

An Adventist Approach to the Sciences

By Timothy G. Standish

Introduction – Why NOMA and Christianity are incompatible

The U. S. National Academy of Sciences and many others claim that there is no conflict between faith and science because, “Science and religion are different ways of understanding. Needlessly placing them in opposition reduces the potential of both to contribute to a better future.”¹ Separation of science and religion into different non-overlapping domains of knowledge is not new. Only a few years ago Stephen Jay Gould proposed the same idea, which he dubbed Non-Overlapping MAgisteria (NOMA).² NOMA is essentially an extension of the postmodernist fragmentation of knowledge. Its central claim is that “science and religion *cannot* be incompatible, because they concern nonoverlapping domains of knowledge.”³

NOMA cannot work within a Christian worldview because it directly contradicts the Christian understanding of a unity of knowledge embodied in one God, one faith and one Truth. The Christian quest is not to divide knowledge into autonomous entities that do not inform one another, but rather to recognize and be informed by areas in which tension exists between branches of knowledge like science and theology. To the degree that theology emphasizes revealed knowledge and science emphasizes empirical knowledge and both rely on human logic, tension between the two areas is inevitable, but this does not logically imply that they lack the potential to inform each other. Theological claims impinge on the empirical world and rapidly become meaningless if they are placed in universes separate from the one in which humans live and operate. Further, science informs our thinking about ethics, morals, the value of life and the wisdom of the Creator. Separating science from faith renders both less relevant to human existence, denies the ultimate unity of Truth and prevents different branches of knowledge from informing one another. This seems a high cost to circumvent inevitable tensions between science and theology.

How Worldviews Impact Definitions of Science

The way Christians do science is not dramatically different from the way anyone else should do science. This is, in part, because modern science arose in a Christian culture and is dependent in many respects upon a Christian worldview. Accumulated empirical data forms the basis of theories, and hypothesis logically deduced from these theories are tested against more empirical data. The difference between Christians doing science and people of other faiths doing science ultimately comes down to their worldview, the questions that worldview stimulates them to ask and the theories they are willing to

¹ National Academy of Sciences, Institute of Medicine. 2008. *Science, Evolution and Creationism*. The National Academies Press, Washington, DC. P 47.

² Gould, SJ. 1999. *Rocks of Ages*. Ballantine Publishing Group, New York.

³ Ayala *Ibid* p X, italics in original. Almost exactly the same words are used on page 91.

entertain within the Christian worldview. All worldviews are at tension with empirical data and all have means of resolving those tensions. For an atheistic materialist, the design evident in nature requires a naturalistic explanation irrespective of the data. The constraints of time and space put bounds on what can be reasonably expected of the universe and the very existence of the universe demands an explanation that, within the materialistic worldview, must *a priori* exclude anything supernatural.

The worldview of atheistic materialism demands certain answers irrespective of the empirical data and so does theism, particularly the form of theism practiced by Christians, although Christianity does not constrain explanations in the way materialism does. Within the Christian worldview, the Adventist worldview is tied to a specific view of Scripture and inspiration.

The Adventist View of Scripture – Struggling with Inspiration

Adventists claim that the Bible is the inspired word of God. What precisely this means is spelled out in general terms in the church's statement of fundamental beliefs:

In this Word, God has committed to man the knowledge necessary for salvation. The Holy Scriptures are the infallible revelation of His will. They are the standard of character, the test of experience, the authoritative revealer of doctrines, and the trustworthy record of God's acts in history.⁴

Within this statement, certain confident sounding but vague words are used, presumably to provide wiggle room about what is actually meant.⁵ This statement, which is part of the first fundamental belief listed in the “Seventh-day Adventist Fundamental Beliefs,” serves as a clarification of the document's preamble which begins: “Seventh-day Adventists accept the Bible as their only creed and hold certain fundamental beliefs to be the teaching of the Holy Scriptures.” Adventists follow in the American tradition prevalent during the late eighteenth and nineteenth century, declaring the church has “no creed but the Bible.”⁶ The potential for internal dissonance of such a credal statement⁷ should not distract from the fact that a very specific view of the Bible ultimately leads to Adventist beliefs. In other words, the Adventist hermeneutic is dependent on Adventist hermeneutics. Within Adventist hermeneutics, the statement that the Bible is “the

⁴ See Seventh-day Adventist Church Fundamental Beliefs, Fundamental belief 1 – The Holy Scriptures. Available online at: <http://www.adventist.org/beliefs/fundamental/fundamental-beliefs.pdf>.

