
INERRANCY STUDIES AND THE OLD TESTAMENT: “ANCIENT SCIENCE” IN THE HEBREW BIBLE

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1. INTRODUCTION

One of the ways in which the Bible’s truth claims come into view, for better or for worse, is the arena of science and faith. (Another is how the New Testament uses the Old, and many of these principles apply there—but we’ll leave that topic for some other venue!) These discussions might concern the question of God’s action in the world, especially providence and miracle, so the Gospels and Acts will certainly come into play. However, it is fair to say that most of the points of tension come in the Old Testament and concern the first 11 chapters of Genesis, and this has to do with things like *creation*: did it happen, and how long ago, and what processes were involved, is any kind of *evolution* permissible, may we find any kind of empirical coordination with the biblical statements, and so forth. I have written about these matters and will continue to do so.¹

In this paper, I want to tackle a related question, which derives from the assertion that Genesis 1–11 represents “ancient science,” an assertion with a long history, and given prominence in several recent works. Those who make this assertion tend to fall into one of three broad categories: (1) Some think the “science” is *authoritative*, and thus it sets limits on what we may or may not find through our empirical studies and theorizing. (2) Some suppose a milder relationship between the Bible and science and prefer to find ways in which biblical material *anticipates* modern theories, or, perhaps, is *confirmed* by the modern theories. And, finally, (3) some

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think that the “science” is ancient, but now *discredited*, and from this they will draw the conclusion either that we can discard the science as the chaff and look instead for a spiritual principle as the kernel, or else we will simply transcend the ancient picture of the world with our modern knowledge. In some cases, people in this third category think that we may need to revise traditional doctrines in light of the updated science.

I hope, in the long run, to change the minds of people in all of these categories, and I will do so by considering some of the biblical passages that have been said to represent a “primitive” or outmoded view of the world—the idea being that the biblical writers thought this picture was “true.” In fact, part of the impetus for this paper was a conversation with a believing philosopher, who asked, in all sincerity, “How can the biblical account be *true* when it insists on things that we know are false?” Good question!

We have conventionally allowed for the presence of phenomenal, and even of poetical, description but many critiques have pointed out that appeal to these can sound a bit *ad hoc*, an apologetic get-out-of-jail-free card, only invoked to avoid problems. The more literal, the more honest, we are told. I agree that the appeal to these language uses has often been, if not arbitrary, at least highly selective and inconsistent, and thus I sympathize with the critique. I do not think, however, that this is the whole story, because we need an adequate understanding of how language and communication work.

For this venue, I want to relate the discussion of these categories to “inerrancy.” Straightaway there is a problem, since not everyone means the same thing by the word, and members of any of these categories can claim (with varying levels of credibility) that they adhere to inerrancy as the Chicago Statement on Biblical Inerrancy (1978) defines it. The issue concerns God’s *intentions* for the scriptural text. The supplemental Chicago Statement on Biblical Hermeneutics (1982), however, in its Article 22, narrows the field a bit for Genesis:

We affirm that Genesis 1–11 is factual, as is the rest of the book. **We deny** that the teachings of Genesis 1–11 are mythical and that scientific hypotheses about earth history or the origin of humanity may be invoked to overthrow what Scripture teaches about creation.

In this context, it becomes understandable that a consortium of young-earth creationists would like to supplement the Chicago Statement on Inerrancy by making their young-earth reading of Genesis 1–11 the touch-

stone of adhering to inerrancy.² This is understandable, but not desirable—and my discussion here will show *some* of the reasons why I count it undesirable, though a full argument is not my purpose. In any case, the decision of some, such as A. T. B. McGowan, to dismiss the use of the word “inerrancy” and to avoid any sustained discussion of hermeneutical questions, is certainly headed for massive confusion.³

To talk about inerrancy is to talk about truthfulness. We can improve our discussion if we are clear about what we do and do not have a right to mean by that word. My own approach is that we can trust biblical authors to tell us the true story of the world and of God’s people. They show the members of God’s people the right way to embrace that story and to invite others to the embrace.⁴ The notion of inerrancy, then, aims at explaining *why* we take a disposition of trust and cooperation when we look for the Bible to speak from God to us.⁵

There have been other, more “ambitious” notions of inerrancy, however. For example, Lesslie Newbigin had apparently encountered Western missionaries in India (probably North Americans) for whom inerrancy meant “a kind of fundamentalism which seeks to affirm the factual, objective truth of every statement in the Bible and which thinks that if any single factual error were to be admitted, biblical authority would collapse.”⁶ This is why we have to discuss hermeneutics if we wish to talk about truthfulness: in the position Newbigin finds problematic there are factors that I would support, together with an assumed hermeneutic and criterion of truthfulness that is highly worthy of examination—a hermeneutic and criterion that the Chicago Statement does *not* endorse.⁷

In the same vein, C. S. Lewis rejected the term “fundamentalist”:

² See Terry Mortenson and Thane Ury, eds., *Coming to Grips with Genesis: Biblical Authority and the Age of the Earth* (Green Forest, AR: Master, 2008), Appendix, 453–57.

³ A. T. B. McGowan, *The Divine Authenticity of Scripture* (Downers Grove, IL: InterVarsity, 2007), 13–14.

⁴ They do so by understanding the function of traditional doctrines as protecting the way we tell the story—a story that has, broadly, the shape of creation-fall-redemption-consummation. That is why Christian doctrine can readily adapt to the changeover from geocentricity to heliocentricity (and sub-sequent revisions) in astronomy, because it leaves the basic story intact. If a change in doctrines entails a different story, then problems arise.

⁵ I have discussed this a little more in my contribution to Matthew Barrett and Ardel Caneday, eds., *Four Views on the Historical Adam* (Grand Rapids, MI: Zondervan, 2013), 167–75.

⁶ Lesslie Newbigin, *Proper Confidence* (Grand Rapids, MI: Eerdmans, 1995), 85.

⁷ I am allowing that Newbigin has described the view fairly; I have met such people.

I have been suspected of being what is called a fundamentalist. That is because I never regard any narrative as unhistorical simply on the ground that it includes the miraculous. Some people find the miraculous so hard to believe that they cannot imagine any reason for my acceptance of it other than *a prior belief that every sentence of the Old Testament has historical or scientific truth.*⁸

Now, by that definition I am not a "fundamentalist," either—nor, as matter of fact, are most traditionalists. Lewis was clear, here and elsewhere, that his issue of whether to read passages as "historical truth" was a literary judgment about the particular texts. In principle, traditionalists agree with this procedure, even when they might make different literary judgments.

Literary judgment: that is where I want to take this conversation. Specifically, I want to lay hold of some notions from linguistic pragmatics and rhetorical theory to help us know what to mean by attributing "truth" to a text.

2. DEFINING "TRUTH"

As linguists describe things, every act of verbal communication is concerned with more than the transfer of information; the speaker or writer wants to *do* something to or for the audience. Thus, in pragmatics, we differentiate the following three parts:

LOCUTION: the actual form of words spoken

ILLOCUTION: the intended effect of those words (on beliefs, actions, and attitudes)

PERLOCUTION: the actual effect of the words

For example, a father might ask his children during the evening, "Do you know what time it is?" The form and words of the question provide what we call the LOCUTION, and if the locution made up the entire communication, the proper reply would be "yes" or "no." Most people know quite well that this kind of reply would be, in most cases, uncooperative; according to context, the *desired* reply would be something along the lines of, "It is eight o'clock" or "My goodness, we should go watch the baseball game!" or even, "Yes, Dad, I'm almost finished with my homework and I'll be getting to bed soon." The ILLOCUTION, then, would be the goal of eliciting the desired reply and its associated actions (look at the clock, put on the television shows, close the book, etc.) and attitudes. The response Dad received is the PERLOCUTION; and the com-

⁸ C. S. Lewis, *Reflections on the Psalms* (London: Bles, 1958), 109 (italics added).

munication event is “successful” if the actual and desired responses match to an adequate extent.

