

Is the Creation Account in the Bible Unscientific? From Concordism to Created Cosmic Order

Chong Ho Yu, Ph.D.

The relationship between science and Christianity has been an ongoing debate since the rise of modern science. On one hand, many Christians encountered challenges from secular scientists, and subsequently became doubtful of the scientific value and historicity of Genesis. On the other hand, some Christian apologists adopted the concordist position in an attempt to defend the scientific validity of the Bible, but as a consequence, this position provoked further resistance from skeptics. The objectives of this article are three-fold. First, I attempted to unpack the theological meanings of the creation account in Genesis, as opposed to reading it as a scientific report. Following this line of reasoning, I argue against concordism, an apologetic approach of mapping Bible verses to scientific theories. Finally, I show how

Chong Ho Yu, Ph.D. in philosophy and Ph.D. in psychology both from Arizona State University and M.A. in theology from Azusa Pacific University. He is an associate professor of psychology and an adjunct professor of math at Azusa Pacific University where he is also the quantitative research consultant and the committee chair of data science.

the creation account in Scripture had contributed to the advancement of science by laying the foundational premise of scientific inquiry: the universe is well-ordered and hence scientific laws are discoverable.

SCIENTIFIC CHALLENGES

Secular authors that are critical of Scripture are characterized by their rational approach for studying religion. For example, Christopher Hitchens asserted that there is not a single word of truth in Genesis.¹ According to Hitchens, God did not create humanity in his image. In contrast, the biblical authors projected our image into the concept of God.² By the same token, in *Religion Explained* anthropologic psychologist Pascal Boyer maintained that the origin of religion could be explained by our natural tendency. In Boyer's view, gods are anthropomorphic in the sense that deities are construed very much like persons.³ In *Breaking the Spell* prominent philosopher Daniel Dennett mocked the creation account in Genesis 2 by saying, "Few are comfortable acknowledging just how far we've come from the God of Genesis 2:21, who literally plucks a rib from Adam and closes up the flesh (with his fingers, one imagines), before sculpting Eve on the spot."⁴ In a similar vein, the host of *Good Atheist Podcast* Jacob Fortin criticized the Genesis account of the beginning of the universe as being unscientific. In response to Genesis 1:9 "let the waters under the heaven be gathered together unto one place, and let the dry land appear," Fortin wrote, "He (God) doesn't seem to really understand how the planet is actually formed, but that's not unusual for a group of nomadic desert people living thousands of years ago to have a level of scientific knowledge comparable to a 3-year old." In reaction to the creation of the sun and the moon in Day 4, Fortin wrote, "the authors of the Bible were essentially scientifically retarded; they actually think the moon generates its own light."⁵

Another common criticism against the validity of Genesis is that there are some similarities between Genesis 1–3 and certain Ancient Near East (ANE) mythologies, such as *Enuma Elish*, and the Memphite creation myth of Egypt. Edward Babinski pointed out that ANE cosmological writings commonly depicted heaven and earth as the two halves of creation, and they de-

1. Christopher Hitchens, *Unacknowledged Legislation: Writers in the Public Sphere* (New York: Verso, 2000), xvi.

2. Christopher Hitchens, *God is not Great: How Religion Poisons Everything* (New York: Twelve, 2007), 107.

3. Pascal Boyer, *Religion Explained* (New York: Basic Books, 2001), 1859 Kindle.

4. Daniel C. Dennett, *Breaking the Spell: Religion as a Natural Phenomenon* (New York: Viking, 2006), 210.

5. Jacob Fortin, "Genesis is not Scientifically Accurate," 31 January 2011 [cited 27 February 2013]. Online: www.thegoodatheist.net/2011/01/31/genesis-is-not-scientifically-accurate/.

scribed how the sky was stabilized above the earth. They were also concerned with setting up the boundaries between the sea and the land. In the Egyptian creation myth, creation took place through a command by the thought or the word of the deity, which mirrors “God said” in Genesis 1. Thus, Babinski concluded that there is no uniqueness in the biblical account of creation; Genesis is nothing more than one of many ANE mythologies. According to Babinski, it is probable that the biblical authors took other ANE myths as references while writing Genesis.⁶

A study conducted at the Campus Pastor Office of Azusa Pacific University showed that there is a downward trend among the most recent cohorts of students with respect to holding Christian convictions while facing opposition.⁷ Christian scientist Richard Colling found that many college students stopped attending church when they could not reconcile scientific claims and religious doctrines in regards to the origin of humans.⁸ Further, in “You lost me,” an empirical study that aims to explain why young Christians are leaving church, David Kinnaman found that many young Christians perceive Christianity to be in opposition to modern science.⁹ In the light of the modern scholarship of science, history, and archeology, the preceding challenges should be taken seriously by Christian apologetics; otherwise lay people might be very confused and eventually de-converted to secularism and atheism. Hence, the objective of this article is to unpack and counter those seemingly compelling arguments one by one. Furthermore, an understanding of Ancient Near East mythologies could illuminate the biblical creation story rather than impose our modern views on it.

IS TRUTH NECESSARILY LITERAL?

As mentioned before, in Hitchens’s view that there is not a single word of truth in Genesis. But what is the meaning of “truth”? Did God really create the sky, the lands, the oceans, and other natural objects in the order as outlined by Genesis 1? Did God literally create a woman out of the rib of a man? Is it fair to interpret all biblical passages literally? Did the biblical authors intend to write a scientific report for the Jews who had no background knowledge of modern science? Michael Heiser replied to this question in a humorous way: “Genesis has nothing to do with science. What we are concerned about didn’t pop in ancient people’s mind. Criticizing Genesis as unscientific

6. Edward Babinski, “The Cosmology of the Bible,” in *Christian Delusion*, ed. John Loftus. (Amherst: Prometheus, 2010), 109–147.

7. Chris Adams, “Student Life Faith Integration: Faith and Living WASC EER Report” (Azusa Pacific University, 2012), 4.

8. Richard Colling, “Evolution and the Christian Faith,” Presentation at Azusa Pacific University (April 15, 2013).

9. David Kinnaman, *You Lost me: Why Young Christians Are Leaving Church . . . and Rethinking Faith* (Grand Rapids: Baker Books, 2011), 131.

is like criticizing my boy for not being a girl.”¹⁰ To resolve this issue Johanna van Wijk–bos introduced the difference between *logos* and *mythos*. In her view, the wrong question to ask about the Bible is: “What really happened?” To ask whether the Bible accounts happened exactly as described, or to demand historical and scientific evidence to support that it is factually true is to confuse the original purpose of the authors. For the modern world, a story is not true unless all the details are as verbatim as it is recorded. This is *logos*. But for the people who wrote the Old Testament, truth is not in the details or the chronology of facts, but in the meaning of the story. This is *mythos*.¹¹