⁵ For a discussion of this by one who was involved in writing the statement of fundamental beliefs, see: Guy F. 2004. Uncovering the origins of the statement of twenty-seven fundamental beliefs. *Spectrum* 32(3):20.

⁶ Hatch NO. 1989. *The democratization of American Christianity*. Yale University Press, New Haven. P 213. Noll. MA. 1992. *A History of Christianity in the United States and Canada*. Wm. B. Eerdmans Publishing, Grand Rapids. P 151. This issue of the attitude toward creeds is also discussed in Pearcey NR. 2005. *Total Truth: Liberating Christianity from its cultural captivity*. Study Guide edition. Crossway Books, Wheaton, IL. P 302-303.

⁷ If one's creed is the Bible, that is logically consistent, but if one's creed is that the only creed is the Bible, it is logically self-contradictory.

trustworthy record of God’s acts in history” may be taken to mean that the Bible is an *infallibly accurate* record of God’s acts in history, but this position is worthy of some thinking through.

One questionable way of viewing Adventist understanding is to note that if the Bible is a scientifically accurate record of the past and an inerrant tool for explaining nature, then its claims to supernatural origin may be - perhaps should be - taken seriously. Alternatively, if scripture scientifically is inaccurate, then supernatural involvement in production of the scriptures may be questionable. Both of these statements assume that science can be used as a check on the accuracy of Scripture, but this assumption reveals a fundamental misunderstanding of the tentative nature of science and an illogical view of the relationship of science and Scripture. The claim of inspiration, that the Bible is God’s word, is not tentative, it either is, or it is not inspired. If inspiration means unerringly accurate in all things, then the inspiration of Scripture cannot be checked by tentative science.

If Bible = Inspiration
And Inspiration = accurate
And science = tentative
Then Bible ≠ science

Statements in Scripture that, according to modern science, are either accurate, for example the claim in Job 26:7 that the earth is hung on nothing, or inaccurate, i.e. four legged grasshoppers in Leviticus 11:21, 22, form the grist of many arguments that, at their core, are illogical. They only become logical if inspiration is not equated with accuracy, at which point accuracy no longer forms a basis for detection of inspiration.

If Bible = Inspiration
And Inspiration ≠ accurate
And science = tentative
Then, in terms of the tentative nature of their claims, Bible ≈ science

If this line of reasoning is followed, there may be little reason to consider scientific claims in the Bible. However, the problem remains that, if the Bible makes claims about the natural world – that is, claims about empirical reality which typically fall within the realm of science – it hardly seem reasonable to ignore them. If those claims that can be checked are to be ignored, why not ignore those claims that cannot be checked?

One problem with this entire approach is that it is dependent on a kind of equivocation when it comes to Biblical claims. It assumes both science and the Bible are somehow independent of interpretation. Science by its very nature involves interpretation of empirical data. The varying theologies embraced by different religions similarly involve interpretation. Christian theology, and specifically Adventist theology, is based on specific beliefs concerning the Bible that strongly influence its interpretation. This Adventist hermeneutic drives what Adventists interpret Biblical claims to be. Thus, there

is something loaded into the initial statements above about the Bible's inspiration and what that means. It is assumed that the Bible itself makes the claims.