Although the exact terms *locution*, *illocution*, and *perlocution* may seem to be an innovation, there is nothing mysterious about the distinction. Educated people have known for ages about, say, rhetorical questions. In such a case, the locution (the form of the question) is a way of eliciting a behavioral response from an audience. Probably most questions in the Bible are of this sort: “For if you love those who love you, what reward do you have? Do not even the tax collectors do the same?” (Matt. 5:46) is not a request for information, but a device to shape the disciples’ way of leaning into their world, to define their community identity with a certain set of likes and dislikes. By the same token, our default guess about God’s questions (say, in Gen. 3:9, 11; 4:9) is that they, too, are rhetorical—which means that they intend to offer people an opportunity to do something, rather than express actual ignorance on God’s part. The notion is, therefore, an intuitive one, and it is basic to human interaction.

Mind you, in saying that we have long known these things I am not minimizing the value of contemporary linguistics. The linguistic studies serve to put the intuitions on a sound intellectual footing and serve as well to refine the intuitions. However, these intuitions about rhetoric have been available to those who claim that the only honest reading is the literalistic take on the locution—and thus it is fair for us to call them to account.

A key to communication, then, is to ascertain the relationship between the locution and the illocution. To do this well requires both a social and cultural awareness (such as children learn in a household or school), and a cooperation between speaker and hearer. In this cooperation, the speaker must provide enough clues to his intentions, and the audience should be willing to go beyond the mere form of words, and to do so with enough sympathy with the speaker to perceive what he or she wants—compliance with the speaker’s intentions, of course, is another matter.

I must compress the argument here for the sake of space. I want now to describe what happens between the speaker and the hearer. We have three levels:

1. the cognitive act of conceptualization, in which the author actually holds to what he counts as a truthful description of the things portrayed;
2. the rhetorical and poetical act of characterization, in which the author asks the audience to picture things a certain way; and
3. the illocutionary event of commitment, in which an author not only embraces for himself a particular conceptualization,

but also invites the audience to embrace that conceptualization.

We cannot always say how an author *conceived* of his referents; what we can say is how he *portrayed* them. Further, the portrayal may represent actual *conceptions* of the referents, either the author's or that shared between him and his audience; or, it may represent *conventional* depictions with which the audience is familiar and recognizes as not making scientific claims; or, it may represent a poetic impulse, employing images and analogies. These portrayals represent *communicative goals* (or illocutions), which may sometimes include imparting or reaffirming physical information, but, in normal human usage, focus on other things such as attitudes and actions.

C. S. Lewis gives us an autobiographical example of how conventionality works, particularly of how it does not imply any theory. He tells us how, as a child, he "evolved the theory that a candle-stick was so-called 'because it made the candle *stick* up.'" But, he tells us, "that wasn't why I called it a candlestick. I called it a candlestick because everyone else did."⁹ The communicative goal in using the standard name for something is clear, namely, ready identification of the referent, without drawing attention to the characterization.

Again, for the sake of space, I will get right to it: to be "true" there must be a real referent (even if it is an abstraction such as "goodness" or "conflict"), and the speaker's way of representing the referent should be appropriate both for the referent and for the communication event. Further, a communication event invites the audience to cooperate, and we assume that the audience has some access to the kind of cooperation suited to the event, and that if they do so, they will not be misled.

The word "literal" has come to bedevil our analyses, particularly as it relates to assessing truthfulness. Often, when a person claims to be "literal" he is really advocating a kind of "literalism," which assumes a straightforward relationship between how the speaker or author conceives things to be, how he represents things in his text, and what he is actually affirming and asking his audience to accept. From a linguistic point of view, literalism focuses on the *locution* in the narrowest way, without attending to how it serves the *illocution*.

In the modern era, this kind of literalism is held to be the really honest approach. This preference became prominent due to the work of Benjamin Jowett (1817–1893) and Charles Goodwin (1817–1878) in *Essays and*

⁹ C. S. Lewis, *Studies in Words* (Cambridge: Cambridge University Press, 1967), 11.

Reviews (1860),¹⁰ when they speak of taking biblical writers' words in their "plain sense," this is what they mean—any reference to poetical or phenomenal language is a dodge, as they see it. Their heir in the twentieth century was James Barr, with his several writings on "literality."¹¹

This overall perspective on literalism as truly honest comes with particular clarity in Kenton Sparks's claim that "historical representation maintains a very close relationship between the narrative and actual events."¹² That is, he assumes a close connection between the locution and the author's internal conception, as well as the literary characterization; and the audience is asked to commit to this "literal" take on the referent.

We know from our own experience that this expectation is contrary to ordinary human behavior. That is, ordinary people use round numbers, metaphors, and phenomenal descriptions, and we do not normally suppose that these detract from truthfulness. Gandalf can tell Théoden, "Your fingers would remember their old strength better, if they grasped a sword-hilt," and he is not articulating any theory of Middle Earth neurobiology, nor is he asking the king of Rohan to embrace such a theory.¹³ Actually, everyone can identify the referent quite well, and therefore the communication is effective, and *true*—even if, as a matter of neuroscience, we think the actual remembering takes place in the brain and not the hand.

In the same way, were a medieval person to tell us, "The barbarians attacked as the sun rose, and the battle continued until the sun set," we would in almost all cases allow his statement to be true, so long as there was a real attack, and the fight lasted throughout the daylight. Even if the reporter were a scholar whose conceptualization of the cosmos we knew, we could not fault him: the events at either end of the daylight are real, and *sunrise* and *sunset* are appropriate ways of referring to them. The fact that the reporter takes the terms as "literal" physical description has no bearing on his historical truthfulness (except in those rare cases in which he requires his audience to subscribe to his physical picture).

¹⁰ In Frederick Temple, Rowland Williams, Baden Powell, Henry Bristow Wilson, C. W. Goodwin, Mark Pattison, and Benjamin Jowett, *Essays and Reviews* (London: John W. Parker and Son, 1860), see Goodwin, "On the Mosaic Cosmogony" (207–53), and Jowett, "On the Interpretation of Scripture" (330–433).

¹¹ See James Barr, "Jowett and the Reading of the Bible 'Like Any Other Book,'" *Horizons in Biblical Theology* 4 (1985): 1–44; "Literality," *Faith and Philosophy* 6, no. 4 (1989): 412–28; and "The Literal, the Allegorical, and Modern Biblical Scholarship," *Journal for the Study of the Old Testament* 44 (1989): 3–17.

¹² Kenton Sparks, "Genesis 1–11 as Ancient Historiography," in James Hoffmeier, Gordon Wenham, and Kenton Sparks, *Genesis: History, Fiction, or Neither?*, ed. Charles Halton, ed. (Grand Rapids, MI: Zondervan, 2015), 114.

¹³ J. R. R. Tolkien, *The Two Towers* (Boston: Houghton Mifflin, 1965), book 3, chapter 6.

So, now we can apply some of these considerations to the biblical picture of the world.

