is important that we teach empirical science and teach it well. But empirical science is not an education unto itself that can serve all the needs of society or that can serve as the sum of one's educa-

tion. The physical sciences are only one branch of education, and we dare not isolate them from the humanities or elevate them as self-contained. As a consequence of these conclusions, I would propose the following resolutions:

Be it resolved:

1. that teachers of science education in the public arena should maintain teleological neutrality to the fullest of their ability;
2. that publishers of science curricula and textbooks for public education should maintain teleological neutrality, and that administrators and science departments should make such neutrality one of the criteria in the selection of textbooks;
3. that administrators in public education should develop courses in which metaphysical options can be considered and that are taught by those who are educated in metaphysics, because it is important for students not only to be competent scientists, but also educated philosophers equipped to make the complex decisions that challenge public policymaking;
4. that people of faith should cease trying to impose their own teleological mandates on public science education; and people who are skeptical of faith should cease trying to impose their own dysteleological mandates on public science education;
5. that those who honor the Bible should allow it to find its theological affirmations as a functional cosmology rather than pressing it into service in public education as if it offered a descriptive mechanism for material origins.

Technical Support

Fowler, Thomas B., and Daniel Kuebler. *The Evolution Controversy: A Survey of Competing Theories.* Grand Rapids: Baker Academic, 2007.

Summary and Conclusions

The purpose of this book has been to introduce the reader to a careful reconsideration of the nature of Genesis 1. I have proposed that the most careful, responsible reading of the text will proceed with the understanding that it is ancient literature, not modern science. When we read the text in the context of the ancient world we discover that what the author truly intended to communicate, and what his audience would have clearly understood, is far different from what has been traditionally understood about the passage.

The position that I have proposed regarding Genesis 1 may be designated the *cosmic temple inauguration* view. This label picks up the most important aspect of the view: that the cosmos is being given its functions as God's temple, where he has taken up his residence and from where he runs the cosmos. This world is his headquarters.

The most distinguishing feature of this view is the suggestion that, as in the rest of the ancient world, the Israelites were much more attuned to the functions of the cosmos than to the material

of the cosmos. The functions of the world were more important to them and more interesting to them. They had little concern for the material structures; significance lay in who was in charge and made it work. As a result, Genesis 1 has been presented as an account of functional origins (specifically functioning for people) rather than an account of material origins (as we have been generally inclined to read it). As an account of functional origins, it offers no clear information about material origins.

The key features of this interpretation include most prominently:

- The Hebrew word translated "create" *(bārāʾ)* concerns assigning functions.
- The account begins in verse 2 with no functions (rather than with no material).
- The first three days pertain to the three major functions of life: time, weather, food.
- Days four to six pertain to functionaries in the cosmos being assigned their roles and spheres.
- The recurring comment that "it is good" refers to functionality (relative to people).
- The temple aspect is evident in the climax of day seven when God rests—an activity in a temple.

The account can then be seen to be a seven-day inauguration of the cosmic temple, setting up its functions for the benefit of humanity, with God dwelling in relationship with his creatures.

This proposed reading of Genesis 1 then led to a consideration of the implications for thinking about theology, evolution and Intelligent Design. If Genesis 1 is not an account of material origins, then it offers no mechanism for material origins, and we may safely look to science to consider what it suggests for such mechanisms. We may find the theories proposed by scientists to be convincing

or not, but we cannot on the basis of Genesis 1 object to any mechanism they offer. The theological key is that whatever science proposes that is deemed substantial, our response is, "Fine, that helps me see the handiwork of God." Accepting at least some of the components of biological evolution as representing the handiwork of God, we could propose a mechanism for material origins designated *teleological evolution* meaning that evolutionary processes may well describe some aspects of origins (noting that human origins need to be discussed separately), even though much controversy still exists about how evolutionary changes took place. The use of the adjective *teleological* differentiates this view from standard Neo-Darwinism, as teleology affirms the conviction that the process understands material origins as God's creative work with a purpose and a goal. Consequently we are not surprised that there are evidences of design.

We proposed that this view is not only exegetically sound, it is also theologically robust and actually strengthens our theology of creation. With confidence in reading Genesis 1 as supported by the original context, and the confidence in the theological vibrancy of our commitment, we have discovered several advantages:

1. When discussing our faith with skeptics, we need not fear the science discussion. We can relax and respond to any proposal they make with, "Yes, but there is no reason God could not have been involved in that process." The supposed conflict between science and faith is often simply a misunderstanding. There is, in fact, evidence that the conflict was promoted from the science side before it was ever taken up from the faith side.[1]
2. A second advantage is that by holding the cosmic temple inauguration view of Genesis and the teleological evolution view of material origins we may be able to curb the constant

attrition of faith that takes place as students interested in science have been told that they have to choose between science and faith. Such a choice is not necessary.

3. A third advantage is that we may begin refocusing our concerns about public education. Rather than trying to push the agenda that young-earth creationism or Intelligent Design needs to be taught in the schools, we can focus on demanding that metaphysical naturalism, a matter of belief rather than science, *not* be bundled together with the teaching of evolution. We can call schools, teachers and textbook publishers to account for the ways that they insert dysteleology (which is not science, but belief) into the curriculum. Furthermore public education should be interested in teaching evolution with all of its warts and problems, and not overstating the case.

The concern of this book is neither to tell scientists how they should or should not do science, nor to determine what scientific conclusions are right or wrong. It should be noted that this book is *not* promoting evolution. The issue I have attempted to approach concerns what scientific ideas or conclusions that the believer who wants to take the Genesis account seriously is obliged to reject. Is there *science* that is unacceptable in biblical/theological terms? Or are only the metaphysical implications adopted by some scientists unacceptable? Is it the Genesis account that serious scientists are compelled to reject? Or only the implications of some traditional interpretations? Biological evolution is the reigning paradigm, so we have asked whether this view requires the believer to compromise theology or biblical teaching. We have concluded that there is nothing intrinsic to the scientific details (differentiated from the metaphysical implications that some draw) that would require compromise.