The Bible may be better viewed in the same way that empirical data are viewed. Data are not right, wrong, accurate or tentative, they are data. Within the Adventist hermeneutic, the Bible is the inspired word of God, in a sense it is to fill the same role for Adventist theology that empirical data does for science. But Adventist statements of belief go beyond this to a specific high level of interpretation; the Bible is "the trustworthy record of God's acts in history." From this interpretation, other interpretations follow. Whatever these may be, the interpretation that God acts in history squarely places His actions in the empirical world that science seeks to study. The question is whether Adventists interpretation of Scripture is right, wrong, accurate or tentative. Tensions between theological interpretations of scripture and scientific interpretations of empirical data are uncomfortable, but only within a worldview that embraces the concept of unity of Truth.

Positions like the Non-Overlapping MAgisterial (NOMA) approach espoused by Gould,⁸ in which science and religion are seen as separate non-overlapping entities, offer a cheap way of eliminating tension, but are unsatisfactory if the Bible, a religious book, is believed to make claims that plainly fall within the realm of empirical science. The same is true when materialistic science makes metaphysical claims that go well beyond what can be claimed on the basis of empirical data; such as asserting that the material world is all that exists. Studying scientific claims in the Bible is not illogical under at least four sets of circumstances: 1) If the Bible is viewed as infallible, comparison of scientific claims in the Bible with the claims of science provides a measure of the success of science, 2) if the Bible is viewed as a record of human knowledge at the time it was written, it provides a valuable historical record of how science has changed, 3) those whose faith is not strong may find some reassurance at the degree to which science and the Bible agree and finally – perhaps most importantly – 4) disagreements between the Bible and science encourage reexamination of how the Bible and scientific data are interpreted.

The Need for Reasonable Expectations

Arguments made about science and the Bible frequently rely on narrow, sometimes unusual, hermeneutics or exegesis of scripture. If these specific premises about scripture are not accepted, the arguments are clearly silly. An example of this is a bemusing debate about the value of π and dimensions of the brass sea cast for Solomon's temple which is described in I Kings 7:23 and 2 Chronicles 4:2. Recently a group of citizens fighting the teaching of creationism in Kansas argued, with tongues firmly planted in their cheek, that when the diameter of the sea, given as 10 cubits, and the circumference, 30 cubits, are

⁸ Gould, S. J. 1999. *Rocks of Ages : Science and Religion in the Fullness of Life*. Ballantine Books, New York.

used to compute π the Bible gives the erroneous value of 3.0 instead of 3.14....⁹ The following equation illustrates the logic of this argument:

$$\pi = \frac{\text{circumference}}{\text{diameter}} = \frac{30\text{cubits}}{10\text{cubits}} = 3.0 \neq 3.14\dots$$

Presumably most people who see this argument recognized it as the joke that it is and don't waste time worrying about it. However, some have taken it seriously enough to write responses, both to the journal *Nature*,¹⁰ and in other publications. In this example, a specific understanding of Scripture is required in which no rounding of numbers is permitted and accuracy to more than one decimal place is required. All trained scientists understand concepts like significant digits and how to round numbers. Even the most rigorous sometimes have to be satisfied with numbers known only to be accurate within an order of magnitude. Before one can coherently discuss how the Biblical record of history can inform science, or vice versa, some reasonable expectations need to be in place.

Historical Background - Defining Science

It is also necessary to understand what exactly science is. In more recent times the meaning of "science" has generally been restricted to knowledge about the material world based on logical interpretation of data. Different philosophical starting points inherent in different worldviews may lead to different definitions of science. Positivism, materialism, naturalism and empiricism all emphasize different aspects of the general notion of what modern science is. Positivism emphasizes the importance of knowledge based on natural phenomena. Materialism supports this with the contention that matter is the only reality. Naturalism underlines the importance of natural laws, turning them into a kind of god by claiming they account for all phenomena. Empiricism contends all knowledge originates in experience. All four philosophies reject to one degree or another notions of the supernatural in explaining nature and emphasize the actions of natural law, objectivity, logic and data.