3. PHYSICAL PICTURE OF THE WORLD

3A. "Ancient Science"?

Let me come back to the question of whether we can consider Genesis, or anything else in the Bible, as "ancient science."¹⁴

Now, authors who refer to "science" in the ancient Near East are not always clear what they mean, and this can lead to confusion. They generally *should* have in mind statements about the world that are open to investigation, to explain what things are and how they work, with technical terminology—what eventually came to be called "natural philosophy."¹⁵ The endeavor aims at giving a true account, and eliminating ambiguity; hence, one diagnostic for whether an ancient work was intended to be, or was taken to be, "scientific" is what people are expected to *do* with the statements: for example, does the communication itself invite people to affirm any details or to plan a journey based on the geography? As early as Eusebius of Caesarea, we have careful authors (including John Calvin over a millennium later) arguing that in Genesis 1–11 we do not have even an attempt at a "scientific" account; it is not at all a sample of "ancient science."¹⁶ No biblical passage, for example, aims to do what Herodotus did in his geographical description of various regions. Nor does any passage use, say, the language about "heart," "liver," and "kidneys" as the locus of thinking and feeling to suggest where one might do surgery to relieve mental afflictions.

And this hardly comes as a surprise, when you think of the social setting of the audiences of Genesis—primarily peasants, living by subsistence agriculture. What C. S. Lewis said of medieval peasants is surely true of ancient Israelites: "There were ditchers and alewives who . . . did

¹⁴ It is easy to multiply examples of those who take Genesis as ancient science. Some ready to hand are Scot McKnight in Dennis Venema and Scot McKnight, *Adam and the Genome* (Grand Rapids, MI: Baker, 2017), 111; Denis Lamoureux, *Evolution: Scripture and Nature Say Yes!* (Grand Rapids, MI: Zondervan, 2016), chap. 5.

¹⁵ For discussion of the various meanings of "science" and a lively awareness of anachronism and equivocation, see David Lindberg, *The Beginnings of Western Science* (Chicago: University of Chicago Press, 1992), 1–4. Lindberg also makes the distinction between science and technology, which perhaps also sheds light on the difference that "science" came to make: people could do plenty of sophisticated things, such as make buildings and navigate and breed stock, without an explanatory theory.

¹⁶ Documentation in my *Reading Genesis Well*, chap. 6.

not know that the earth was spherical; not because they thought it was flat but because they did not think about it at all."¹⁷

The rhetorician Allen Michael Scult contended that "the exigence which organizes and gives direction to the argument in the Pentateuch is the pagan worldview of the Mesopotamians and the Egyptians which that argument must combat."¹⁸ Now, things are probably more complicated than Scult has put it, but his clear statement does help to advance our approach to Genesis as having a rhetorical (or pastoral) motivation. But, in any case, asking audiences to commit themselves to physical affirmations about the shape of the world does not seem to be within the communicative goals of any of biblical authors.

Let us now take a few examples and see if we cannot discern just what the authors want us to do in response to their texts.

3B. The Shape of the World

Many writers on the Old Testament, from skeptics to critical believers, and some "full" believers as well, consider it obvious that the Old Testament, taken as a whole, affirms an ancient world picture, such as the one on the next page from the United Bible Societies' *Handbook on Genesis*, written by William Reyburn and Euan Fry, which has a picture of an "early concept of the universe."¹⁹

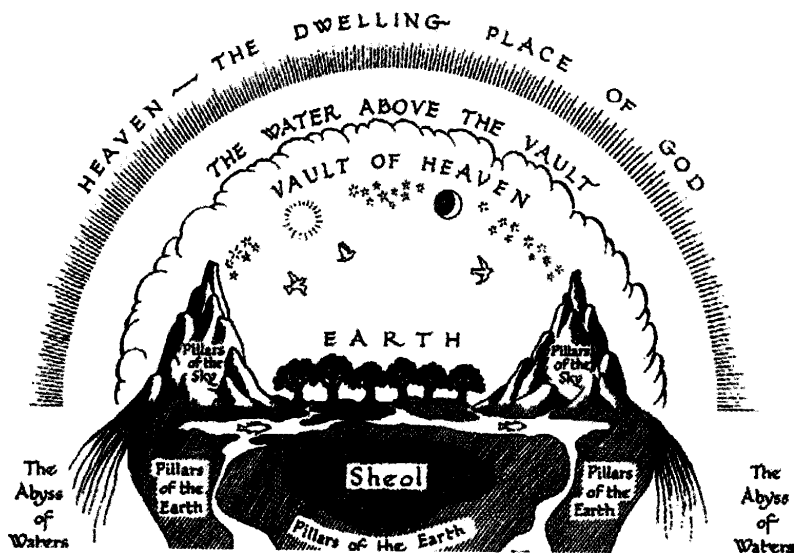
In this picture we have a flat earth, with mountainous pillars at either end, and the (solid) vault of heaven under which the sun, moon, and stars travel, with water above it. Below the land lie the pillars of the earth and

¹⁷ C. S. Lewis, *The Discarded Image* (Cambridge: Cambridge University Press, 1964), 20. Indeed, Arthur Conan Doyle has Sherlock Holmes (the quintessential "scientific detective") insist upon indifference to the Copernican Theory of the Solar System, as it had no bearing on his work one way or the other: see *A Study in Scarlet* (1887), chap. 2.

¹⁸ Allen Michael Scult, *The Rhetoric of the Pentateuch: An Analysis of the Argument for the Hebrew Concept of God*, PhD dissertation, University of Wisconsin, 1975, 22, 24.

¹⁹ William D. Reyburn and Euan McG. Fry, *Handbook on Genesis* (Miami, FL: United Bible Societies, 1997), 27 (used with permission); compare the similar picture in Peter Enns, *Inspiration and Incarnation: Evangelicals and the Problem of the Old Testament* (Grand Rapids, MI: Baker Academic, 2005), 54. See also Robin Parry, *The Biblical Cosmos: A Pilgrim's Guide to the Weird and Wonderful World of the Bible* (Eugene, OR: Cascade, 2014). John Roberts, "Biblical Cosmology: The Implications for Bible Translation," *Journal of Translation* 9:2 (2013), opens his article by saying, "the creation account in Gen 1:1–2:3 depicts a conceptual metaphor of the cosmos that is largely concordant with the cosmologies of ancient Mesopotamia and ancient Egypt," but he does not explore this as a rhetorical possibility, tending to associate the *conceptions* in a physical way.

the subterranean waters (with Sheol at the very center), and the abyss of waters off to each side. The lists of biblical texts to which these authors, and many others, commonly refer include passages from the Psalms (104:2–3, 5–9; 148:4); Job (26:11; 37:18; 38:4–11); Proverbs (8:28–29); Amos (9:6); and Philippians 2:10–11. Obviously, the argument goes, a “straight-forward reading” of these texts supports the picture. In this light, the “expanse” as a solid that will “separate the waters from the waters” makes perfect sense, as do the “lights” set in the expanse (Gen. 1:6, 17).



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Now, every single one of these supporting texts comes from what we would call a “poetical” context, which means that the authors ask us to envision the parts of the world *as if* they had this shape. It will not be a good use of our time to dwell on this. A good audience knows not to seek the wrong sort of information from such contexts.