Some people may argue that because Christianity cannot pass the litmus test of history and science, theologians use the notion that truth is not literal to cover up the fatal flaws of Christianity, exemplifying an unscientific attitude. First, contrary to popular belief, a literal interpretation of Genesis 1 is neither a Jewish tradition nor a Christian doctrine. For example, first–century Jewish scholar Philo (13 BC – AD 50) said that God could create everything instantaneously. He didn’t need six days at all, and thus the so–called “six days” are nothing more than figurative. In the second century, Justin Martyr (AD 100–165) and Irenaeus (AD 120–203) argued that some creation “days” could be as long as 1,000 years by citing Psalm 90:4 and 2 Peter 3:8. Clement of Alexandra (AD 150–215) was also skeptical of the notion of 24–hour day. In his view, the theme of the creation sequence is about the order of creatures, not the actual timing. By the same token, Origen (AD 185–254) understood Genesis 1 in the light of spiritual, rather than the literal interpretation of the text. Further, Augustine (AD 354–430) also questioned whether “day” in Genesis means the same thing as what people conceptualized later.¹²

Second, does science deal with facts only? Yes, but only to some extent. Water is H₂O. If someone says it is H₂O₂, then it is factually wrong. But when science tackles the deeper structure of the world, it requires abstract modeling. A model is nothing more than a metaphor or a representation of the world, but it does not correspond to reality by one–on–one mapping. For example, Niels Bohr introduced the Bohr model in 1913 to illustrate the structure of an atom. In this model, the atom has a positively charged nucleus with negatively charged electrons orbiting around the nucleus. Thus, the structure of an atom is compared to the solar system. The Bohr model of the atom is very useful in science, but the problem is: it isn’t “true.” Planets orbit the sun in predictable paths, but electrons do not actually circle around the nucleus. Indeed, electrons behave like amorphous clouds that can “jump” from one energy level to another. These “jumps” are known as “quantum leaps.”

10. Michael Heiser, “Genesis and Creation,” 2014, <https://www.youtube.com/watch?v=JeqfiOFuazc> (accessed Oct 30, 2017)

11. Johanna van Wijk–bos, *Making Wise the Simple: The Torah in Christian Faith and Practice* (Grand Rapids: William B. Eerdmans, 2005), 63–65.

12. Hugh Ross, *A Matter of Days: Resolving a creation controversy* (Covina, CA: RTB Press, 2015), 771–852 Kindle.

Moreover, planets are distinguishable in that each planet has its own unique properties and characteristics, but electrons are indistinguishable from one another.¹³ Scientific visualization, also known as data visualization, is another good example. Scientists at the Netherlands Research Foundations visualized multi-dimensional phenomena of 3-D flows of fluid dynamics for which there was no obvious physical analogy. Even though a single vector can be represented by an arrow, no compelling physical metaphor exists for a field of vectors and a tensor, the product of vectors.¹⁴ No wonder Keller and Keller argued that in scientific visualization “choosing techniques to represent the phenomenon may require some creative or artistic talent, especially if the phenomenon is abstract or has never been seen, such as the inside of a proton, or a black hole.”¹⁵ Put it bluntly, a model represented by a graphical model is nothing more than a visual analogy, and should never be taken literally.¹⁶ Hence, prominent statisticians G. E. Box and R. D. Norman said: “All models are wrong but some are useful.”¹⁷ In order to proceed with theoretical research, we must simplify and distort the world. Simply put, science has its own mythos. These myths or “wrong” models cannot be taken literally or factually.¹⁸

CREATION AS OVERCOMING CHAOS BY ORDER

When Fortin analyzed the creation account by the sequence of day, nothing made sense through the lens of modern science. However, even though the biblical authors were not equipped with the knowledge of modern science, could they be capable of realizing that there would be no light without the sun and the moon? Genesis 1: 3 says “God separated the light from the darkness.” Darkness is the absence of light, not an existing entity. How could the light be “separated” from darkness? How could the biblical authors make these obvious “mistakes”? It seems that the authors intended to use the sequence (by day) to express some deeper messages rather than reporting factual details. It is beyond the scope of this article to discuss whether the “day” in Genesis is

13. Keith S Taber, “When the Analogy Breaks Down: Modelling the Atom on the Solar System,” *Physics Education* 36 (2001): 222–226.

14. L. Hesselink, Frits Post, and J. Wijk, “Research Issues in Vector and Tensor Field Visualization,” *IEEE Computer Graphics and Applications* 14 (1994): 76–79.

15. Peter Keller and Mary Keller, *Visual Cues: Practical Data Visualization* (Piscataway, NJ: IEEE Press, 1993): 12.

16. Yu, C. H., *Dancing with the Data: The Art and Science of Data Visualization* (Saarbrücken, Germany: LAP, 2014).

17. G. E. P. Box, and R. D. Norman, *Empirical Model-Building and Response Surfaces* (New York: Wiley, 1987): 424.

18. Chong Ho Yu, “A Model Must be Wrong to be Useful: The Role of Linear Modeling and False Assumptions in Theoretical Explanation,” *Open Statistics and Probability Journal* 2 (2010): 1–8.

referred to as a “24-hour day,” an “epoch,” or something else.¹⁹ Nonetheless, it is clear that the “days” were used to convey a sense of structure or order. Is it curious for the Genesis author to say that “and there was evening and there was morning, the first day”? The Hebrew word for “evening” is “ereb” (ערב) and its root implies “to mix” and “disorder.” The Hebrew word for “morning” is “boqer” (בוקר) and its root means “to split” or “able to be discerned.”²⁰ In the beginning “the earth was a formless void and darkness covered the face of the deep” (Genesis 1:2). “Formless void” signifies chaos whereas “darkness” conveys the idea of confusion and disorder. Darkness is a pre-condition of creation. Thus, God called upon light to create the order (day) out of chaos (evening), transforming a dysfunctional mess to a functional system. In this sense, creation is about functional creation (i.e. bringing order out of chaos and disorder) rather than material creation.²¹

In many ANE mythologies, the primordial deep was the site of the rebellious gods who opposed the gods of order. For example, in the Babylonian myth of creation the goddess Tiamat, who represents oceanic waters, sets up an opposition force to fight against the heavenly assembly.²² Further, Genesis 1:21 mentioned that God created the great sea monsters. In ANE myths sea monsters often symbolized cosmic evil forces that fought against the dominating god and the existing order. For example, in a Canaanite myth, *Yam*, the god of the sea, was the enemy of the god of fertility, Baal.²³ But in Genesis, the sea and the creatures in the sea are placed under the order of God. The creative acts of God, separation or organization, had overcome chaos and disorder. However, unlike other ANE mythologies that portray the cosmos as a product of a cosmic battle, the Hebrew Bible does not imply that there was a primeval conflict between God and the sea. In alignment with Genesis 1:9–10, other Old Testament passages (Job 38: 8–11, Proverbs 8: 29, Psalm

19. During the 1990s the Presbyterian Church of America (PCA) published a report in an attempt to answer the seemingly incompatibility between modern scientific theory of the origin of the universe and the creation account in Genesis. According to the PCA report, there are at least four ways to interpret the word “day” in Genesis: 1. Calendar day: A creation day consists of 24 hours; 2. Day-age: Six days are actually six consecutive ages; 3. Framework: the creation week is a metaphor to the creative act of God; 4. Analogical day: Days in Genesis do not have any specified length. The PCA committee emphasized that all these views are compatible with orthodox Christianity. Hugh Ross, *A Matter of Days: Resolving a Creation Controversy* (Covina, CA: RTB Press, 2015), 4557–4567 Kindle.