During the late 15th century or early 16th century Leonardo Da Vinci in his *Treatise on Painting*¹¹ emphasized the importance of mathematical logic in science:

"Nessuna humana investigazione si può dimandara vera scienza s'essa non passa per le matematiche dimonstrazioni." (No human investigation can be called real science if it cannot be demonstrated mathematically).

Da Vinci also reflected empiricist philosophy in discussing bad science:

⁹ Dalton, R. 1999. 'FLAT Earthers' in battle with creationism. *Nature* 398:453

¹⁰ Peil, K. 1999. Biblical answer to cooking up pi. *Nature* 399:522.

¹¹ Da Vinci, Leonardo (1452—1519): *Il Trattato della Pittura* from *Codex Urbinas 1270* Folio 1 reproduced in *Treatise on Painting* Translated and annotated by A. Philip McMahon. Princeton University Press. Princeton. 1956. Vol 1, pg 1.

“But to me it seems that those sciences are vain and full of errors which are not bourn of experience, mother of all certainty, and which do not end in recorded experience, that is, where the origin, or middle, or end is not made known to any of the five senses ~~if we doubt the certainty of that which comes to us by means of the senses, how much more ought we to doubt those things which rebel against the senses, such as the essence of God, the soul, and such matters about which there are always dispute and contention.~~”

Clearly as early as the sixteenth century western European scholars, influenced by earlier Greek philosophers, saw the importance of testability in science and recognized the metaphysical implications of this thinking. The church also recognized these implications and it is interesting to note the crossed out portion of this quotation in *Codex Urbinas 1270*, the original manuscript containing Da Vinci’s *Treatise*. This crossed out portion dealing with God and the soul was not removed by Da Vinci, but was omitted from early editions of Da Vinci’s writings published by the Vatican.

However, the empiricist assumption that experience and logic are all there is deviates significantly from Kepler’s seventeenth century sentiment which, while requiring logic in science, also invoked a higher purpose in the pursuit of knowledge; an understanding of God. Thus Kepler saw science as a way of revealing God:

I strive to publish them [Kepler’s observations] in God’s honor who wishes to be recognized from the book of nature.¹²

Kepler saw himself and other astronomers as, “priests of the highest God in regard to the book of nature.”¹³ Through discovery of the laws of nature, man’s mind was united with God’s:

To God there are, in the whole material world, material laws, figures and relations of special excellency and of the most appropriate order... Those laws are within the grasp of the human mind; God wanted us to recognize them by creating us after his own image so that we could share his own thoughts.¹⁴

Twentieth Century Definitions of Science

¹² Kepler, J. (1595). Letter reprinted in *Johannes Kepler: Life and Letters*. Carola Baumgardt, 1951. Philosophical Library, New York. p 31.

¹³ Kepler, J. (1598). Letter to Herwart von Hohenburg reprinted in *Johannes Kepler: Life and Letters*. Carola Baumgardt, 1951. Philosophical Library, New York. p 44.

¹⁴ Kepler, J. (1599). Letter to Herwart von Hohenburg reprinted in *Johannes Kepler: Life and Letters*. Carola Baumgardt, 1951. Philosophical Library, New York. p 50.

During the 20th century definitions of science have been strongly influenced by materialism and naturalism. While Kepler saw the study of things external to himself as a path to understanding the Creator God, anything supernatural, and especially God, has been explicitly excluded as an explanatory cause in some recent definitions of science. Richard Dickerson's definition provides an example of this:

Science fundamentally, is a game. It is a game with one over-riding and defining rule:

Rule No. 1: Let us see how far and to what extent we can explain the behavior of the physical and material universe in terms of purely physical and material causes, without invoking the supernatural.