Scientists should be committed to refining, modifying and

even overhauling or overthrowing any reigning paradigm that is proven inadequate. This is the nature of scientific inquiry. Having said that, whatever aspects of evolution that continue to provide the best explanation for what we observe should not, in most cases, be objectionable for Christians. In promoting the theological position in the Bible and the interpretation of Genesis 1 presented here, there is no reason to believe that biological evolution teaches something contradictory to the Bible (though some evolutionists are proponents of metaphysical conclusions that contradict the Bible). Believing in the Bible does not require us to reject the findings of biological evolution, though neither does it give us reason to promote biological evolution. Biological evolution is not the enemy of the Bible and theology; it is superfluous to the Bible and theology. The same could be said for the big bang and for the fossil record.

The view presented here presents a way forward through the morass created by the entrenched positions of Neo-Darwinian evolution and the commitment to Scripture and sound theology. The problem is well articulated by Fowler and Kuebler:

> The ante has been raised so high by the polemical nature of the controversy that resolution in favor of one school will have catastrophic implications for the other. On the one hand, the scientific community by and large, including the National Academy of Sciences, has staked the prestige of science on a particular theory with considerable explanatory power but known problems, in part because it is consistent with a naturalistic philosophy. On the other hand, Creationists have for all intents and purposes staked the truth of their religion on the falsity of that same theory, because of the perceived need for a literal interpretation of the Bible. Clearly, neither the proponents of Creationism nor those of

> Neo-Darwinism can permit their side to lose or even give ground, regardless of the facts; the extra-scientific stakes for both are just too high.[2]

In the view presented in this book, neither camp must "give ground," but they both need to be willing to let go of their polemical antagonism. Neo-Darwinism proponents need not make any concessions about what empirical science proposes for material origins. They only have to stop promoting dysteleology as if it were an essential corollary to the science. They also have to stop acting as if Neo-Darwinism has no flaws and no need of modification.[3] Creationists need not give up their theology of God's total involvement in creation, nor do they need give up a "literal" reading of Genesis 1. They only have to acknowledge that traditional interpretations or understandings of English words do not necessarily constitute the most faithful reading of the text. We are *not* proposing that readers of the Bible back off to a figurative or simply literary reading of Genesis 1. We would suggest, instead, that the reading this book proposes is precisely what the Genesis author and audience would have understood.

Finally, both sides need to give up their stubborn antagonism. As Gerald Runkle writes in his book *Good Thinking:*

> It is the mark of stubborn and dogmatic persons to be oblivious to the need either to test their own beliefs or to recognize the successful tests that opposing beliefs have undergone. Copernicus caused widespread consternation when he suggested that the earth revolved around the sun. Though he had impressive evidence for his theory, it was received in ill humor by most religious groups. Martin Luther complained: "People give ear to an upstart astrologer who strove to show that the earth revolved, not the heavens or the firmament, the sun and the moon. . . . This fool wishes to re-

> verse the entire science of astronomy; but the sacred Scripture tells us that Joshua commanded the sun to stand still and not the earth."[4]

We must keep in mind that we are presumptuous if we consider our interpretations of Scripture to have the same authority as Scripture itself. Nobody is an infallible interpreter, and we must always stand ready to reconsider our interpretations in light of new information. We must not let our interpretations stand in the place of Scripture's authority and thus risk misrepresenting God's revelation. We are willing to bind reason if our faith calls for belief where reason fails. But we are also people who in faith seek learning. What we learn may cause us to reconsider interpretations of Scripture, but need never cause us to question the intrinsic authority or nature of Scripture.

FAQs

Q: When and how did God create the material world?
A: According to the interpretation offered in this book, the Bible does not tell us, so we are left to figure it out as best we can with the intellectual capacity and other tools that God gave us. But the material world was created by him.

Q: Where do the dinosaurs and fossil "homo" specimens fit in?
A: In the view presented in this book, these creatures could be part of the prefunctional cosmos—part of the long stage of development that I would include in the material phase. Since the material phase precedes the seven days of Genesis 1, these would all be relegated to the obscure and distant past. The anthropological specimens would not be viewed as humans in the image of God. They would not be assessed morally (any more than an animal would), and they were subject to death as any animal was. Most did not survive alongside the humans that the Bible discusses, and others would have died off early.

Q: Isn't this just really a dodge to accommodate evolution?

A: The interpretation set forth in this book arose out of my desire to fully understand the biblical text. Understanding evolution and its role is a much lower value. Evolution represents the current scientific consensus to explain the many observations that have been made in paleontology, genetics, zoology, biochemistry, ecology and so on. The question is how much of what is involved in biological evolution runs counter to what I understand to be biblical claims and theological realities. In the interpretation of the text that I have offered, very little found in evolutionary theory would be objectionable, though certainly some of the metaphysical claims of evolution remain unacceptable.

Q: Why don't you want to just read the text literally?
A: I believe that this *is* a literal reading. A literal reading requires an understanding of the Hebrew language and the Israelite culture. I believe that the reading that I have offered is the most literal reading possible at this point. Someone who claims a "literal" reading based on their thinking about the English word "create" may not be reading the text literally at all, because the English word is of little significance in the discussion.

Q: What would people have seen if they were there as eyewitnesses (i.e., what "really happened") on these days?
A: We overrate eyewitnesses in our culture. The Bible is much more interested in understanding what God did rather than what an eyewitness would see. For example, an eyewitness would have seen the waters of the Red Sea part, but would have no physical evidence that God did it. Genesis 1 is an account of creation intended to convey realities about the origins of the cosmos and God's role in it and his purpose for it. Most importantly it is designed to help the reader understand that the cosmos should be understood as a temple that God has set up to operate for people

as he dwells in their midst. The perspective of an eyewitness would be inadequate and too limited to be of any good. Genesis 1 is not intended to be an eyewitness account.