20. Gerald Schroeder and Zola Levitt, *Genesis One: A Physicist Looks at Creation* (Dallas, TX: Zola Levitt Ministries, 1998), 144–146 Kindle.

21. John Walton. *The Lost World of Genesis One* (Downers Grove, IL: IVP Academic, 2009), 55–56.

22. John Hartley, *Genesis (Understanding the Bible Commentary Series)* (Grand Rapids: Baker Books, 2012), 1011–1013 Kindle.

23. Hartley, 2012, 1070–1071 Kindle.

104: 6–9) also depict God’s confinement of the sea as an act of absolute sovereignty.²⁴

If we put on a poetic lens instead of a scientific one, we can see the beauty and the structure of the “six days.” The first three days and the second three days are symmetrical. On the first day the light was separated from the darkness whereas the two light objects were made on the fourth day, echoing the first day. On the second day the waters above and under the dome were partitioned to set the stage for fishes and birds, which were created on Day 5. On Day 3 the earth was formed by separating the lands from the waters and thus living creatures and humankind could be created to inherit the earth on Day 6.

DID GENESIS COPY ANE MYTHOLOGIES?

As mentioned before, Babinski pointed out that several ANE creation myths depicted similar creation sequences to the Bible and also used similar wordings, such as separating the day from the night, forming the heaven and the earth, and setting boundaries. For example, in Tablet V of the Akkadian Epic *Enuma Elish* the following passage was found:

After he [had appointed] the days [to Shamash],
[And had established] the precincts of night and d[ay], . . .
He formed the c[louds] and filled (them) with [water].
The raising of winds, the bringing of rain (and) cold,
Making the mist smoke, piling up her poison; . . .
(Thus) he covered [the heavens] (and) established the earth
. . . .
(So) he created heaven and earth . . . ,
[. . .] their bounds . . . established.²⁵

Nevertheless, the resemblance between ANE mythologies and Genesis is only superficial. Walton correctly pointed out that many critics focus on the similarities between Genesis and ANE mythologies but overlook their difference. Similarities between different sources may imply a common cultural heritage rather than borrowing. Similarities might be found at the surface of the texts, but their underlying concepts could be vastly different. Hence, rather than making a simplistic assertion (e.g., the Bible author copied the

24. Millard, A.R. “A New Babylonian ‘Genesis’ Story,” *Tyndale Bulletin* 18 (1967):3–18.

25. James Pritchard, ed. *The Ancient Near East: An Anthology of Texts and Pictures* (Princeton: Princeton University Press, 2011), 36–37.

ANE text), it would be more fruitful to examine the Bible and the ANE mythologies in their wider literary and cultural context.²⁶

What is the major difference between Genesis and ANE texts? It is important to point out that ANE mythologies are concerned with theogonies, the origin or the genesis of gods. Bottero contended that no Mesopotamian creation myth addressed the issue of the origin of the entire universe, as found in Genesis.²⁷ Rather, typical ANE myths of creation are about how gods fight with each other. And the world yielded from the remains or the body parts of the dead gods. For example, the following is an excerpt of the Epic of *Enuma Elish* (Tablet IV) that describes a cosmic struggle and its aftermath:

She recites a charm, keeps casting her spell,
 While the gods of battle sharpen their weapons.
 Then joined issue Tiamat and Marduk, wisest of gods.
 They strove in single combat, locked in battle.
 The lord spread out his net to enfold her.
 The Evil Wind, which followed behind, he let loose in her
 face.
 When Tiamat opened her mouth to consume him,
 he drove in the Evil Wind that she close not her lips.
 As the fierce winds charged her belly,
 her body was distended and her mouth was wide open.
 He released the arrow, it tore her belly.
 It cut through her inside, splitting the heart.
 Having thus subdued her, he extinguished her life.
 He cast down her carcass to stand upon it.
 After he had slain Tiamat, the leader,
 her band was shattered, her troupe broken up; . . .
 The lord trod on the legs of Tiamat,
 With his unsparing mace he crushed her skull.
 When the arteries of her blood he had severed,

26. John Walton. *Ancient Near Eastern Thought and the Old Testament: Introducing the Conceptual World of the Hebrew Bible* (Ada, MI: Baker Academic, 2009), 436–441, 688–689 Kindle. Walton argued that it is a common mistake for scholars to lump all ANE cultures together while comparing them against the biblical narrative. Walton wrote, “Just as it would be foolish to think that all Europeans share the same culture, it would be a mistake to suppose that Babylonians, Hittites, Egyptians, Israelites, and Sumerians all shared the same culture. There would even be noticeable differences between the second-millennium Babylonians of Hammurabi’s time and the first-millennium Babylonians at the time of Nebuchadnezzar.” (447–449 Kindle).

27. Jean Bottero, *Religion in Ancient Mesopotamia*. Translated by Teresa Lavender Fagan. (Chicago: University of Chicago Press, 2001), 82.

the North Wind bore (it) to places undisclosed
That he might divide the monster and do artful works.
He split her like a shellfish into two parts:
Half of her he set up and ceiled it as sky,
Pulled down the bar and posted guards.
He bade them to allow not her waters to escape.²⁸

Obviously, the above creation epic that involves a war among gods is very violent and graphic. On the contrary, according to Genesis there is only one true God and thus wars among gods are absent from the account. Genesis 1 is a narrative of cosmogony, the origin of the world, not theogony. As Goldingay said, Genesis focuses resolutely on the beginning of the world and of humanity.²⁹

More importantly, those critics who charge that Genesis inherited and modified the ANE account of creation overlook the historical facts that the Pentateuch was compiled during the post-Babylonian exile, also known as the post-Babylonian captivity. In 538 BC the Southern Kingdom (Judah) was conquered by Babylon and since then the Jews lost their motherland. The trauma that the Jewish people went through could seem to indicate that the Babylonian gods had defeated the God of Israel.³⁰ Further, the final form of the Pentateuch, including Genesis, was not established during the brief period of the Babylonian exile. The compilation was an ongoing process spanning across the subsequent Persian period. The displaced Jews were highly aware that they were vulnerable to the oppression of foreign powers.³¹ Thus, it is questionable to say that the Jews accepted this humiliation by adopting the Babylonian and other foreign mythologies. A more plausible scenario is that the chosen people of God presented their own version of creation story as a counter-measure against the Babylonian myth and other foreign ideologies.³² This approach is known as “counter-text,” in which the plot of earlier

28. Pritchard, 31–32.

29. John Goldingay, *Genesis for Everyone* (Louisville, KY: Westminster John Knox Press, 2010), 5.

30. *Ibid.*, 9.