Operational science takes no position about the existence or nonexistence of the supernatural, it only requires that this factor is not to be invoked in scientific explanations.¹⁵

While Kepler invoked God to explain the amazingly mathematical way in which heavenly bodies behave, naturalism explicitly rejects God as a potential cause for any natural phenomenon. Thus the observation that planets behave in a precise way that can be described in mathematical terms tells us nothing about God. This perspective is not new. Around 300 BC, Epicurus denied the gods' involvement with movements of heavenly bodies:

"[W]e are bound to believe that in the sky revolutions, solstices, eclipses, risings and settings, and the like, take place without the ministration or command, either now or in the future, of any being who at the same time enjoys perfect bliss along with immortality. ... Hence, where we find phenomena invariably recurring, the invariability of the recurrence must be ascribed to the original interception and conglomeration of atoms- whereby the world was formed."¹⁶

Epicurus defined the gods into irrelevance in the material world; the same can be done with the Christian Creator God. God may exist, but if He is the cause of nothing in nature or human history, history and nature can tell us nothing about Him.

Clearly materialism, naturalism, positivism and empiricism, to the extent that they exclude *a priori* God as a cause, present a challenge to many of the basic claims of scripture. In fact, as long as God excluded from the explanatory repertoire of science, all statements in which He is invoked become irrefutable using science and thus cannot be scientific claims.¹⁷ This is particularly true if the Bible is taken to be a factual record of God's interaction with man. If God cannot be invoked as a cause in the creation of life

¹⁵ Dickerson, Richard E. 1992. Random Walking: The Game of Science. *Journal of Molecular Evolution* 34:277

¹⁶ Epicurus. Letter to Herodotus. Available on the web at: <http://www.epicurus.net/en/herodotus.html>.

¹⁷ For an informed discussion of this problem, see: Johnson, P. 2000. *The Wedge of Truth: Splitting the foundations of naturalism*. InterVarsity Press, Downers Grove, Illinois.

on earth, then the Biblical account of creation cannot be scientifically true. The claim in Isaiah 45 that God was responsible for the victory of Cyrus over the Babylonian empire must be rejected, before the data are examined or logic is applied to its interpretation, as God cannot be a cause of events in the material world in which Cyrus won his victory. It is important, however, to note that the rejection of God as a cause in either the origin of life or in the events of history is an arbitrary one. This rejection is not based on data or logic, it is at most an *a priori* constraint placed on the possible causes which can be invoked to explain the origin of life or events in human history. As long as definitions of science that reject God are used in evaluation of claims in the Bible, any statements about interaction between God and the material world must be unscientific.

Kepler believed science is advanced by investigation of the material world, but defining science as: “Investigation of the material world by collection of empirical data followed by logical interpretation of those data,” is not a definition that all scientists would feel comfortable with. Norman Campbell defined science as, “the study of those judgments concerning which universal agreement can be obtained”¹⁸ and explicitly rejected the idea that science is “the study of the external world of nature.” This seems to run counter to the generally held idea that science is somehow about finding truth independent of any attempts to reach agreement. It is assumed that, given enough data, those who are willing to live with the logic will naturally come to agree. Anyone who rejects logic is considered to be living outside the scientific paradigm. If science really were about finding agreement then little progress would be made in understanding nature. Most people who call themselves scientists are in agreement about much of what is out in nature and yet at any time a minority agitate for different views of nature. Over time this minority ultimately allow understanding of nature to progress instead of stagnating. If those who did not agree with prevailing ideas were operating outside of the realm of science, then science would have little to offer as a process for gaining greater understanding of nature.

Amazingly, some even reject the idea that science is in some way a quest for truth. For example, Lieberschuetz in a letter to *Nature*¹⁹ explicitly rejected defining science as a search for truth, preferring instead a framework in which science consists of constructing ideas *de novo* on a foundation of knowledge already in place.

Ratzsch provides one of several recent examples of books primarily dedicated to defining what science is.²⁰ As it turns out, there are as many definitions of science as there are philosophical positions from which they are made, maybe more. Thus positivism, materialism, naturalism, empiricism and any number of other “isms” do little other than muddy the waters while contributing insignificantly to the process of sorting truth from error. If scientific claims in the Bible are to be examined, a practical working definition is necessary, preferably one that does not reject the supernatural as a potential cause before data is examined. In real life, two definitions of science are commonly used; to distinguish between the two we may call them the broad and narrow definitions.