Rather, let us consider a detail, namely, whether biblical writers taught that the earth is stationary. The English Egyptologist Charles Goodwin insisted that

the Hebrew records, the basis of religious faith, manifestly countenanced the opinion of the earth's immobility and certain other views of the universe very incompatible with those propounded by Copernicus.²⁰

Many others have read the biblical materials as portraying a stationary earth, more in line with the Ptolemaic system of cosmology than with the

²⁰ Charles W. Goodwin, “On the Cosmogony,” at 207.

post-Copernican (which we hold to be truer).²¹ The texts come primarily from the Psalms rather than from Genesis, but since the same world picture is held to be pervasive through the Bible, it is worth our attention.

We start with Psalm 93:1:

The LORD reigns; he is robed in majesty;
the LORD is robed; he has put on strength as his belt.
Yes, the world is established; *it shall never be moved.*

Psalms 96:10 and 104:5 are quite similar. We are told that to call these metaphorical or phenomenal is simply an effort to avoid the obvious meaning, in which the psalmists assert the physical immobility of the earth. For example, the Christian philosopher Nicholas Wolterstorff finds these texts to reflect "the geocentric cosmology widely shared among the peoples of antiquity. The author expresses this cosmology in his discourse; it's part of what he actually says." Wolterstorff suggests that we can still employ this as divine speech if we look at the function the locution plays in the discourse, which the erroneous idea does not prevent it from performing.²² No one making this kind of point ever hesitates over whether he or she has read the ancient text correctly.

The fact that biblical statements occur in *psalms*—that is, in poems composed for public singing or chanting—should lend support to the idea that physical cosmology is unlikely to be the concern of the psalmists or the singing congregations.

But there is an even simpler way of assessing this insistence, one that is rarely taken. We can look in the Psalms and see what kinds of things are said *not to be moved* to get an idea of what the verb means in this kind of context.²³ The verb is *mwṭ*; when used in the Niph'al it is rendered "be moved," "be shaken," or "slip" (of feet or steps). The result is revealing: the other things that do or do not move in the Psalms include the person (10:6; 13:4; 15:5; 16:8; 21:7; 30:6; 55:22; 62:2, 6; 112:6); a kingdom, such as Zion, the land of Israel, or Gentile powers (46:5, compare vv. 2, 6 ["totter"]);

²¹ These texts figured in the controversies over Copernicus's proposals for astronomy: see Edward Grant, *In Defense of the Earth's Immobility: Scholastic Reaction to Copernicanism in the Seventeenth Century* (Philadelphia: American Philosophical Society, 1984); pp. 61–63 provide the theological and exegetical part of that discussion.

²² Nicholas Wolterstorff, *Divine Discourse: Philosophical Reflections on the Claim That God Speaks* (Cambridge: Cambridge University Press, 1995), 209–16.

²³ I have found only one author besides myself who has taken this seemingly obvious tack, namely, Alexander McCaul in William Thomson, ed., *Aids to Faith: A Series of Theological Essays by Several Writers, Being a Reply to "Essays and Reviews"* (New York: Appleton, 1862), 253–54 (although not at the same level of detail as here).

60:2; 82:5; 125:1); and feet or steps (17:5; 38:16; 66:9; 94:18; 121:3). In other words, the Hebrew term might be rendered “be unstable,” with the context clarifying what kind of instability is in view. And, of course, the overall stability of the world under God’s governance—which is deeply relevant to Psalms 93, 96, and 104—is perfectly suited to be the subject of a song in corporate worship. Physical immobility has no bearing in such a context, and to find it there is a misreading. With all respect to Wolterstorff, it is not even in the locution.

3C. Does the Sun “Rise”?

The relative motions of the sun and earth provide a similar topic. Biblical expressions translated “sunrise,” we are told, involve a world picture in which the earth is static and the sun physically moves around it.²⁴ We will not delay ourselves with any discussion of relativistic mechanics, in which “stationary” is not meaningful; nor will we stop to remind ourselves that what is called “Copernican astronomy” is no longer considered correct.

We begin by examining the terms biblical authors used. Hebrew has two common expressions for “the sun rises.” The noun for “sun” (*šemeš*) joins with the verb “come forth” (*yāśā’*: e.g., Gen. 19:23; Judg. 5:31) or, more often “to shine forth” (*zārah*: e.g., Gen. 32:32; Exod. 22:3).²⁵ Both of these verbs have derived nouns as well. There is one verb for “the sun sets”: “go or enter” (*bô’*), with its derived noun. The usual Greek rendering for sunrise uses the verb *ἀνατέλλω* (with its cognate noun *ἀνατολή*), while sunset commonly uses the verb *δύνω* (and cognate noun *δυσμή*); the New Testament authors use the LXX terms (as in Matt. 5:35; 13:6; Mark 1:32).

The first thing to say is that the degree to which these verbs strongly imply *motion* is small; “to shine forth” hardly does so at all,²⁶ and “to enter” (*bô’*) is a fairly bland term. These terms are, to be sure, compatible with a number of physical images by which a speaker might portray the scene in his or her mind, but there is no passage in which the portrayal corresponds to an actual physical model. The usage is so widely spread and so consistent that we can only with difficulty avoid the conclusion that it is conventional; and conventionality serves the purpose of ready reference without being concerned with a physical model, and without

²⁴ See, for example, Denis Lamoureux, *Evolution: Scripture and Nature Say Yes!*, 86–87.

²⁵ Lexica may give “rise” as the sense of the verb (so BDB, 280-*a*), but, since it can be used for a “leprous” spot (2 Chron. 26:19), “shine forth” represents the sense better.

²⁶ What is treated as its Greek rendering, *ἀνατέλλω*, appears in 1 Macc. 9:23, where the “doers of injustice *appeared*”: perhaps this might be “sprang up,” but the element of motion is absent—or at least quite subdued.

drawing attention to the portrayal. One evidence for this is the way that, for example, Greek ἀνατολή (“rising”) and δυσμή (“setting, sinking”) become words for “east” and “west”: motion plays no part. Suppose, however, we were to persist in our literalism, or that we heard someone we knew to hold a Ptolemaic world-picture (such as a medieval natural philosopher) use these terms to refer to particular events. Would that person have been successful in his effort to communicate to us about real events? Probably!

Further, many have realized that the audience of the Pentateuch is “popular” and “rustic”—that is, an audience like those medieval persons Lewis described (as above). Hence, the great English man of letters John Colet (1467–1519) wrote: “Moses arranged his details in such a way as to give the people a clearer notion, and he does this *after the manner of a popular poet*, in order that he may the more adapt himself to the spirit of simple rusticity.”²⁷ In such a case, the way of referring will likely be conventional, combined with poetic portrayal, without an interest in physical details (much like Lewis’s usage of “candlestick” mentioned above).

3D. Where Does the Rain Come From?

For another example, take the separation of the waters described in Genesis 1:6–8:

And God said, “Let there be an expanse in the midst of the waters, and let it separate the waters from the waters.” And God made the expanse and separated the waters that were under the expanse from the waters that were above the expanse. And it was so. And God called the expanse Heaven. And there was evening and there was morning, the second day.

Many find this to imply a picture in which there is an actual body of water above the “expanse” (Heb. *rāqîa’*), which is taken to be a solid (see also Ps. 148:4),²⁸ often on the basis of a literalistic etymological argument. This argument notes the connection of the noun *rāqîa’* to the verb *rq’*, which can refer to “stamping out,” “spreading out,” or “beating out” (to make a metal overlay). Semantically, however, we must distinguish between *sense*

²⁷ John Colet, second letter to Radulphus (1497); English translation from Frederick Seebohm, *The Oxford Reformers* (London: Longmans, Green & Co., 1869), 51 (italics original). Another translation, with the Latin original, appears in J. H. Lupton, ed., *Letters to Radulphus on the Mosaic Account of the Creation, Together with Other Treatises, by John Colet, M.A.* (London: George Bell, 1876), 9–10.