31. Walter Brueggemann, *An Introduction to the Old Testament* (Louisville: Westminster/John Knox, 2003), 22.

32. Kenton Sparks treated Genesis 1–11 as primeval history, which is a tradition found in Mesopotamian texts from the third millennium BCE. The language of primeval history is symbolic rather than literal. Specifically, the authors were interested in conveying theological or cultural messages instead of documenting historical events. The writing of the Old Testament could be a result of elite emulation. Israel experienced the humiliation of the Babylonian exile. In order to counteract the dominant culture of their oppressor, the Jewish authors composed genealogies that resemble the “king list” of the Babylonians. Thus, the Bible author of the genealogy of Genesis 5 is indeed an Ethnic Apologist. However, for the author it is unconvincing that Israelite authors would adopt the genre of their oppressors in their writing in order to restore their national pride. Kenton Sparks,

works that is familiarized by the audience is altered in order to present an alternate view.³³

Consider this analogy: Japan occupied Korea from 1905–1945, and no doubt the Korean culture was heavily influenced by the Japanese colonists. If we observe the posture and the movements of Korean Taekwondo and Japanese Karate, we might mistakenly draw the conclusion that the former “copied” the latter. Actually, Taekwondo is a form of native martial art that was developed to resist the Japanese occupation. Saying Genesis is adapted from the Babylonian myth is like mistakenly identifying Karate as the template for Taekwondo.

ONE SOVEREIGN GOD

In Genesis, there are signs indicating that the creation story of Israel was portrayed as a counterbalance against the Babylonian legend. For example, the Babylonian civilization invented astrology, and heavenly bodies were said to possess divine attributes. Specifically, each Babylonian god was given a star or a constellation as his own image.³⁴ However, Genesis demystifies all–natural objects and creatures, including the sun, the moon, fishes, birds, and animals. As mentioned before, it seems illogical to place the existence of the sun and the moon after the emergence of light. Actually, the biblical author intended to demote their cosmic status and religious significance by altering the sequence. Genesis tells us that God made “two big lights” without using the names “sun” and “moon.” A plausible explanation is that the author of Genesis did not want to associate these natural objects with any deity by naming them, because in ANE religions usually the sun god and the moon god were assigned specific names. For example, *Nanna* was the Sumerian moon god whereas *Utu* was the sun god.³⁵ Solar and lunar worship was also found in Palestine. For instance, the name of the place “Beth Shemesh” means the “Temple of the sun god” and “Jericho” means the “Shrine of the moon god.” Thus, Richard Hess asserted that the omission of the words “sun” and “moon” in Genesis expresses an anti–polytheistic polemic.³⁶ This theme is consistent with other verses in the Old Testament. For

“Genesis 1–11 as Ancient Historiography,” in *Genesis: History, Fiction, or Neither?: Three Views on the Bible’s Earliest Chapters*, ed. James K. Hoffmeier and Gordon John Wenham (Grand Rapids, MI: Zondervan, 2015), 107–153.

33. Walton, *Ancient Near Eastern Thought*, 633–643 Kindle. John Walton cited out another counter–cultural example in the Old Testament: The Book of Job. The friends of Job represent a common ANE theology that views human suffering as a divine punishment, but Job maintains his integrity by not accepting the mentality recommended by his friends (575–581 Kindle).

34. Bottero, 69.

35. *Ibid.*, 46.

36. Richard Hess, *Israelite Religions: An Archaeological and Biblical Survey* (Grand Rapids: Baker Academic, 2007): 172.

example, “And when you look up to the sky and see the sun, the moon and the stars—all the heavenly array—do not be enticed into bowing down to them and worshipping things the Lord your God has apportioned to all the nations under heaven” (Deuteronomy 4:19). In other words, in the eyes of the biblical authors no member of the created order should be considered a deity.³⁷

Because in the ANE culture natural objects were worshipped as gods, it is not surprising to see that polytheism was the norm in the ANE.³⁸ This community of gods is known as the “pantheon.” Babylonian scholars compiled almost two thousand names that represent Babylonian gods. Usually these gods reigned over a specific domain of nature or/and specific place. For example, *Nanna* ruled Ur; *Utu* dominated Arsa and Sippar.³⁹ As mentioned before, the Babylonian creation myth started with a cosmic war among gods. It is very common that in the ANE worldviews the cosmos was partitioned into good deities and monstrous divine powers that threatened humans. For instance, *Yamm* is responsible for the demise of Kirta’s household and *Mot* is well-known for his destructive power.⁴⁰ Interestingly, no such division is found in Genesis. After every creative act “God saw it was good.” This phrase contains a very important theological implication: the created order is inherently good and thus there is no confrontation between God and the evil force before the fall of Adam and Eve; everything in the world came from God’s creation and is under His control.⁴¹

HUMANKIND IS MADE IN THE IMAGE OF GOD

The creative acts of God reached a crescendo when humankind was created on the sixth day. Previously “God saw it was good,” but on Day 6 “God saw it was very good” (Genesis 1:31). When Genesis 1 said that God created humans in His image, it means all humankind, not Israelites only. This dig-

37. Hartley, 940 Kindle.

38. Some scholars, such as E. A. Knauf and B. Lang, argued that the pre-exilic Hebrew religion, like their surrounding neighbors, was also polytheistic. It was evidenced by mentioning other gods in the Bible, and thus Yahweh was just the most powerful God in the eyes of the Jews. However, mentioning is very different from recognizing. Today some Christian books discuss Islam and Buddhism, but one must look deeper into the context to find out what the naming and mentioning mean. Othmar Keel and Christoph Uehlinger said, “the texts say nothing about whether these deities were venerated any way in Israel and Judah—whether that be carried on in a public cultic setting or else in family or even in personal and private piety. The texts do not indicate that these deities were merely concerned with and active on behalf of other peoples or groups” Othmar Keel and Christoph Uehlinger, *Gods, Goddesses, and Images of God in Ancient Israel*. Translated by Thomas H. Trapp. (Minneapolis: Fortress Press, 1998): 3.

39. Bottero, 45–53.

40. Mark S. Smith, *Origins of Biblical Monotheism: Israel’s Polytheistic Background and the Ugaritic Texts* (Cary: Oxford University Press, 2001), 31.

41. Donald Gowan, *From Eden to Babel: A Commentary on the Book of Genesis 1–11* (Grand Rapids: Eerdmans, 1988), 5.

nity applies to all people, not to a particular nation or ruling class. ANE texts from Egypt and Mesopotamia also use the phrase “image of God” on some occasions. For example, some ancient Egyptian texts referred to the Pharaoh as the image of God. The purpose is to emphasize that the Pharaoh was god incarnate and the son of the god *Re*. Some Ancient Mesopotamians also associated a monarch with the image of god, but this honor aimed to legitimize the royal status of the king and defined his role as the god’s representation in the kingdom. In Mesopotamia, this title was sometimes applied to a high official, too. On the contrary, Genesis asserted that all humans are created in God’s image.⁴²

Generally speaking, ANE cultures had a very different concept about the relationship between God and humans. Akkadians and Sumerians are two earliest people in Mesopotamia, dating back to BC 4000. Both Akkadians and Sumerians have mythology to explain how the gods created the world and humans. According to the Atrahasis tale, there are two types of gods: superior and inferior gods. Sumerian gods Anu, Enlil, and Enki are considered superior gods. Enlil assigned inferior gods to do farm labor and maintain the rivers and canals, but after forty years the lesser gods rebelled against the superior gods and refused to work anymore. As a remedy, Enki suggested creating humans to do the work. In Enlil’s eyes, humans are nothing but expendable servants. They were brought into existence for gods’ benefits only.⁴³ In the legend the gods told the Mother-goddess (Nintu or Mami), “Create a human to bear the yoke. Let him bear the yoke, the task of Enlil, let man carry the load of the gods.”⁴⁴