Q: Why can't Genesis 1 be both functional and material?
A: Theoretically it could be both. But assuming that we simply *must* have a material account if we are going to say anything meaningful is cultural imperialism. We cannot demand that the text speak to us in our terms. Just as we cannot demand a material account, we cannot assume a material account just because that is most natural to us and answers the questions we most desire to ask. We must look to the text to inform us of its perspective. In my judgment, there is little in the text that commends it as a material account and much that speaks against it. (See pp. 93-94.)

Q: If this is the "right" reading, why didn't we know about it until now?
A: While this reading is initially based on observations from the biblical text (as opposed to observations about the ancient worldview), without an understanding of the ancient worldview, it would have been difficult to ask the questions that have led to this position and nearly impossible to provide the answers to the questions that we have proposed. The worldview of antiquity was lost to us as thinking changed over thousands of years, and the language and literature of the ancient world was buried in the sands of the Middle East. It was only with the decipherment of the ancient languages and the recovery of their texts that windows were again opened to an understanding of an ancient worldview that was the backdrop of the biblical world. This literature and the resulting knowledge has made it possible to recover the ways of thinking that were prominent in the ancient world and has given us new insight into some difficult biblical texts (see my *Ancient*

Near Eastern Thought and the Old Testament [Grand Rapids: Baker Academic, 2006]).

Q: Why would God make it so difficult for me to understand his Word?
A: Given God's decision to communicate, he had to choose one language and culture to communicate to, which means that every other language and culture has their work cut out for them. As readers from a different language and culture, we have to try to penetrate the original language and culture if we are to receive the maximum benefits of God's revelation. We also need to seek greater understanding when we are confronted with information from outside the Bible (whether ancient or modern) and want to figure out how it integrates into what we believe the Bible is saying. It is relieving to recognize that the basics of God's revelation of himself (including his Creator role) are easily skimmed off the surface, but it is not surprising that God's Word contains infinite depth and that it should require constant attention to study with all the tools we have available. God is not superficial, and we should expect that knowledge of him and his Word would be mined rather than simply absorbed. This means that all of us will be dependent on others with particular skills to help us succeed in the enterprise of interpretation. This is not elitism; it is the interdependence of the people of God as they work together in community to serve one another with the gifts they have.

Q: How can this view of Genesis be taught to children in Sunday school and Christian elementary schools?
A: The most important aspects of Genesis 1 to emphasize for children is that God was involved at every level and that he is responsible for setting up the world so that it works. This is the theological side of the question. On the textual side of the question, when

Genesis 1 is the basis for a Bible story, we can emphasize what is most important: functions and operations. The teacher would not need to get into the issue of Genesis 1 not being an account of material origins. That could come at later levels of study. It would be important, however, not to criticize evolution as contradictory to the Bible. Rather statements can be made that whatever processes were involved, God was controlling those processes.

Notes

Proposition 1: Genesis 1 Is Ancient Cosmology

[1]For examples of ancient thought in numerous categories of science, see Denis Lamoureux, *Evolutionary Creation* (Eugene, Ore.: Wipf and Stock, 2008), pp. 105-47.

[2]One of the most common examples given by those who suggest there is a latent scientific consideration is that Is 40:22 posits a spherical earth. This cannot be sustained because its terminology only indicates a disk, not a sphere.

[3]Richard Bube, *The Human Quest* (Waco, Tex.: Word, 1971), pp. 26-27.

[4]See the contrast between the extremes of deism and micromanagement discussed in Terence E. Fretheim, *God and World in the Old Testament: A Relational Theology of Creation* (Nashville: Abingdon, 2005), pp. 7, 22-24.

[5]This observation came from my student Jeremey Houlton.

Proposition 2: Ancient Cosmology Is Function Oriented

[1]For more extensive summary and discussion, see John Walton, "Creation," in *Dictionary of the Old Testament: Pentateuch,* ed. T. Desmond Alexander and David W. Baker (Downers Grove, Ill.: InterVarsity Press, 2003), pp. 155-68.

[2]For a good treatment of the ancient Near Eastern creation texts see Richard Clifford, *Creation Accounts in the Ancient Near East and in the Bible,* Catholic Biblical Quarterly Monograph Series 26 (Washington, D.C.: Catholic Biblical Association, 1994).

[3]Ibid., p. 28, translated into English from J. van Dijk's French translation in "Existe-t-il un 'Poème de la Création' Sumérien?" in *Kramer Anniversary Volume: Cuneiform Studies in Honor of Samuel Noah Kramer,* ed. B. Eichler et al. (Neukirchen-Vluyn: Butzon & Bercker, 1976), pp. 125-33.

[4]James P. Allen, *Genesis in Egypt: The Philosophy of Ancient Egyptian Creation Accounts* (New Haven, Conn.: Yale Egyptological Seminar, 1988), pp. 57-58: "Creation is the process through which the One became the Many."

[5]Coffin Texts, spell 76, translation by James Allen, in *Context of Scripture* 1.6, ed. W. Hallo and K. L. Younger (Leiden: Brill, 1997), p. 10.

[6]Ibid., p. 16.

[7]Harry A. Hoffner Jr., "Song of Ullikummi," in *Hittite Myths,* Society of Biblical Literature Writings from the Ancient World 2 (Atlanta: Scholars Press, 1990), p. 59, §61. The speaker is Ubelluri, a god similar to Atlas in Greek mythology, who holds up the cosmos from his place in the netherworld.

[8]Translation from Miriam Lichtheim, *Ancient Egyptian Literature* (Berkeley: University of California Press, 1980), 3:210-11.