²⁸ See, for example, Paul Seely, “The Firmament and the Water above, Part I: The Meaning of *raqia’* in Gen 1:6–8,” *WTJ* 53 (1991): 227–40; “The Firmament and the Water Above, Part II: The Meaning of ‘the Water Above the Firmament’ in Gen 1:6–8,” *WTJ* 54 (1992): 31–46.

and *reference*: the sense of the verb seems to be to extend something, with a variety of applications (or referents). Further, we should be mindful of Martin Joos's rule of thumb that he called his "Semantic axiom number one": for the sense of a word we seek that which contributes the least to its context (which is another way of minding the distinction between sense, contributed by the word, and reference, contributed by the context).²⁹ With these in mind, we can say that the word *rāqīa'* does have the sense of "surface," with the context identifying what kind of surface. Hence, the conventional "expanse" suits the word just fine.³⁰

The most important piece of evidence is the passage in *The Babylonian Epic of Creation* that describes what Marduk did to the body of Tiamat after he defeated and slew her (Tablet IV):³¹

- 137 He sliced her in half like a fish for drying;
- 138 Half of her he put up to roof the sky,
- 139 Drew a bolt across and made a guard to hold it.
- 140 Her waters he arranged so that they could not escape.

No doubt this too portrays waters held back by a firm surface that had been formed from half of Tiamat's body. Now, there are legitimate questions as to whether this *Babylonian Epic* is a fitting comparison to the Genesis story; and, if it is, in what form its material might have been known to ordinary Hebrews (it did not become a regulative text in Babylon until the first millennium BC). Let us simply allow, *arguendo*, that the story in some form has some bearing in providing a background against which Genesis spoke, assuming that the story itself predates the written versions we have. The Babylonian text cannot be said to be "scientific" in any way; it should be clear that drawing a physical picture is not the text's purpose.³²

It comes as no surprise that the Pentateuch assumes that its peasant audience has a clear grasp of certain fundamentals about the weather and the indispensable place of water in supporting crops and livestock. For example, they recollect the climate of Egypt, in which they had to water crops by irrigation (Deut. 11:10). That climate supplies its water primarily

²⁹ Martin Joos, "Semantic Axiom Number One," *Language* 48:2 (1972): 257–65.

³⁰ For examples of what I take to be unsatisfactory lexical argument, see Ellen van Wolde, "'Creation Out of Nothing' and the Hebrew Bible," in R. Alan Culpepper and Jan G. van der Watt, eds., *Creation Stories in Dialogue: The Bible, Science, and Folk Traditions* (Leiden: Brill, 2016), 157–76, at 161–62; Lamoureux, *Evolution: Scripture and Nature Say Yes!*, 97–98.

³¹ Stephanie Dalley, *Myths from Mesopotamia* (Oxford: Oxford University Press, 2000), 255. See also Alexander Heidel, *The Babylonian Genesis* (Chicago: University of Chicago Press, 1951), 42–43.

³² See Noel Weeks, "Cosmology in Historical Context," *WTJ* 68 (2006): 283–93.

by its rivers and streams, with rain being a small factor. In contrast, the Palestinian climate provides a clear sequence of seasons, with "early rains" in the fall and "later rain" in the late winter and early spring, followed by the dry season; the land "drinks water by the rain from heaven" (Deut. 11:11–17).³³ The fruitfulness of the land depends on the reliability of this cycle; for rain not to fall is a disaster (see also Lev. 26:4; Deut. 28:24),³⁴ while for it to fall during the dry season is equally ruinous (1 Sam. 12:17: rain falling during wheat harvest in the summer would destroy the crops).³⁵

Though the people of Israel knew that the rain falls "from heaven," we might be reluctant about how clearly they might have conceived the "water cycle," in which the terrestrial water evaporates and then returns as rain.³⁶ Nevertheless, unsurprisingly for agricultural peasants, the texts assume as common knowledge an awareness of the close connection between clouds, thunder, lightning, hail, and rain (Gen. 9:13–16; Exod. 9:22–24; 19:16). Other texts outside the Pentateuch show this as well: for example, God tells Elijah that he will "send rain upon the earth" after a severe drought, and Elijah has his servant look for a cloud arising from the far west, over the Mediterranean (1 Kings 18:1, 44).³⁷ By the way, this last example shows that Israelites were probably aware of what is called "phenomenal" language: Elijah's servant said that what he saw was "a

³³ See also 1 Kings 17:7 where a "brook" (a seasonal watercourse; Heb. *nahal*) had "dried up, because there was no rain." For the climate cycle, see John Bimson et al., *New Bible Atlas* (Downers Grove, IL: InterVarsity Press, 1985), 14–15.

³⁴ From outside the Pentateuch, see Amos 4:7; Isa. 30:23; 55:10; Acts 14:17; Heb. 6:7; Jas. 5:18.

³⁵ From outside the Pentateuch, see Prov. 26:1 ("snow in summer or rain in harvest"); Song 2:11 ("the winter is past; the rain is over and gone"); Hos. 6:3 ("spring rains that water the earth"); Joel 2:23 and Jer. 5:24 ("the early and the latter rain").

³⁶ A modern reads Eccl. 1:7 in light of just such a cycle, and this fits the theme of the chapter quite well, in which things endlessly recur; but we should probably resist making it a meteorological assertion. Compare Athanasius (ca. AD 318): "For water is by nature heavy, and tends to flow downwards, while the clouds are light and belong to the class of things which tend to soar and mount upwards. And yet we see water, heavy as it is, borne aloft in the clouds" (*Contra Gentes*, 36:4). John of Damascus, *Exact Exposition of the Orthodox Faith*, 2:9, is even more clear on the water cycle.

³⁷ See also Eccl. 11:3 ("If the clouds are full of rain, they empty themselves on the earth"); Zech. 10:1 ("Ask rain . . . from the LORD who makes the storm clouds, and he will give them showers of rain"); Ps. 135:7 ("He it is who makes the clouds rise at the end of the earth, who makes lightnings for the rain and brings forth the wind from his storehouses"). Likewise, in Luke 12:54 Jesus takes this connection as common knowledge.

little cloud like a man's hand rising from the sea." Shortly thereafter "the heavens grew black with clouds and wind" (v. 45). We may suppose that any reasonable person is familiar with the experience of far-off objects *looking* small, and if they describe them as *being* small, the audience can grasp the meaning. This is especially true of this case: Elijah and his servant knew that rain was coming, and they would have known that a cloud adequate for the job would be quite large—large enough to blacken the sky!

The poetical author of Job can say that God "binds up the waters in his thick clouds" (Job 26:8), while Deborah's song puts the "heavens" and the "clouds" in what must be "synonymous" parallelism: "the *heavens* dropped, yes, the *clouds* dropped water" (Judg. 5:4).³⁸ Further, "a tumult of waters in the heavens" (Jer. 10:13; 51:16) is a wild rainstorm. The wording of Job 36:27–29 is suggestive:

For he draws up the drops of water;
 they distill his mist in rain,
 which the skies pour down
 and drop on mankind abundantly.
 Can anyone understand the spreading of the clouds,
 the thunderings of his pavilion?

To the extent that any water is stored on high, it is in the clouds!