Genesis is vastly different from ANE mythologies. In Genesis, humans are treated respectfully. Resources are ready for human consumption without great labor. According to Hartley, Genesis conveys several core ideas with regard to humankind. First, God commissioned humans to take care of the earth. In Genesis 2, God endowed humans with intellectual capabilities that mirror God’s wisdom. This is manifested by granting humans that they exercise dominion over the earth and its animals (Genesis 1:26, 28), by Adam’s cultivation of the garden (Genesis 2:15), and also by Adam naming the animals (Genesis 2:19–20). In Genesis 3:8, humans “heard the voice of the LORD God walking in the garden in the cool of the day.” This suggests that humans and God were close friends. Second, in resting on the seventh day God provided a regular rhythm for humans to enjoy the created order. These notions aim to counter false worldviews, including dualism, astrology, nihilism, and any philosophy that devalues humankind.⁴⁵

42. Hartley, 1228–1232 Kindle

43. Bottero, 99–103.

44. Millard, 9.

45. Hartley, 940 Kindle.

If Genesis is nothing more than an inheritance or modification of ANE mythologies, how could the biblical authors acquire the idea that humans have dignity due to the image of God? Indeed, this concept has become the foundation of Western moral codes. If humans are nothing more than materials, then using humans like using tools is not inherently immoral. However, we should treat humans as the end, not the means. The ultimate rationale is: We believe that humans have inalienable rights and dignity, because we are created in the image of God. Genesis 9:6 is very explicit about this point: “Whoever sheds the blood of a human, by a human shall that person’s blood be shed; for in his own image God made humankind.”

A LOVING GOD

Given that humans were created for slavery, according to ANE mythologies, it is not surprising to see that the concept of a loving god is hardly found in the ANE texts. In contrast, God’s love and providence was prevalent in Genesis. On the sixth day God created humankind. “God blessed them, and God said to them, ‘Be fruitful and multiply, and fill the earth and subdue it’” (Genesis 1:28). The concluding remark is: “It was very good” (Genesis 1:31). In the creation account described in Genesis 2, “God formed every animal of the field and every bird of the air, and brought them to the man to see what he would call them.” And then God created a helper for the man. The creation account of a partner for Adam is beautifully poetic. Dennett’s mockery of the literal meaning is missing the main point. The imagery “bone of my bones and flesh of my flesh” symbolizes the intimate union of the couple, which results from God’s love. In addition, even though humans sinned against God by eating the forbidden fruit, “God made garments of skins for the man and for his wife and clothed them” (Genesis 3:21).

Conversely, many ANE religions are fear-based. The deity was viewed as some powerful being that was inaccessible and dominating. For example, in the Epic of Gilgamesh when Gilgamesh took a nap on his way to the Cedar Forest, a nightmare awoke him. He then asked his companion Enkidu: “Why am I so disturbed? Did a god pass by? Why are my muscles trembling?” Gods were fearsome beings and humans were not supposed to be close to gods or obtain peace and happiness from them. Gods were distant masters, but not our friends. Humans could submit to them, but not to love them, and vice versa.⁴⁶

To be sure, “love” is not totally absent from ANE legends. But the form of love is more associated with human lust than divine love. As mentioned before, both Hitchens and Boyer asserted that the concept of God was our projection or invention. It is true to some extent. We could find many human characteristics among ANE gods. *Istar* is a good example. *Istar* was often modeled after those women who enjoyed “free love.” In the Epic of

46. Bottero, 37.

Gilgamesh *Istar* seduced Gilgamesh by trying to attract him into her bed. In a Babylonian hymn from the beginning of the second millennium, there was such a verse in the praise of the goddess: “Sixty then sixty satisfy themselves in turn upon their nakedness. Young men have tired, Istar will not tire.”⁴⁷ In brief, the image of God in Genesis is in sharp contrast to the ANE gods.

Further, although blessings from God could be found in certain ANE texts, they by no means portray a loving God. For example, in some texts the gods of Ugarit were asked to bestow blessing. And also *Baal* asked *El* to confer his blessing upon King Kirta. It is common that god’s blessings were addressed to deceased royal ancestors, too. Some deities that were the patrons of a particular group or tribe might be asked to curse others. For instance, *Horon* was invoked by Kirta to smash his rebellious son.⁴⁸ In short, these gods were like certain deities in many folk religions. They were “used” by humans for self-serving purposes.

DID GENESIS BORROW IDEAS FROM THE MEMPHITE THEOLOGY OF CREATION?

One of the seemingly compelling arguments against the uniqueness of Genesis is the resemblance between the Memphite theology of creation and Genesis. The city of Memphis was the place where Upper Egypt and Lower Egypt were united, and the Temple of *Ptah* was built there. According to the legend, *Ptah* created the universe with his mind (heart) and brought the world into existence by his speech (tongue). It is known as the Logos doctrine.⁴⁹ At first glance, the commanding speech looks like how God created the world in Genesis. But the similarity ends here. In the Memphite account *Ptah* thought and spoke together. The thought–process came first and the words came later. But in Genesis God did not go through a thought process, implying that He is Omniscient. According to Brueggemann, the phrase “God said” has a special meaning in Genesis. God calls the world into being to be his faithful world, and it is in parallel to later calling Israel to be his faithful people. This “saying” or “calling” has a rich theological implication: it entails a promise. God promised to take care of the created order and His people.⁵⁰ Whatever God says is as firm as a promise. Further, while the Bible records the worldwide flood, Egypt does not have a flood story. This absence implies that ancient mythology is not always transmitted from one culture to another neighboring culture.⁵¹

47. Bottero, 67.

48. Smith, 30.

49. Pritchard, 1–2.

50. Walter Brueggemann, *Genesis*. (Louisville, John Knox, 1982), 1.

51. James Hoeffmeier, “Genesis 1–11 as History and Theology,” in *Genesis: History, Fiction, or Neither?: Three Views on the Bible’s Earliest Chapters*, ed. James K. Hoffmeier and Gordon John Wenham (Grand Rapids, MI: Zondervan, 2015), 21–71.

More importantly, there is one and only one God in the Genesis account and nothing else in the created order were said to possess divine qualities. However, in the Memphite story *Ptah* transmitted life to all gods. The gods *Horus* and *Thoth* are equated with the organs of thought and speech. It was believed that the heart and the tongue could control other parts of the body, and thus *Ptah* was in every body and in every mouth of all gods and all other creatures. The most important point is that *Ptah* assimilated all gods in Upper Egypt and Lower Egypt.⁵² Therefore, this creation myth might be both religious and political in nature.