[9]See Benjamin R. Foster, *Before the Muses: An Anthology of Akkadian Literature,* 3rd ed. (Bethesda, Md.: CDL Press, 2005), p. 464; Wayne Horowitz, *Mesopotamian Cosmic Geography* (Winona Lake, Ind.: Eisenbrauns, 1998), pp. 117-18.

[10]For this interpretation see Horowitz, *Mesopotamian Cosmic Geography,* p. 117.

[11]*The Debate Between Winter and Summer* 5.3.3, lines 1-11 <etcsl.orinst.ox.ac.uk>.

[12]For the machine vs. kingdom contrast see John Stek, "What Says the Scripture?" in *Portraits of Creation,* ed. H. J. van Till (Grand Rapids: Eerdmans, 1990), p. 255.

Proposition 3: "Create" (Hebrew *bārāʾ*) Concerns Functions

[1]One might claim that this puts us at the mercy of Hebrew scholars, but remember, it was Hebrew scholars who gave us the English verb "create" to begin with in our translations, so nothing has changed, we have just faced reality.

[2]From a practical standpoint, we know that this is true. Unfortunately, sometimes when we get to scholarly analysis we forget how the world of words generally works and try to use etymology rather than usage, even though we know that in the language we speak, etymology is an unreliable guide to meaning. We know that "awful" does not mean "full of awe" and that "understand" does not mean "to stand under." We must resist the temptation to use etymology in word analysis. The only reliable guide is usage.

[3]For a discussion with examples and a bit more linguistic detail see John Walton, "Principles for Productive Word Study," in *The New International Dictionary of Old Testament Theology and Exegesis,* ed. W. VanGemeren (Grand Rapids: Zondervan, 1997), 1:161-71.

[4]Direct objects in the Dead Sea Scrolls include: vault, light, morning, evening, age, spirit, spice, treasury, sanctuary, people, deed, righteous one, wicked one, flesh, evil and shame. See full citations in *Dictionary of Classical Hebrew,* ed. D. J. A. Clines (Sheffield, U.K.: Sheffield Academic Press, 1993-2001), 2:258-59; and discussion in H. Ringgren, "ברא *Bara*ʾ," *Theological Dictionary of the Old Testament* (Grand Rapids: Eerdmans, 1974-), 2:249. The study of the objects with similar conclusions was done by John Stek, "What Says the Scripture?" in *Portraits of Creation,* ed. H. J. van Till (Grand Rapids: Eerdmans, 1990), pp. 203-65, see particularly p. 208. The conclusion he reaches is that "In biblical language, *bara*ʾ affirms of some existent reality *only that God conceived, willed, and effected it*" (p. 213). He also catalogs biblical references where *bārāʾ* involves providential processes over time (p. 212).

[5]See Stek, "What Says the Scripture?" pp. 203-65 (especially p. 208).

[6]It should be noted, however, that in a large percentage of the cases where the usage is ambiguous, a further explanation is offered that

indicates a functional interest (noted in the last column).

[7]Our discussion here can only be summary. For detailed discussion see John Walton, *Genesis,* NIV Application Commentary (Grand Rapids: Zondervan, 2001), pp. 67-70; John Walton, *Genesis One as Ancient Cosmology* (Winona Lake, Ind.: Eisenbrauns, forthcoming).

[8]John Sailhamer, *Genesis Unbound* (Sisters, Ore.: Multnomah, 1996), p. 38. Detailed discussion may be found in Sailhamer's Genesis commentary in the *Expositor's Bible Commentary,* ed. F. E. Gaebelein (Grand Rapids: Zondervan, 1990), 2:20-23, and a summary by Bill Arnold in the article on *rēšît* in *New International Dictionary of Old Testament Theology and Exegesis,* ed. W. A. VanGemeren (Grand Rapids: Zondervan, 1997), 3:1025-26.

Proposition 4: The Beginning State in Genesis 1 Is Nonfunctional

[1]David Tsumura, *Creation and Destruction* (Winona Lake, Ind.: Eisenbrauns, 2005), p. 35.

[2]The word that NIV renders "northern (skies)" is *ṣāpôn,* the Hebrew word for "north" by virtue of Mt. Zaphon, which is in the north (see Ps 48:2 and Is 14:13). More importantly, it refers to the place where the divine council meets and therefore serves as a reference to heaven. This is confirmed by the use of the verb "stretched out," which in cosmological texts in the Bible is an activity connected to the heavens. So as the North (the place where the heavenly assembly meets) is stretched out over *tōhû,* the earth is suspended over X (NIV "nothing"). Psalm 104:2-3 indicates that the heavens are stretched out over the heavenly cosmic waters (the waters above). Psalm 24:1-2 tells us that the earth is founded on the cosmic waters (cf. Ps 136:6).

[3]Erik Hornung, *Conceptions of God in Ancient Egypt* (Ithaca, N.Y.: Cornell University Press, 1982), pp. 174-76.

[4]Ibid., p. 177.

[5]Ibid., p. 171; Siegfried Morenz, *Egyptian Religion* (Ithaca, N.Y.: Cornell University Press, 1973), p. 173. Texts include Pyramid Text 1208c (Morenz, *Egyptian Religion,* p. 173); Coffin Texts 4, 36 (spell 286) (Morenz, *Egyptian Religion,* p. 173); Heliopolis (Morenz, *Egyptian*

Religion, p. 173); Stele Leyden 5.12 (Morenz, *Egyptian Religion,* p. 173); "Ptah, Lord of maat . . . who lifted up the sky and created things that be" (Morenz, *Egyptian Religion,* p. 174); Memphite Theology, line 14: Ptah, creating through the Ennead, is identified as the one who "pronounced the identity of everything."

[6]NBC refers to the Nies Babylonian Collection, from Yale University.