From outside of Israel, in the Ugaritic story *Baal and Mot*, Baal is told, "take your clouds, your winds, your thunderbolts (and) your rains" (5, v, 7–8)—that is, this author grasped a connection between rainwater, clouds, and storm.³⁹

The Israelites' knowledge is pragmatic rather than theoretical, but true enough for their purposes. These agriculturalists' pragmatic concerns, coupled with a true perception of the causal chain, appear as well in Israel's songs, such as Psalm 147:8:

He covers the heavens with clouds;
 he prepares rain for the earth;
 he makes grass grow on the hills.

In light of this there is no reason to doubt how an Israelite audience would interpret a solemn promise such as that in Deuteronomy 28:12 ("The LORD will *open* [Heb. *yiptah*] to you his good treasury, the heavens,

³⁸ I use the conventional term for the kind of parallelism; it is more accurate to say that the two lines are co-referential. See C. John Collins, *Homonymous Verbs in Biblical Hebrew: An Investigation of the Role of Comparative Philology*, PhD thesis, University of Liverpool, 1988, 20–23.

³⁹ See J. C. L. Gibson, *Canaanite Myths and Legends* (London: T&T Clark, 1978), 72.

to give the rain to your land in its season and to bless all the work of your hands”), or a serious fear such as in 1 Kings. 8:35 (“When heaven is *shut up* [or *restrained*, Heb. *hē’ūsēr*] and there is no rain because they have sinned against you”): they would have imagined the regular arrival of the clouds and the rains. In the same way, “the windows of the heavens,” which were “opened” (Gen. 7:11; Heb. *niptāhû*, as in Deut. 28:12) and then “closed” (Gen. 8:2), would be taken as a pictorial way of referring to rain from the clouds. This is especially clear, both from the rain’s connection to clouds in the context (Gen. 9:14–15), and from the colorful use of the “windows of heaven” through which a wider array of abundant things come (2 Kings 7:2, 19; Mal. 3:10; Isa. 24:18). Indeed, in the Ugaritic story called *The Palace of Baal*, the lattice-window in the mansion is in poetic parallel to a rift in the clouds for rain and thunder.⁴⁰

So, we *could* suggest that Genesis means that the waters above the expanse are those contained in the clouds.⁴¹ One difficulty is that the skies are clear for much of the year in Palestine, which might tell against this *for Genesis*. It is probably better to say that ancient Israelites, or some of them, showed an adequate grasp of the relationship between rain and clouds, and that therefore they might be counted on to realize that the description in Genesis is a poetic portrayal.⁴² That is, based both on their literary experience and on their pre-existing knowledge of the physical world, an ideal audience would have realized that Genesis is less about a physical depiction of the world and more about the kind of depiction that the pagan stories tell about (with a view toward rejecting those other stories)—and thus it is poetic. It seems highly unlikely that any of this ideal audience would have taken Genesis as offering a physical description to compete with their already existing utilitarian perception of the rain and sky. In such a setting, then, when the writer of Genesis asks his audience to imagine the world’s components *as if* they were configured this way, he gives us an entirely appropriate way of portraying these components for that purpose. At the very least, no one *had to* read Genesis as requiring a commitment to the physical shape of things. Further, the role of the “waters above” in Genesis 1 is to supply the rain that is let loose

⁴⁰ *The Palace of Baal*, 4 vi, 19–31 (CML, 64–65). In fact, the Ugaritic word for lattice-window is *’urbt*, cognate to the Hebrew *’rubbâ*, “window” in Gen. 7:11; 8:2; and both languages use the verb *pth* for “open.”

⁴¹ See, for example, Vern Poythress, “Rain Water Versus a Heavenly Sea in Genesis 1:6–8,” *WTJ* 77 (2015): 181–91, with an excellent selection of texts from the Old Testament and from some Babylonian and Ugaritic sources.

⁴² “Poetic” here refers to the presence of pictorial description, which can be present in a variety of literary forms (such as narrative, lyrics, etc.).

in the Flood account (7:11–12; 8:2); any physical particulars beyond that are extraneous to the story.

3E. Philippians 2:10–11: A Three-Decker Universe?

Even though my focus is on the *Old Testament*, I will throw in Philippians 2:10–11 here as well—not simply for good measure but because, we are told, it shows the same pre-scientific world-picture as the Hebrew texts do. To begin with, verses 6–11 make up a distinct section of the book, as New Testament specialists have noted. There is no agreement on whether it is a pre-existing hymn or creed, or something else, or on whether it is “poetry” or “elevated prose”; nor on whether it comes from Paul or from another source. But at least the specialists agree that the section’s language is higher register than ordinary prose. That in itself points us toward some purpose other than geographical description as its communicative intention.

And that suggestion about intention becomes even clearer when we look at the terms for the “realms.” The three groups are “those in heaven, those on earth, and those under the earth” (ἐπουρανίων καὶ ἐπιγείων καὶ καταχθονίων); they are three adjectives in the genitive plural, which could be masculine or neuter in gender—a matter to which we will return. The first two adjectives, ἐπουράνιος and ἐπίγειος, appear elsewhere in the New Testament as “heavenly” and “earthly” (John 3:12; 1 Cor. 15:40),⁴³ where the contrast is not spatial but “spiritual.” That is, the heavenly pertains to transcendent things, while earthly pertains to unaided human experience. In Ephesians, “the heavenly places” are either the realm of God’s acknowledged rule (1:3, 20; 2:6) or else the realm in which other forces contest God’s rule (3:10; 6:12). To examine each of these possibilities and to adjudicate between them goes beyond my present scope; it is enough for now simply to repeat that the concern is not with geography or topography, but with groups of personal beings.

This applies as well to the third element, “those under the earth” (καταχθονίων). This word does not appear elsewhere in the Greek Bible, in the Old or New Testaments. The closest wording to it occurs in Revelation 5:3, 13, which in English sounds very much like our passage, though the Greek is a bit different: “no one in heaven or on earth or under the earth” (οὐδεὶς ἐν τῷ οὐρανῷ οὐδὲ ἐπὶ τῆς γῆς οὐδὲ ὑποκάτω τῆς γῆς), and “every creature in heaven and on earth and under the earth and in the sea, and all that is in them” (πάν κτίσμα ὃ ἐν τῷ οὐρανῷ καὶ ἐπὶ τῆς γῆς καὶ ὑποκάτω τῆς γῆς καὶ ἐπὶ τῆς θαλάσσης καὶ τὰ ἐν αὐτοῖς πάντα). The context shows that the goal is to

⁴³ See also 2 Cor. 5:1, “earthly home”; v. 2, “our heavenly dwelling” is lit. “our dwelling that is of heaven” (τὸ οἰκητήριον ἡμῶν τὸ ἐξ οὐρανοῦ), which is closely related.

convey the idea of everything everywhere; from the perspective of one's eyesight, these three regions are an excellent intuitive way of referring to the various parties, and a good reader can identify them without worrying whether they are geographical statements (especially in a book like the Revelation).

We have two references in the Apostolic Fathers that might help: Ignatius (AD 35–108) writes in his letter to the Trallians (§9) of Jesus, who was truly crucified and died “while those in heaven and on earth and under the earth looked on” (βλεπόντων τῶν ἐπουρανίων καὶ ἐπιγείων καὶ ὑποχθονίων)—which is a reference to three groups of beings that witnessed the crucifixion, however they may be identified. And Polycarp (perhaps AD 69–155) wrote to the Philippian Christians (§2.1) that to Christ “all things in heaven and on earth are subject” (ὑπετάγη τὰ πάντα ἐπουράνια καὶ ἐπίγεια), which here focuses on the various things in all the creation that are subject.