CONCORDISM

The preceding interpretation of Genesis is by no means the best one or the correct one. As a matter of fact, there are diverse perspectives of the creation account and other related passages in the Bible. For example, rather than reading Genesis and other descriptions of the nature in the Bible through only a poetic and theological lens, some Christian apologists insist that Scripture as the Word of God must contain scientific truths. It is important to point out that while these scholars accept the theological layer of the text, they also insist that the scientific layer of those passages can affirm the validity of Scripture. This approach of harmonizing the Bible and science is known as concordism. For example, Jewish physicist Gerald Schroeder asserted that through the lens of science it is entirely possible for God to create the world in six days. As Psalm 90: 4 says, “A thousand years in your (God) sight are like a day that passes.” Genesis 1 describes God’s time but from Adam forward, we experience human time. Hence, the 15–billion years in science and the six days in Genesis are the two sides of the same coin.⁵³

Although Canadian Christian astronomer Hugh Ross rejected young–earth creationism, he still interpreted Genesis in a scientific fashion. He wrote:

Laypeople sometimes express surprise that the approach to literary, and particularly Bible, interpretation so closely resembles the approach best known as the scientific method. The surprise evaporates, however, when one recognizes that *Genesis* 1 reads like a primer on the scientific method: an opening statement identifying the frame(s) of reference (or points of view) and initial conditions, followed by an orderly description of a sequence of events, followed by a statement of the final conditions, and closing with some conclusions.⁵⁴

52. Pritchard, 1–2.

53. Gerald Schroeder. *The Science of God: The Convergence of Scientific and Biblical Wisdom* (New York: Broadway Book, 1997): 50–59.

54. Ross, *Days*, 1075–1079 Kindle

Ross argued that the creation account of Christianity goes beyond Genesis 1 and 2, and many people overlook 21 other creation-relevant passages in the Bible, such as Psalms and the Book of Job. When all these passages are taken into consideration, one can see, according to Ross, that the creation account of the Bible is consistent with modern scientific theories.⁵⁵

Further, according to Job 9:8, “He (God) alone stretches out the heavens and treads on the waves of the sea.” The Hebrew verb “stretches” (Natah) implies an ongoing expansion. In Ross’s view, this verse entails the knowledge of an expanding universe. However, not until the twentieth century did any scientist know about an expanding universe. Hence, Ross contended that the scientific information in Book of Job must be encoded under divine intervention.⁵⁶ Ross quoted Job 38:19 to further support his argument: “What is the way to the abode of light? And where does darkness reside?” Ross stated that in this passage God treats darkness as if it is an entity residing in the universe. Before the late 20th century, scientists viewed darkness as nothing more than the absence of light. However, recently astronomers discovered that the universe is full of dark matter and dark energy. Roughly 68% of the Universe is characterized by dark energy whereas dark matter makes up about 27% of the universe. Dark matter is an invisible matter that does not emit light or energy while dark energy is a property of space. After the big bang, the universe keeps expanding in all directions. In the past, scientists thought this expansion would eventually cease due to diminishing energy. Surprisingly, studies of distant supernovae revealed that the speed of expansion is increasing due to dark energy that continues to fuel the expansion. According to Ross, the Book of Job foretold dark matter and dark energy.⁵⁷

However, this type of scientific concordism is subject to the fallacy of apophenia: a psychological tendency to attribute meaning to perceived connections between unrelated matters. People can easily find some evidence to confirm their preconceived hypothesis. In psychology this is also known as confirmation bias. Are the theories of big bang, dark matter, and dark energy in alignment with the creation account in the Bible?

Let’s walk through a brief review of how scientists contributed to the discovery of the notion of an expanding universe. In 1924 Alexander Friedmann developed the mathematical model for cosmogony. Belgian priest, George Lemaître, proposed what became known as the big bang theory in 1927. The big bang theory is supported by Edwin Hubble’s discovery of the Red Shift phenomenon in 1929. In 1932, Willem de Sitter collaborated with Albert Einstein to propose an exponentially expanding, empty universe. After Edwin Hubble died in 1953, his student Allan Sandage continued Hubble’s

55. Ross, *Days*, 1105–1108 Kindle.

56. Hugh Ross, *Hidden Treasures in the Book of Job: How the Oldest Book in the Bible Answers Today’s Scientific Questions* (Covina, CA: RTB, 2011), 56–58.

57. *Ibid.*, 60–62.

research. A year later Sandage revised the estimate of the Hubble constant. In 1964, the big bang theory was further supported by Arno Penzias and Robert Wilson's discovery of the cosmic microwave background radiation, which previously had been predicted from calculations based on the assumption that the universe originated via the big bang.⁵⁸

However, none of the above scientists ever said that their research was connected with the Book of Job. On the contrary, even though Lemaître was a Catholic priest, Lemaître was opposed to Pope Pius XII's proclamation that the theory of cosmic expansion could scientifically validate Catholicism.⁵⁹ Rather, he asserted that there was neither a connection nor a contradiction between the big bang theory and Catholicism. Edwin Hubble was raised as a Christian, but as he grew up, he became skeptical of his faith and eventually distanced himself from religion.⁶⁰ Although Allan Sandage was a born-again Christian, he explicitly stated that his religious conversion did not occur because of reasoning or intellectual inquiry. Rather, he acted on the will to believe.⁶¹ Arno Penzias is a Jew. While it is very tempting to draw a connection between this discovery and the Old Testament, Penzias explicitly rejected this connection. He admitted that he didn't experience any tie between his spiritual progress and his scientific research. Besides denying this connection, he went even further to say, "I have no problem with scientists saying that there is no God. But for them to say, "This is God," annoys me. It is blasphemy. It annoys me because they're misusing the word, which is at the very least disrespectful. They haven't got a clue what God is."⁶²

Similarly, no scientist ever declared that their research on dark matter and dark energy was related to Book of Job. Jewish scientist Vera Rubin played a key role in discovering dark matter. In 1996, when Rubin was interviewed by the Catholic EWTN network, she dissociated her faith and her scientific research by saying: "In my own life, my science and my religion are separate. I'm Jewish, and so religion to me is a kind of moral code and a kind of history. I try to do my science in a moral way, and, I believe that, ideally, science should be looked upon as something that helps us understand our role in the universe."⁶³ Alan Guth is credited as one of the scientists who

58. Joseph Silk, *The Big bang* (New York: W. H. Freeman, 2001), 9–28, 71–78.

59. Peter T. Landsberg, *Seeking Ultimates: An Intuitive Guide to Physics* (Boca Raton, FL: CRC Press, 1999), 236.

60. Gale E. Christianson (1996). *Edwin Hubble: Mariner of the Nebulae* (Chicago, IL: University of Chicago Press), 183.

61. William Durbin, "Negotiating the Boundaries of Science and Religion: The Conversion of Allan Sandage," *Zygon* 38 (2003): 71–84.

62. Mark Richardson and Gordy Slack, *Faith in Science* (New York: Routledge, 2001), 18–34.

63. Associate Press, "Pioneering Jewish Astronomer Vera Rubin Dies Aged 88," *The Times of Israel*, Dec 26, 2016, <https://www.timesofisrael.com/pioneering-jewish-astronomer-vera-rubin-dies-at-88/> (accessed November 30, 2017)

advocated the theory of dark energy. However, he declared that he saw no evidence of design in the universe and thus invoking a designer would not help advance science at all.⁶⁴ We can easily find some verses in the Bible that seem to be compatible with modern scientific concepts. However, this type of retrofit has no predictive power at all. Specifically, it is not the case that scientists predicted cosmic expansion, dark matter, and dark energy based on their biblical knowledge. Rather, Christian apologists claimed the credit after the fact.