¹⁸ Campbell, Norman. 1921. *What is Science?* 1953 reprint by Dover Publishers Inc. New York. p 27.

¹⁹ Lieberschuetz, J. 1986. Search for Truth? *Nature* 321:556.

²⁰ Ratzsch, D. 2000. *Science and its Limits: The Natural Sciences in Christian Perspective*. InterVarsity Press, Downers Grove, Illinois.

A Broad Definition of Science

In the broad sense, science can be defined as: The logical interpretation of data to arrive at tentative conclusions about the nature of reality. In this system, as data accumulates tentative theories are modified as logic dictates to, presumably, more closely reflect reality. In a sense this reflects the Baconian idea of science as a collector of data. Some of that data may be obtained by direct observation - the leaves on the tree are green - while experimentation may generate more data - trees deprived of water have brown leaves. From these observations theories can be formulated using inductive reasoning. For example, this data may mean that to maintain green leaves, trees require water. This is the type of science practiced by Kepler and other astronomers as well as modern day archeologists.

Kepler was able to use data collected by Tycho Brahe to formulate general theories about the movements of planets that we today call Kepler's Laws. While Kepler's Laws provide a framework for understanding the past, present and future behavior of planets, archeologist's work may only provide an understanding of the past. For example, an archeologist may notice three stones in a row in the desert and theorize that someone in the past lined up the stones. Further investigation may lead to discovery of pottery shards which, when pieced together have cuneiform writing on them. These writings may be recognized as ancient Akkadian and, upon translation, might describe a universe in which planets travel on elliptical paths around the sun. From this new data the archaeologist could logically theorize that the ancient Mesopotamians had a remarkably sophisticated understanding of astronomy and might go further to suggest the original three stones which sparked their investigation formed part of an observatory. New theories arise as more data accumulates; old theories are modified or sometimes discarded. The important thing to note about this broad definition of science is that it encompasses logical investigation of both the present and the past.

A Narrow Definition of Science

The narrow definition of science requires logical interpretation of data just like the broad definition, but adds the additional requirement of experimental testing in the present. A definition of this kind was recently used by the National Academies of Science (NAS) in a publication calling for the continued exclusion of "creation science" from public school science classrooms:

Science is a particular way of knowing about the world. In science, explanations are limited to those based on observations and experiments that can be substantiated by other scientists. Explanations that cannot be based on empirical evidence are not a part of science.²¹

²¹ National Academies of Science. 1999. *Science and Creationism: A view from the National Academy of Sciences*. National Academy Press, Washington, DC. P 1.

This definition is based on the principle of empiricism: to be meaningful a hypothesis must be experimentally testable.²² On a practical level, because history is not testable, this definition eliminates historical knowledge as a category of science. Thus, along with all other historical claims, historical claims in the Bible cannot be dealt with scientifically. While they may or may not be true, Biblical claims about history, like the walls of Jericho falling down, are not scientific. Further, any claims that God intervened in history by creating life or being the cause behind the walls of Jericho falling down are also outside the realm of science.

Because definitions of science are driven by prior philosophical assumptions, of which positivism, materialism, naturalism and empiricism are examples, it should not be surprising that many definitions are constructed in such a way that they specifically exclude any invocation of the supernatural. This is not entirely unreasonable as it could be argued that invocation of an unknowable supernatural cause for all phenomena would remove all motivation for discovery of the underlying laws of nature, whether created by a supernatural entity or not. The perspective of Kepler, that science provides a window on the mind of God may provide a reasonable alternative motivation. If science assumed some sort of supernatural role in phenomena, then it could not be viewed as having any possible role in independently testing the inspiration of scripture. In other words, if it assumed *a priori* supernatural inspiration, then it could not be viewed as fairly testing to see if in fact there is something supernatural about scripture or anything else.