[7]Richard Clifford, *Creation Accounts in the Ancient Near East and in the Bible,* Catholic Biblical Quarterly Monograph Series 26 (Washington, D.C.: Catholic Biblical Association, 1994), p. 28; translated into English from J. van Dijk's French translation in "Existe-t-il un 'Poème de la Création' Sumérien?" in *Kramer Anniversary Volume: Cuneiform Studies in Honor of Samuel Noah Kramer,* ed. B. Eichler et al. (Neukirchen-Vluyn: Butzon & Bercker, 1976), pp. 125-33.

Proposition 5: Days One to Three in Genesis 1
Establish Functions

[1]See extensive discussion of all of the different categories of metonymy and the biblical occurrences in E. W. Bullinger, *Figures of Speech Used in the Bible* (Grand Rapids: Baker, 1968), pp. 538-608.

[2]This makes even more sense when we recognize that darkness is not an object either to us or in the ancient world.

[3]P. Seely, "The Firmament and the Water Above," *Westminster Theological Journal* 54 (1992): 31-46.

[4]Papyrus Insinger, *Ancient Egyptian Literature,* trans. Miriam Lichtheim (Berkeley: University of California Press, 1980), 3:210.

[5]See Benjamin R. Foster, *Before the Muses: An Anthology of Akkadian Literature,* 3rd ed. (Bethesda, Md.: CDL Press, 2005), pp. 436-86.

[6]John Walton, *Genesis,* NIV Application Commentary (Grand Rapids: Zondervan, 2001), pp. 344-45.

Proposition 6: Days Four to Six in Genesis 1
Install Functionaries

[1]For further discussion see John Walton, *Genesis,* NIV Application Commentary (Grand Rapids: Zondervan, 2001), pp. 122-23, drawing

on the work of W. Vogels, "The Cultic and Civil Calendars of the Fourth Day of Creation (Gen 1,14b)," *Scandinavian Journal of the Old Testament* 11 (1997): 163-80.

[2]Richard Clifford, *Creation Accounts in the Ancient Near East and in the Bible,* Catholic Biblical Quarterly Monograph Series 26 (Washington, D.C.: Catholic Biblical Association, 1994), p. 67. In the Akkadian version the three named gods charge the great astral gods to produce day and to assure the regular sequence of months for astrological observation.

[3]I am grateful to my student Liesel Mindrebo for pointing out this pattern. Important other uses of this verb in cosmology contexts can be found in Ex 34:10; 1 Kings 12:32-33; Job 9:9; Is 41:17-20; 45:7; Jer 38:16; see Walton, *Genesis,* pp. 124-25. For my detailed lexical analysis of this verb, see John Walton, *Genesis One as Ancient Cosmology* (Winona Lake, Ind.: Eisenbrauns, forthcoming).

[4]The Exploits of Ninurta 1.6.2 <etcsl.orinst.ox.ac.uk>.

[5]It should be noted that the function of an archetype does not rule out their historical (or biological) reality. In Romans 5 Jesus stands as an archetype alongside Adam. Abraham is identified as an archetype of people of faith. These are historical figures who are being used in the literature for their archetypal significance.

Proposition 7: Divine Rest Is in a Temple

[1]In Ex 31:17 there is also an indication that God "refreshed himself."

[2]Temple Hymn of Keš 4.80.2, D.58A-F <etcsl.orinst.ox.ac.uk>.

[3]Translations from *The Context of Scripture,* ed. W. Hallo and K. L. Younger (Leiden: Brill, 1997), 1:111.

[4]Notice also how all the set-up tasks referred to are functional rather than material in nature. That is, there was no discussion of the material phase of manufacturing the tower or the cables, or of writing the software.

Proposition 8: The Cosmos Is a Temple

[1]It is difficult to date the piece. The copy is Seleucid (Richard Clifford, *Creation Accounts in the Ancient Near East and in the Bible,* Catholic

Biblical Quarterly Monograph Series 26 [Washington, D.C.: Catholic Biblical Association, 1994], p. 62), but Wayne Horowitz considers it to derive from a Sumerian original (*Mesopotamian Cosmic Geography* [Winona Lake, Ind.: Eisenbrauns, 1998], pp. 129-31).

[2]Benjamin R. Foster, *Before the Muses: An Anthology of Akkadian Literature,* 3rd ed. (Bethesda, Md.: CDL Press, 2005), p. 488.

[3]Richard Clifford, *Creation Accounts in the Ancient Near East and in the Bible,* Catholic Biblical Quarterly Monograph Series 26 (Washington, D.C.: Catholic Biblical Association, 1994), p. 61.

[4]J. Black et al., *The Literature of Ancient Sumer* (Oxford: Oxford University Press, 2004), pp. 325-30, lines 13-16 cited, but the ideas are repeated throughout the piece.

[5]Gudea B.xx.8-11 translated by Thorkild Jacobsen, *The Harps That Once . . .* (New Haven, Conn.: Yale University Press, 1987), pp. 441-42.

[6]Jan Assmann, *The Search for God in Ancient Egypt* (Ithaca, N.Y.: Cornell University Press, 2001), p. 38; Cf. Clifford, *Creation Accounts,* pp. 105-6; See also John Lundquist, "What Is a Temple? A Preliminary Typology," in *The Quest for the Kingdom of God,* ed. H. Huffman (Winona Lake, Ind.: Eisenbrauns, 1983), p. 208; Othmar Keel, *Symbolism of the Biblical World* (New York: Seabury Press, 1978), p. 113, indicates that this is true of both Egypt and Mesopotamia.

[7]Temple Hymns 4.80.1 <etcsl.orinst.ox.ac.uk>.

[8]Assmann, *Search for God,* p. 37 (italics in original).

[9]Ibid., pp. 35-36.

[10]L. R. Fisher, "Creation at Ugarit and in the Old Testament," *Vetus Testamentum* 15 (1965): 320.

[11]Josephus *The Jewish War* 3, 7.7, trans. H. St. J. Thackery, Loeb Classical Library (Cambridge, Mass.: Harvard University Press, 1957), p. 403.