It is important to point out that in the Book of Job there are verses that appear to contradict with modern science. For example, Job 38: 4 told us, “Where were you when I (God) laid the earth’s foundation?” Atheists quoted this verse to accuse the Bible of supporting the notion of an unmoved earth. Ross wrote, “Exactly what this Hebrew phrase means cannot be precisely determined. It may refer to the formation of Earth when it first became recognizable as a planet. It may refer to that moment when the buildup of Earth’s mass was complete. It may refer to that era in Earth’s history when liquid water covered the planetary surface or perhaps to the time when landmasses first appeared.”⁶⁵ When the data are not favorable, Ross suggested that the exact meaning is uncertain. But how could he be so sure about the meanings of “stretch” and “darkness” in Job 9:8 and 38:19, respectively? Cherry-picking data does not advance Christian apologetics.

Besides Job 38: 4, Psalm 104: 5 (He [God] set the earth on its foundations, so that it should never be moved) was also quoted as evidence to support the notion that the earth is a stationary entity. No wonder during the 16th and 17th centuries when Copernicus and Galileo introduced the heliocentric model of the universe, some Catholics and Protestants disputed this idea. In their view, the prevailing Aristotelian geocentric model, which regarded earth as the immobile center of the universe, seemed to be in alignment with the Bible. The rest is history. However, British Christian mathematician John Lennox defended the scientific soundness of Scripture by defining the meaning of stability as follows:

God the Creator has built certain very real stabilities into the planetary system that will guarantee its existence so long as is necessary to fulfill his purposes. Science has been able to show us that the earth is stable in its orbit over long periods of time, thanks in part to the obedience of gravity to an inverse square law, to the presence of the moon, which stabilizes the tilt of

64. Alan Guth, “Problems with the Argument from Design,” *Counter Balance*, nd, <http://www.counterbalance.org/cqinterv/cq1-64-body.html?b=cqinterv/ag-body.html> (accessed November 30, 2017)

65. Ross, *Job*, 47.

earth's axis, and to the existence of the planet Jupiter, which helps keep the other planets in the same orbital plane.⁶⁶

No matter whether the earth is immovable or orbiting around the sun, those Bible verses are still considered compatible with science. However, if a theory can never be falsified, then it has no scientific merit.⁶⁷ Retrospectively fitting scientific data into Bible verses is easy. The litmus test of concordism is whether today Christian scientists can develop a predictive scientific theory based on the Bible, and have the theory verified with empirical data in the future.

Attempting to defend Christianity by mapping Bible verses and scientific concepts would discredit Christianity. Skeptics and atheists could use these examples to portray Christians as opposed to science. As mentioned before, some Christian apologists cited the big bang theory to substantiate the scientific value of Genesis because the universe, as indicated by science, has a beginning. In response, Michael Ruse wrote,

Christians have long been in the business of interpreting things allegorically, and the point is that in both Big bang story and the *Genesis* story we have a beginning. The problem, rather is that if the science changes or is modified, then you may well find that you have committed to something that is not religion-friendly. In this case, if pre-Big bang stories gain traction, you are worse off than before.⁶⁸

Ruse raised a valid point. What would happen if someday scientific data supports the cosmogony that the universe has no definite beginning; rather, our existing universe is one of many worlds in unceasing cycles of cosmic expansion and contraction? Christian apologists might cite other Bible verses or re-interpret the verses that previously supported the outdated cosmogony in order to accommodate the new theory. No doubt, this approach would lead to a dead end.

Further, some unnecessary conflicts between Christian faith and science could have arisen from over-concentrating on the apparent differences between the Bible and modern science. Take the late cosmologist Stephen Hawking as an example. Many evangelicals dislike Hawking's high-profile atheism. After Hawking's death on March 14, 2018, Rev. Franklin Graham immediately posted the following message on Facebook:

66. John C. Lennox, *Seven Days That Divide the World: The Beginning According to Genesis and Science* (Grand Rapids, MI: Zondervan, 2011), 33.

67. Karl Popper, *The Logic of Scientific Discovery* (London: Routledge, 1959).

68. Michael Ruse, "In the Beginning," in *Science, Evolution, and Religion*, ed. Michael Peterson and Michael Ruse (New York: Oxford University Press, 2017), 71.

World-renowned physicist Stephen Hawking died today at age 76. He once said, “I regard the brain as a computer which will stop working when its components fail. There is no heaven or afterlife for broken down computers; that is a fairy story for people afraid of the dark.” I wish I could have asked Mr. Hawking who he thought designed the human brain. The designers at HP, Apple, Dell, or Lenovo have developed amazing computers, but none come even close to the amazing capabilities of the human mind. Who do you think designed the human brain? The Master Designer—God Himself. I wish Stephen Hawking could have seen the simple truth that God is the Creator of the universe he loved to study and everything in it. The Bible says, “You alone are the Lord. You have made the heavens, the heaven of heavens with all their host, the earth and all that is on it, the seas and all that is in them. You give life to all of them and the heavenly host bows down before You” (Nehemiah 9:6).⁶⁹

For Graham and his like-minded evangelicals, modern science must be harmonious with the Bible and thus any discord is considered problematic. Interestingly, the Catholic Church is friendly to Dr. Hawking despite their divergent views to cosmogony. In 1975 Hawking was appointed by the Pope to be a member of the Pontical Academy of Sciences. After Hawking passed away, Cardinal Vincent Nichols of Westminster said, “We thank Stephen Hawking for his outstanding contribution to science. As a member of the Pontical Academy of Science, he will be missed and mourned there, too.”⁷⁰ Why did the Catholic Church highly praise such an atheistic scientist? Bluntly speaking, the Catholic Church does not adopt a concordist position. In 2014 Pope Francis went beyond the seemingly discord between modern physics and the Bible by declaring that the Big Bang is an act of God’s love.⁷¹ In a similar vein, Vatican astronomer and Jesuit Brother Guy Consolmagno said, “the ‘god’ that Stephen Hawking doesn’t believe in is one I don’t believe in either . . . God is not just another force in the universe, alongside gravity or electricity . . . God is the reason why existence itself exists. God is the reason why space and time and the laws of nature can be present for the forces to operate that Stephen Hawking is talking about.”⁷² Instead of seeing the sur-

69. Franklin Graham. Facebook <https://www.facebook.com/FranklinGraham/posts/1856143161108523> (accessed March 15, 2018)

70. Carol Glatz, “Church Leaders Praise Hawking for Contribution to Science, Dialogue,” *Crux: Taking the Catholic Pulse*. March 14, 2018 <https://cruxnow.com/global-church/2018/03/14/church-leaders-praise-hawking-for-contribution-to-science-dialogue/> (accessed March 17, 2018).

71. Ary Waldir Ramos Diaz, “When Religion (Pope Francis) Met Science (Stephen Hawking),” *Ave Maria Radio*. March 14, 2018. <https://avemariaradio.net/religion-pope-francis-met-science-stephen-hawking/> (accessed on March 17, 2018).

72. Carol Glatz, “Stephen Hawking was a Longtime Member of the Pontifical

ficial discrepancy between the creation account in Genesis and Hawking's cosmogony, Guy Consolmagno dug deeper into the conceptual level.