The background for the specific adjective *καταχθόνιος*, “that which is under the earth,” comes from the wider Greek usage outside the Greek Bible, although the adjective *ὑποχθόνιος* in Ignatius’ Trallians seems synonymous. In Greek from before the New Testament, *καταχθόνιος* has to do with “the underworld,” the realm of the dead, either as “the god of the underworld” or as “gods of the underworld” (sometimes as deified spirits of the departed).⁴⁴

The usage in Philippians seems almost to be underdetermined, which probably supports the idea that it is a quotation of something known to both Paul and his audience—regardless of whether Paul himself originally wrote it. In any case, these are three groups of beings, above whose names God has bestowed a name on Jesus (v. 9). That is, *location*—if it was ever part of the picture—has faded out of it by Paul’s time, surviving as a kind of *spatial imagery*. In fact, the very word “above” in verse 9 is a topographical metaphor! Specialists debate which three groups of beings are in view here; I suspect that the Greek usage, together with the likely parallel in Ignatius, support the reading that the three groups are the good angels, human beings, and demons. So I judge, though others differ.⁴⁵ But

⁴⁴ See, for example, Homer, *Iliad*, 9,457; Dionysius of Halicarnassus, *Roman Antiquities*, 2.10(3); Strabo, *Geography*, 6.2.1.

⁴⁵ I agree with, say, Peter O’Brien, *Philippians*, NIGTC (Grand Rapids, MI: Eerdmans, 1991), 243–45, who would include the departed in the third group as well. John Reumann, on the other hand, would group them as spirits above, humans on earth, and the dead in Hades; see Reumann, *Philippians*, Anchor Bible (New Haven, CT: Yale University Press, 2008), 356–57. J. B. Lightfoot (1868), however, argues for a connection to Polycarp, in which case the adjectives would be neuter, and the idea is “everything there is” (see also Rev. 5:3, 13).

to find in this passage evidence of a cosmic geography in any sense other than a naming convention looks to be non-cooperation with the text, and therefore a faulty reading.

3F. "Stretching the Heavens"

So far, I have taken a look at texts that are supposed to show that the biblical writers adhered to an outmoded scientific picture of the world. On the other hand, some try to "vindicate" the Bible by showing how its statements *anticipate* modern scientific findings. Now we must apply the principle "sauce for the goose is sauce for the gander."

Generally speaking, these "vindications" rest upon the same mistake about language as the "dismissal-as-primitive" positions do. A simple example is the appeal to Isaiah 40:22, which speaks of God as "he who sits above the *circle* of the earth": does that not affirm that the earth is a globe, and not a flat sheet? It is more likely that the words refer to the land as far as one can see from any high vantage point, as if one marked out the horizon with a compass.⁴⁶ The physical shape of the entire earth is not in view here.

In the same way, many have argued that the biblical language about God "stretching the heavens" can be wondrously correlated to the contemporary idea of cosmic expansion after the Big Bang.⁴⁷ (Examples come readily to hand from popular apologetics websites, from both "young-earth" and "old-earth" creationists.)

Now, I have no quarrel with the idea of the Big Bang; I agree with those who suggest that it can serve as a physical description of what creation from nothing would have looked like. The continued expansion of the whole universe from that event, which seems to be what the astronomers are measuring, supports the Big Bang theory. Even if the Big Bang does not *prove* that creation from nothing took place as inferred from Genesis 1:1, it is highly compatible with that theological conviction. As a beginning of the universe as we know it, it cannot be the result of physical causes within the universe, and thus it puts a sharp point on questions of purpose and ultimate causation.

People who make these moves may have the purest of intentions, but I must nevertheless explain why the texts they use do not achieve the goals set for them. To say it again, the texts that use this language are generally poetic (or rhetorically high), and physical cosmology is simply outside their communicative intent. Instead, they portray God "stretching out the

⁴⁶ The word for "circle" is *hûg* (חוג), related to the word for "compass" found in Isa. 44:13, *m'huggâ* (מחוגה).

⁴⁷ See Job 9:8; Ps. 104:2; Isa. 40:22; 42:5; 44:24; 45:12; 51:13; Jer. 10:12; 51:15; Zech. 12:1, all using the verb *nâtâ* (נטה).

heavens" as a man would stretch out the cloth of a tent in order to pitch it. This comes to us both from the explicit "stretching out the heavens like a tent" (Ps. 104:2; compare Isa. 40:22, "stretches out the heavens like a curtain"), and from the "literal" uses of the same verb for "pitching [or *stretching out*] a tent" (as in Gen. 12:8; 26:25; 33:19; 35:21; Exod. 33:7; Judg. 4:11; 2 Sam. 6:17; 16:22). The biblical texts use this image to stress that it is the Lord alone who fashioned the whole earth and heavens and prepared them as a place for habitation.

Skeptics and "Bible-science defenders" share an assumption in common, namely, that scientific language is the most accurate, and therefore the most truthful, kind of discourse; and then it follows that for the Bible to be *true*, it must address these scientific questions. I count this assumption inadequate for real life.

3G. The Origin of the "Kinds"

Let me finish with a subject in which, as I would like to suggest, many Christians have mistakenly treated biblical statements as speaking to scientific theories: that is, in the matter of whether the "kinds" in Genesis 1 imply separate and identifiable creative acts.

An evolutionary creationist, Denis Lamoureux, has insisted on this:⁴⁸

The notion of the immutability of living organisms is clearly present in Genesis 1. That chapter states ten times that plants and animals reproduce "according to its/their kind/s."

Lamoureux seeks to disentangle the Bible from science altogether; as he sees it, the Bible uses outmoded "ancient science" to convey a spiritual lesson (by way of his "message-incident principle").

As it turns out, young-earth creationists and many progressive creationists think the same way. Gilbert Rorison, an exemplary scholar and progressive creationist (part of the orthodox reply to *Essays and Reviews*) put it this way:⁴⁹

[T]he strata of the earth are the register of divine acts strictly creative and supernatural; each marking a step in an ordered progress culminating at last in a man.

In effect, the young-earth and progressive creationists who think this way seek to place limits on scientific theorizing.

Although I hold Rorison and those like him in high regard, I must dissent, in view of the following considerations. First, the style of Genesis

⁴⁸ Denis O. Lamoureux, "No Historical Adam: Evolutionary Creation View," in *Four Views on the Historical Adam* (Grand Rapids, MI: Zondervan, 2014), 55.

⁴⁹ Gilbert Rorison, "The Creative Week," in E. M. Goulburn, et al., *Replies to "Essays and Reviews"* (New York: Appleton, 1862), 242–98, at 279.

1 is exalted prose, and the level of description is quite broad-stroke. The passage says nothing about any “processes” by which God shaped the earth and fashioned the animals, that is, the author does not say there were *any*, nor does he say there were *none*; rather, talking about them is not the purpose of the text. At the same time, the story does mention the “Spirit of God,” and it has God repeatedly “saying” things; this makes clear to the audience that the universe did not organize itself and holds open the possibility that God might have “added” something to whatever mix is involved. (This says nothing *against* the natural processes!) Further, the word “kind” is *not* the same as “species”—in fact, it is not exactly a precise taxonomic term at all. The Hebrew word (*mîn*) means something like “category” or “variety,” and its basis for classification is the appearance to the naked eye, that is, it is a highly informal classification.⁵⁰

Finally, the original audience consisted primarily of farmers and shepherds. Such people already knew how to get more sheep: you breed them from your sheep, and not from camels. If you want to grow barley, you plant barley seeds, and not oats. That is, the fact that plants and animals reproduce according to their kinds is not *news* to the audience, and we should probably look for another function of the text than that of supplying information that they already had.