[12]Jon Levenson, "The Temple and the World," *Journal of Religion* 64 (1984): 295, even suggests tentatively that there is some possibility that the temple in Jerusalem may have been called by the name "Heaven and Earth." Temples in the ancient world had names, and many of them refer to the temple's cosmic significance, e.g., the Temple at Nippur, "Duranki," which means, "Bond of Heaven and Earth," and at

Babylon, "Etemenanki," which means, "Foundation of Heaven and Earth." This could be supported from verses such as Is 65:17-18 in which a creation of a new heaven and new earth is paralleled by creating Jerusalem, soon followed up in Is 66:1 with the picture of the cosmos as God's temple. The idea was suggested to Levenson in an article by G. Ahlstrom, "'Heaven on Earth'—at Hazor and Arad," in *Religious Syncretism in Antiquity,* ed. B. A. Pearson (Missoula, Mont.: Scholars Press, 1975), pp. 67-83. If this view could be substantiated, Gen 1:1 would take on a new level of meaning as a reference to the cosmic temple.

[13]Gordon J. Wenham, "Sanctuary Symbolism in the Garden of Eden Story," in *Proceedings of the Ninth World Congress of Jewish Studies* (Jerusalem: World Union of Jewish Studies, 1986), p. 19.

[14]Examples include the façade of the temple of Inanna in Uruk, which pictures guardian beings surrounded by the flow of streams; the investiture fresco at Mari, and many statues that show the individual holding a jar from which waters flow.

[15]Victor Hurowitz, *I Have Built You an Exalted House,* Journal for the Study of the Old Testament Supplement Series 115 (Sheffield, U.K.: JSOT Press, 1992), p. 242.

[16]Levenson, "Temple and the World," points out these examples, and in Isaiah 6 he goes even further to suggest that the word here translated "full" is not an adjective, but a noun, "fullness," in which case the proper translation should be "The fullness of the whole earth is his glory" (p. 289).

Proposition 9: The Sevens Days of Genesis 1 Relate to the Cosmic Temple Inauguration

[1]Jon Levenson, "The Temple and the World," *Journal of Religion* 64 (1984): 288-89; Victor Hurowitz, *I Have Built You an Exalted House,* Journal for the Study of the Old Testament Supplement Series 115 (Sheffield, U.K.: JSOT Press, 1992), pp. 260-61, 275-76. The number seven is prevalent, though variations appear (e.g., Esarhaddon's dedication of his temple in Assur over three days, and Assurnasirpal's

dedication of Kalhu over ten days). Hurowitz's appendix on pp. 280-82 provides the entire list of over forty texts. Another striking seven-day festival is an Old Babylonian ritual from Larsa, see See E. C. Kingsbury, "A Seven Day Ritual in the Old Babylonian Cult at Larsa," *Hebrew Union College Annual* 34 (1963): 1-34. There is no evidence that this is a temple dedication ritual; in fact each day focuses on a different god. Intriguingly the rituals for each new day also begin in the evening (p. 26). On p. 27 Kingsbury lists several other seven-day rituals.

[2]Most of Gudea Cylinder B is taken up with the installation of functionaries.

[3]Gudea B.vi.11-16, translation by R. Averbeck, from *The Context of Scripture,* ed. W. Hallo and K. L. Younger (Leiden: Brill, 1997), 2:155.

[4]Moshe Weinfeld, "Sabbath, Temple and the Enthronement of the Lord—The Problem of the Sitz im Leben of Genesis 1.1—2.3," in *Mélanges bibliques et orientaux en l'honneur de M. Henri Cazelles,* ed. A. Caquot and M. Delcor, Alter Orient und Altes Testament 212 (Neukirchener-Vluyn: Neukirchener; Kevelaer: Butzon & Bercker, 1981), pp. 502-12.

[5]Concordism attempts to read modern scientific meaning into the ancient words and texts. We will discuss the hermeneutical problems with this approach, that is, its problems with interpreting the biblical text, see pp. 104-7.

Proposition 10: The Seven Days of Genesis 1 Do Not Concern Material Origins

[1]See pp. 53, 60.

[2]Some might contend that the Hebrew verb *ʿāśâ* ("make" vv. 7, 16, 25, 26) and *nātan* ("set" v. 17) provide evidence for the material nature of the text. These discussions are more complex and will be treated at length in John Walton, *Genesis One as Ancient Cosmology* (Winona Lake, Ind.: Eisenbrauns, forthcoming). To summarize, *ʿāśa* is often translated "do" (e.g., one's business), and the evidence favors that understanding here

(cf. the use in Ex 20:8-11). In similar fashion, *nātan* often means "appoint," and that suits this context well.

[3]Even more questionable would be the decision to oppose the possibility of an old earth simply because that would give time for evolution. That would be folly—evolution would need to stand or fall on its own merits.

[4]This would be similar to the fact that when God said "Do not murder" on Mt. Sinai, it is not as if before then everyone murdered whomever they wanted. It was not that the law was new but that it was put in a new context of God's covenant. In a similar manner, it is not that the sun was not previously shining but now it is seen in a different context—the context of the cosmic temple.

Proposition 12: Other Theories of Genesis 1 Either Go Too Far or Not Far Enough

[1]For a balanced popular treatment see Gordon Glover, *Beyond the Firmament* (Chesapeake, Va.: Watertree Press, 2007); for a more in-depth look at the strengths and weaknesses of the position and the scientific challenges it faces, see Thomas B. Fowler and Daniel Kuebler, *The Evolution Controversy: A Survey of Competing Theories* (Grand Rapids: Baker Academic, 2007).

[2]Hugh Ross, *The Genesis Question: Scientific Advances and the Accuracy of Genesis* (Colorado Springs, Colo.: NavPress, 2001), p. 9.

[3]Ibid., pp. 24-34.

[4]Ibid., p. 65. Against others in this camp, Ross believes that the sequence of the seven days can be sustained in the scientific events of cosmology.