WELL-ORDERED UNIVERSE

One important theological message of Genesis is the created cosmic order founded by the Creator. Although I am opposed to mapping Bible verses to scientific theories by superficial resemblance, it doesn't necessarily imply that the Christian faith has nothing to contribute to science and other disciplines. In Christian ethics, the belief of the creation order makes objective morality possible. By the same token, the creation account described in Genesis conveys the message that this universe emerged from chaos to order, resulting in the rise of objective science. As mentioned earlier, ANE mythology regarded natural objects as gods, paving the way to pantheism. This type of mystical worldview does not facilitate scientific inquiry. Penzias said, "I don't behave as if gremlins exist in the world. Although sometimes I have to remind myself of that. Sometimes I think the piece of paper I've lost must have disappeared even though I know that it profits no one to think of evil spirits under those circumstances."⁷³

Because of the existence of a natural order, as implied by the creation account in the Bible, nature is considered knowable and hence objective science becomes possible. This is a plausible explanation for why modern science was developed in the Christian West, but not in the Islamic civilization. During the 9th and 10th centuries Muslim scholars refused to translate the full text of Plato's *Timaeus*, which was embraced by St. Augustine as a rational exposition of creation. The Christian West viewed the world as a system of connected parts, but Muslims adopted an anti-cause ontology.⁷⁴ For example, based on the conviction that God does whatever he wills, prominent Muslim philosopher al-Ghazālī argued that all seemingly causal chains are the immediate and present Will of God, not the result of material conjunctions. When a cotton is burned by fire, we might explain the event in terms of natural laws. But for al-Ghazālī the cotton was burned just because Allah willed it to happen.⁷⁵

The created cosmic order illustrated in Genesis and other Bible verses is the key to the rise of modern science. As Stark points out, "In contrast

Academy of Sciences," Catholic Herald, March 14, 2018. <http://www.catholicherald.co.uk/news/2018/03/14/stephen-hawking-was-a-longtime-member-of-the-pontifical-academy-of-sciences/> (accessed on March 17, 2018).

73. Mark Richardson and Gordy Slack, 2001, 23–24.

74. Toby Tuff, *The Rise of Early Modern Science: Islam, China, and the West* (New York: Cambridge University Press, 2017), 103–110.

75. Abū Ḥāmid Muḥammad ibn Muḥammad al-Ghazālī, *Incoherence of the Philosophers* (Lahore: Pakistan Philosophical Press, 1963), <http://www.ghazali.org/works/taf-eng.pdf>

with the dominant religious and philosophical doctrines in the non-Christian world, Christians developed science because they believed it could be done, and should be done.⁷⁶ John Polkinghorne went one step further to assert that creation and providence go hand in hand. Specifically, God is as much Creator today as he was 15-billion years ago. In Polkinghorne's view, epistemology models ontology. In other words, what and how we can know depends on what is out there. Because of God's creation and providence, the world out there is so intelligible that we could unlock the secret of the universe by mathematics.⁷⁷

One may question how the preceding notion is different from concordism. If it is considered problematic to retrofit modern scientific concepts into Bible passages, is it equally unsettling to attribute the scientific premise to the biblical worldview of created cosmic order? Edwin Hubble, Vera Rubin, and Alan Guth did not say that their research is inspired by or grounded on the Bible. In a similar vein many modern secular scientists denied the creation order, yet they accomplished remarkable scientific breakthroughs. This is a legitimate challenge. In response to Polkinghorne's notions, agnostic scientist Jack Dodd wrote,

As far as I am aware, all the accepted laws of nature plus the fuzziness of nature seem to work. I see no hand of God there . . . There may well be laws of nature. It is certainly the case that our observations of the world and universe around us lead us to believe that there are some underlying principles behind the structure and behavior of the things that we observe. It is beyond the powers of mankind, however, ever to be sure that we have found out what they are. What we know about are facts and observations . . . But note that, although our confidence in the hypothesis-theory-law may increase, there is no sense in which we can ever say "the law is proved." There is no such thing as scientific truth.⁷⁸

As a statistician I fully understands what Dodd meant. At most, hypothesis testing could confirm that the data and the model fit each other. As long as there are rival theories that could also fit the data, the proposed theory is never proven. However, how could this well-known "under-determination

76. Rodney Stark, *For the Glory of God: How Monotheism Led to Reformations, Science, Witch-Hunts, and the End of Slavery* (Princeton, NJ: Princeton University Press, 2003), 147.

77. John Polkinghorne, "Theological Notions of Creation and Divine Causality," in *Science and Theology*, eds. Murray Rae, Hilary Regan, and John Stenhouse (Grand Rapids, MI: William Eerdmans, 1997), 225-237.

78. Jack Dodd, "Response by Jack Dodd," in *Science and Theology*, eds. Murray Rae, Hilary Regan, and John Stenhouse (Grand Rapids, MI: William Eerdmans, 1997), 238-246.

of theory by data” deny the existence of scientific laws or natural order?⁷⁹ At most uncertainty and fuzziness of scientific theories and laws could lead to intellectual humility and openness, but it is a leap of faith to deny the existence of scientific truth. In other words, if I am unable to find the truth, it does not logically entail that there is no truth. Dodd attempted to downplay the concept of law and order by switching them to facts and observations. However, do we need regular patterns in the universe to obtain facts and observations? In short, no matter what you call it, the created cosmic order laid out in the biblical creation account is the indispensable foundation of scientific inquiry.

CONCLUSION

Genesis was not intended to be a scientific paper or a historical account in a modern sense. It is unfortunate that many Christians who subscribe to the literal meaning of Genesis are unable to face the challenges posed by secular writers. It is important to recognize the distinction between mythos and logos so that Genesis can be interpreted in the proper way. Additionally, the creation sequence by day should not be treated as a series of facts; rather, the hidden message is that order came from the creator. Instead of viewing Genesis as one of many ANE myths, it is logical to treat it as a countermeasure against the ANE myths. Genesis distinguishes itself from other myths by denying the divine properties of natural objects and creatures, which paved the way to a created cosmic order embedded in modern science. Moreover, the ideas that humankind is made in the image of God and the Supreme Being is a loving God are foreign to the ANE civilizations. Further, although there are some striking resemblances between the Memphite creation story and Genesis, Genesis is still outstanding for lacking the concept of polytheism or a political motive.

Is Genesis unscientific? This is the wrong question! The bottom line is: Do we have to interpret the Bible in a scientific fashion? Did God come to us as a professor of physics or astronomy? According to Lamoureux, in ancient times God came down to His audience level by using the science-of-their-day. Lamoureux explains this idea by using the following metaphor: When a four-year old child asks his parents where babies come from, instead of giving him a biology lecture, his parents must use the language that the child could understand. God is such a loving father.⁸⁰ Nonetheless, even though the Bible was not written in scientific terms, it does not necessarily imply the absence of connection between Christianity and science. Rather, the connection happens in a higher level: the created cosmic order becomes the foundation of objective science.

79. W. Quine, *From a Logical Point of View* (Cambridge, MA: Harvard University Press, 1951), 20–46.

80. Denis Lamoureux, *I Love Jesus and I Accept Evolution* (Eugene, OR: Wipf & Stock, 2009), 1338–1339 Kindle.