In other words, Genesis deals with what we may call the *synchronic* matter of how, in the Israelites’ daily experience, the “kinds” relate to one another and reflect God’s purposes, and not the *diachronic* question of how the kinds came to be, or of whether one kind can turn into another.

As it turns out, we do have an ancient scientific text about the fixity of the kinds; but it comes from *Aristotle*, not *Moses*. The LXX for the Genesis phrase “according to (its) kind” is *κατὰ γένος*. Aristotle, in his work *On the Generation of Animals* (1.1 [715-b]), uses the cognate phrase *κατὰ τὴν συγγένειαν*. He tells us that animals reproduce *according to their kinds*, and he then adds an explanation why it must always be so, which is what makes his passage “scientific” or “philosophical”: “if the products were dissimilar from their parents, and yet able to copulate, we should then get arising from them yet another different manner of creature, and out of their progeny yet another, and so it would go on *ad infinitum*. Nature, however, avoids what is infinite.” We might or might not agree with his reasoning, and it may or may not be possible to employ his overall philosophy even in an evolutionary context,⁵¹ but we can at least

⁵⁰ See Mark Futato, “מין,” no. 4786 in *NIDOTTE*, 2:934–935; Paul Seely, “The Basic Meaning of *mîn*, ‘kind’,” *Science and Christian Belief* 9, no. 1 (1997): 47–56.

⁵¹ See, for example, James Lennox, “Are Aristotelian Species Eternal?” reprinted in Lennox, *Aristotle’s Philosophy of Biology: Studies in the Origins of Life Science* (Cambridge: Cambridge University Press, 2000); Christopher Austin,

recognize how different his scientific-philosophical presentation is from the simple and evocative one we find in Genesis. We can, and should, call Aristotle “ancient science,” and I think he deserves respect for what he accomplished.⁵² On the other hand, to call Genesis “science,” whether ancient or modern, is an enormous literary confusion. Its purpose is, rather, to enable its audiences to celebrate God’s work of creation as a magnificent achievement—and thereby to keep their loyalty to him.

I wish to be clear: if there are various biological processes that allow “descent with modification,” these are still God’s processes. When we teach our children that the answer to the question “Who made you?” is “God,” we do not mean that as an alternative to the biological process that we explain to them later. Divine action and creaturely action do not compete, they are not a zero-sum game.⁵³ Now, I am sure that a naturalistic take on these processes in the history of the world, as if they on their own were enough, is simply inadequate—at the very least, we need extra help from outside the processes for the origin of the world, for the origin of life, and for the origin of the human mind.

I consider the study of these processes to be a proper scientific endeavor. I also count the critique of the dominant theories to be a proper endeavor, and I applaud those who supply such critiques; in fact, I mourn over the closed-mindedness by which modern evolutionary theory is walled off from examination. But, with Alvin Plantinga, we must be sure we are accurately perceiving “where the conflict really lies.”⁵⁴

4. CONCLUSION

I am not saying, mind you, that none of the Bible writers themselves held any such “primitive” pictures as we have been considering. I am saying,

“Aristotelian Essentialism: Essence in an Age of Evolution,” *Synthese* 193 (2016), doi:10.1007/s11229-016-1066-4; Mariusz Tabaczek, “An Aristotelian Account of Evolution and the Contemporary Philosophy of Biology,” *Dialogo: Proceedings of the Conferences on the Dialogue between Science and Theology* (November 6–11, 2014), 57–69.

⁵² For a description of Aristotle’s natural philosophy with a sympathetic assessment, see David Lindberg, *The Beginnings of Western Science*, 46–68.

⁵³ For discussion of divine action, see my essay, “How to Think about God’s Action in the World,” chap. 22 in J. P. Moreland, Stephen Meyer, Christopher Shaw, Ann Gauger, and Wayne Grudem, eds., *Theistic Evolution: A Scientific, Philosophical, and Theological Critique* (Wheaton, IL: Crossway, 2017). Of course, in such a volume, the other contributors need not endorse everything that I argue for, and vice versa.

⁵⁴ Alvin Plantinga, *Where the Conflict Really Lies: Science, Religion, and Naturalism* (Oxford: Oxford University Press, 2011).

though, that we cannot take their statements as any kind of *affirmation* of the pictures, and still less an invitation to us to affirm the pictures. As is *normal* for human behavior, we cannot tell from their locutions what pictures they held (or if they held any at all). That is, the references to physical things are either conventional (much as “four corners of the earth” would be for us) or poetic; and when they are poetic, they invite the audience to picture the referent *as if* it were such and such. In each case, we can successfully identify the referents and form the suitable picture, in order to cooperate (or not) with the communication. So, the issue is whether the representation is appropriate for the communication, which is, often enough, a moral question.

To conclude, I have no reservations about taking what we have in Genesis 1–11 as properly “historical,” in the sense of being about real persons and events. Now, each of the three categories I began with also thinks that Genesis intends to tell history; the difference is in the kind of correlation we should expect between the locution and the referents. I think that, to make a generalization, all three tend to suppose a fairly literalistic correlation.

For my part, I do not believe that “history” is a literary kind, and therefore I insist that calling it *history* does not settle the hermeneutical approach that we should follow.⁵⁵ The only thing we can do is take each text for what it is, respecting its place in the public life of ancient Israel.

In other places, I have argued that the place “where the conflict really lies” is not in these supposed authoritative or faulty pictures, but rather in our depiction of God’s action in his world—providence, miracle, and purpose. *Naturalism* is the problem, not the particular *sciences*. It is here that science can transgress its proper boundaries; but sensible people can easily see that those who insist that all events are in principle “natural” have taken a position that is inadequate in all the relevant dimensions—theological, empirical, and pastoral. (You will see that I do not allow to “science” any kind of epistemic privilege; its goodness depends on its compliance with the rules of good critical thinking, and these rules include the way in which one reasons about larger questions.)⁵⁶

⁵⁵ I argue this more fully in *Reading Genesis Well*. For a brief introduction, see my post, “RIP, Genre: The Idea Has Run Its Course,” *Sapientia*, April 4, 2017, at <http://henrycenter.tiu.edu/2017/04/genre-has-run-its-course-let-the-word-retire-in-peace/>.

⁵⁶ I have argued these points more fully in my essay, “How to Think about God’s Action in the World,” and in *Reading Genesis Well*. See also my post, “We Need More Dimensions: Or, Sometimes You Have to Complicate in Order to Clarify,” *Sapientia*, May 19, 2017, at <http://henrycenter.tiu.edu/2017/05/we-need-more-dimensions-or-sometimes-you-have-to-complicate-in-order-to-clarify/>.

In contrast to naturalism (and to “theistic naturalism”), I contend that the traditional Christian metaphysic gives us a sound way of thinking about God’s activity *in every event*. That is, we have no right to declare *a priori* that we may expect to find created natural factors alone to be adequate for everything. Christians certainly have the theological resources to be happy should we find, *a posteriori*, that they are sufficient for most things—because we recognize that God is active in them all.

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