[5]C. John Collins, *Genesis 1—4* (Phillipsburg, N.J.: P & R, 2006), p. 73.

[6]For a fuller presentation of the framework hypothesis as well as a fair analysis of the other positions, see Henri Blocher, *In the Beginning* (Downers Grove, Ill.: InterVarsity Press, 1984), pp. 39-59.

[7]The various possibilities are presented and analyzed by D. Young, "The Antiquity and the Unity of the Human Race Revisited," *Chris-*

tian Scholar's Review 24, no. 4 (1995): 380-96.

Proposition 13: The Difference Between Origin Accounts in Science and Scripture Is Metaphysical in Nature

[1]This modern distinction was especially championed and articulated by the eighteenth-century philosopher Immanuel Kant.

[2]I wish to thank my colleague Lynn Cohick for this suggestion.

[3]One of the places where this analogy breaks down is that it risks suggesting too distinct a divide between the two layers where no such divide truly exists. Instead the two are fully integrated and in some ways might more resemble a marble cake.

[4]These distinctions are discussed in detail in Denis Lamoureux, *Evolutionary Creation* (Eugene, Ore.: Wipf and Stock, 2008), pp. 69-70.

[5]Perhaps some might claim that the Intelligent Design movement attempts precisely that. This will be discussed in another chapter.

[6]Some may feel that "empirical science" is redundant, but I use the combination just to be sure that I am clear. By *empiricism* I am trying to isolate those aspects of science which value an evidentiary base and seek to focus on that base. In that sense it is distinct from rationalism, though empirical science has always left room for and indeed encouraged rational deductions that are made from an evidentiary base. So, for instance, observations concerning a given artifact may indeed lead to the logical deduction that it was made with a purpose. In a sense this could be an empirical deduction.

[7]For additional discussion and a distinction between "teleological evolution" and "dysteleological evolution" see Lamoureux, *Evolutionary Creation,* pp. 4-5.

[8]Materialism is the view that the material is all there is (bottom layer only). Naturalism describes a cause-and-effect process in scientific terms, with the natural laws as the foundation. Naturalism describes the operation of the bottom layer (sometimes referred to as *methodological naturalism*). Materialism says the bottom layer is all there is (sometimes referred to as *metaphysical naturalism*). Christians need not deny naturalistic operations, but they denounce materialism.

[9]Though the text offers a view of God initially establishing functions in the past, even in that regard its focus is the present and the ongoing future.

Proposition 14: God's Roles as Creator and Sustainer Are Less Different Than We Have Thought

[1]I am grateful to my colleague Robert Bishop for these observations.

[2]Not unlike the ancient Egyptian view in which it happened again each day, though even they differentiated the events on what they referred to as the "first occasion."

[3]Terence Fretheim speaks of a beginning (Originating Creation), a middle (Continuing Creation) and an end (Completing Creation) (Terence E. Fret-heim, *God and World in the Old Testament: A Relational Theology of Creation* [Nashville: Abingdon, 2005], pp. 5-9).

[4]Jürgen Moltmann, *God in Creation: A New Theology of Creation and the Spirit of God* (San Francisco: Harper & Row, 1985), summarized and critiqued by Francis Watson, *Text and Truth* (Grand Rapids: Eerdmans, 1997), pp. 227-36.

[5]Observations and questions posed by Watson, *Text and Truth,* pp. 226-27. In Watson's belief that the "beginning" must be an absolute beginning, he does not consider the possibility that the absolute beginning should be viewed against a functional ontology instead of against a material ontology. This could make a big difference to the implications of the assertion.

[6]This is not an attempt to promote "natural theology," which explores whether God can be perceived in nature without the aid of special revelation. We are unconcerned here with the revelation question as we affirm only that God is at work sustaining the world, however that may be perceived through observation.

[7]Fretheim, *God and World in the Old Testament,* p. 5.

[8]Watson, *Text and Truth,* p. 228.

[9]John Stek, "What Says the Scripture?" in *Portraits of Creation,* ed. H. J. van Till (Grand Rapids: Eerdmans, 1990), pp. 203-65, quote on p. 211. On pp. 242-50 Stek looks in detail at the theological (Reformed)

traditions that have insisted on a sharp break between creation and providence. He points out that their theological concerns are clear as they have sought to insulate God from being the author of evil. But he then points out many biblical texts that show that the Old Testament is more inclined to merge the two (p. 246).

[10]The distinction between *evolution* and *evolutionism* goes as least as far back as C. S. Lewis, "The Funeral of a Great Myth," in *Christian Reflections* (Grand Rapids: Eerdmans, 1967), pp. 82-93 (see especially p. 83). Thus we might suggest that it is not creation and evolution that are at odds, but their ideological cousins, Creationism and Evolutionism.

Proposition 15: Current Debate About Intelligent Design Ultimately Concerns Purpose

[1]Orson Scott Card, *The Call of Earth* (New York: Tor, 1993), p. 138.

[2]There is also a significant mathematical element to their position; see William Dembski, *Intelligent Design* (Downers Grove, Ill.: InterVarsity Press, 1999).

[3]There are alternatives out there such as S. Kauffman, *At Home in the Universe: The Search for the Laws of Self-Organization and Complexity* (Oxford: Oxford University Press, 1996). Kauffman proposes that matter self-organizes, thus making design an expected result intrinsic to the nature of matter and not dependent on a designer.

[4]Thomas B. Fowler and Daniel Kuebler, *The Evolution Controversy* (Grand Rapids: Baker Academic, 2007), pp. 240, 271.

[5]Ibid., p. 237.

[6]Ibid., p. 244.

[7]Ibid., pp. 277-326.

Proposition 16: Scientific Explanations of Origins Can Be Viewed in Light of Purpose, and If So Are Unobjectionable

[1]These have been referred to as "suboptimal." See the discussion in Denis Lamoureux, *Evolutionary Creation* (Eugene, Ore.: Wipf and Stock, 2008), pp. 100-101. He includes items such as the blind spot in

the eye and the inherent instability of the spine.

[2]Undoubtedly many will ask the inevitable question concerning genetic defects, miscarriages and the variety of other things that can go wrong in this process. If this is the handiwork of God, why can't he get it right? This takes us back into the *why* realm, and those are questions for which we are not given answers. The affirmation that we are urged to make is that we trust God's wisdom, as difficult as our circumstances become. This is what the book of Job teaches, as does Ecclesiastes (note Eccles 7:14).

[3]Some press a distinction between macroevolution (change from one species to another) and microevolution (change within a species), and the distinction is not insignificant. Nevertheless in this discussion I would like to focus on the overall concept of evolution.

[4]See the discussion of the range of usage in John Stek, "What Says the Scripture?" in *Portraits of Creation,* ed. H. J. van Till (Grand Rapids: Eerdmans, 1990), pp. 216-20.

[5]For a discussion of this option and others see D. Young, "The Antiquity and the Unity of the Human Race Revisited," *Christian Scholar's Review* 24, no. 4 (1995): 380-96.

[6]Obviously this issue requires much more in-depth treatment but is outside of the focus of this book, which is focused on Genesis 1, not Genesis 2.

Proposition 17: Resulting Theology in This View of Genesis 1 Is Stronger, Not Weaker

[1]In biblical terms we could point to the four-hundred-year delay in giving the promised land to Abraham's descendants (Gen 15), or even to the long wait for the return of Christ. Daniel 9 also offers an example in the long period of time during which restoration of the people of Israel will occur.

[2]Orson Scott Card, *Prentice Alvin* (New York: Tor, 1989), pp. 260-62, excerpts used by permission.

[3]Some paragraphs of this sections have been taken from John Walton and Andrew Hill, *Old Testament Today: A Journey from Original*

Meaning to Contemporary Significance (Grand Rapids: Zondervan, 2004), p. 129.

Proposition 18: Public Science Education Should Be Neutral Regarding Purpose

[1]For my definition of *empiricism* see note 6 in chapter 13 (p. 164).

[2]Not content with an empirically based methodology, metaphysical naturalism mandates the restriction of *reality* to that which is material.

[3]National Association of Biology Teachers, "Statement on Teaching Evolution," *The American Biology Teacher* 58, no. 1 (1996): 61

[4]Ibid. In the list of what they refer to as "tenets of science, evolution and biology education," the NABT statement read: "The diversity of life on earth is the outcome of evolution: an unsupervised, impersonal, unpredictable and natural process of temporal descent with genetic modification that is affected by natural selection, chance, historical contingencies and changing environments."

[5]*Methodological naturalism* refers to the self-imposed restriction that no appeal will be made to supernatural agency. It accepts the premise that mechanisms themselves are dysteleological without extrapolating those operating principles to the larger metaphysical enterprise.

[6]Revised statement from 2004 can be found at <sci.tech-archive.net/Archive/sci.bio.evolution/2006-01/msg00177.html> or another site <www.natscience.com/Uwe/Forum.aspx/evolution/2103/National-Association-of-Biology-Teachers>.

[7]Evidenced in the statements from the NABT, which describe evolution as an important natural process explained by valid scientific principles. They are anxious to "separate science from non-scientific ways of knowing, including those with a supernatural basis such as creationism. Whether called 'creation science,' 'scientific creationism,' 'intelligent design theory,' 'young earth theory,' or some other synonym, creation beliefs have no place in the science classroom. Explanations employing nonnaturalistic or supernatural events, whether or not explicit reference is made to a supernatural being, are outside the

realm of science and not part of a valid science curriculum" (National Association of Biology Teachers, "Statement on Teaching Evolution," p. 61).

[8]Ibid.

[9]Recognizing that what appears to be irreducibly complex may or may not actually be so.

[10]Advocates of design may be able to claim that it contains no theistic a priori, but no claim of teleological neutrality can be sustained.

[11]On the other hand, metaphysical issues cannot and should not be entirely eliminated. Material ontology and the methodological naturalism associated with empiricism are foundational for science, so those particular metaphysical positions need to be assumed.

[12]The deduction that something is likely to be the result of design or random development is itself a stage of rationalism that is the normal result of empirical science. As such it stands as metaphysically transitionary, with the real metaphysics being engaged only when the discussion moves to the nature of the designer or the absence of one.

[13]"Questions About Science Education Policy," question 3, on the Discovery Institute's website (August 13, 2008) <www.discovery.org/csc/topQuestions.php>.

[14]Ibid.

[15]See Hugh Gauch, *Scientific Method in Practice* (Cambridge: Cambridge University Press, 2002).

[16]Of course it must be recognized that "teleological neutrality" may be an impossibility. At least fairhandedness ought to be expected.

[17]Thomas B. Fowler and Daniel Kuebler, *The Evolution Controversy* (Grand Rapids: Baker Academic, 2007), p. 355 (italics theirs).

Summary and Conclusions

[1]See the important article by Timothy Larsen, "'War Is Over, If You Want It': Beyond the Conflict Between Faith and Science," *Perspectives on Science and Christian Faith* 60, no. 3 (2008): 147-55.

[2]Thomas B. Fowler and Daniel Kuebler, *The Evolution Controversy* (Grand Rapids: Baker Academic, 2007), p. 354.

[3]This despite the inadequacy of natural selection and random mutation to offer comprehensive mechanisms for the type of prolonged change over time evidenced in the fossil record and other places. See details in Fowler and Kuebler, *Evolution Controversy,* chapter 5, helpfully summarized on pp. 346-47 and the table on p. 348.

[4]Gerald Runkle, *Good Thinking,* 2nd ed. (Austin, Tex.: Holt, Rinehart & Winston, 1981), p. 271.

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