Using Broad and Narrow Definitions of Science within a Christian Worldview

By using a broad definition of science, the historical accuracy of the Bible can be tested using scientific methods, but this type of testing can do little to inform about the role of God in the history of man, which is a primary focus of Scripture. All it achieves is a measure of how well current thinking about history correlates with history as recorded in Scripture.

Science, as defined in the narrow sense, can comment on only a very narrow set of questions, those that allow for experimental testing in the present. It also is limited in its ability to comment on the role of the supernatural in either nature or history. Within these constraints there are some relatively small set of claims within Scripture that are testable, those that are prophecies about the present represent a particularly interesting group.

Defining science is not a trivial task, even when operating within a specific worldview or philosophical system. Most practicing scientists could probably live with the broad and narrow definitions of science given here and would agree that science is about empirical knowledge. Disagreement generally centers around what explanations science is allowed to offer. In other words, how must science be constrained so as not to violate a particular

²² Not all agree that empiricism is a criterion of meaning is without its problems. For example, see: Hempel, C. G. 1950. Problems and changes in the empiricist criterion of meaning. *11 Rev. Intern. De Philos.* 41:41-63.

worldview? Science is never done independent of worldviews because scientists are human beings and are incapable of not having a worldview.

Materialistic worldviews limit science by not allowing “the divine foot in the door.”²³ In contrast, theistic worldviews are much less constrained in that, while they ultimately attribute all phenomena to God, they allow Him to work indirectly through the laws of nature He created and to work directly on matter. Thus, science need not be constrained to only “natural explanations for natural phenomena”²⁴ A clear-thinking theistic scientist will be just as interested in God’s continuous action in upholding the universe²⁵ – the activity we see manifested in the laws of nature – as in God’s intermittent activity revealed in miracles like the creation and resurrection.

A Case Study - The Resurrection and Science

The specific view of Scripture embraced by Seventh-day Adventists plainly states that the Bible is historically accurate. If that is the case, then the resurrection is a historical fact. A human being died, gave every indication of being dead including coagulation of the blood.²⁶ After being dead and buried for something on the order of 36 – 48 hours he appeared alive again denying that he was some kind of ghost, exhibiting the marks of crucifixion and engaging in such human activities as eating and talking with friends.²⁷ Our empirical observations tell us this sort of thing does not happen, it is inconsistent with the laws of nature as they are currently understood. To back up the observation that resurrections don’t happen are billions of graves with bones moldering in them.

From within the constraints of materialistic science, the resurrection is deeply problematic. The options are: 1) The resurrection never happened or 2) the resurrection happened due to natural laws and chance. Each option is problematic. If the resurrection actually happened, as Adventists and other Christians believe, then denying it changes nothing. No empirical knowledge suggests that natural laws and chance cause resurrections to occur. Alternative naturalistic theories like the mass hysteria of self deluded wishful thinkers still make no difference if the resurrection actually happened. If the resurrection did happen, then one naturalistic theory might be that, in the words of Richard Dawkins:

“Given infinite time, or infinite opportunities, anything is possible. The large numbers proverbially furnished by astronomy, and the large time

²³ Lewontin R. 1997. Billions and Billions of Demons. *New York Review of Books*. January 9, P 31.

²⁴ This definition comes from proposed Ohio State Science Standards 2001 entitled Scientific Ways of Knowing, Grade 10, Indicator 3. In the final voted standards, this standard was changed to take a neutral stance on explanations available to science.

²⁵ This continuous activity is referred to in texts like Hebrews 1:3 and Colossians 1:17.

²⁶ John 19:34

²⁷ Luke 24:37-43

spans characteristic of geology, combine to turn topsy-turvy our everyday estimates of what is expected and what is miraculous.”²⁸

In short, given enough time and a big enough universe, resurrections are no more surprising than spontaneous generation of life. Resurrection of the dead looks a lot easier than spontaneous generation, especially if the body is only a few days old, and if spontaneous generation occurred, a resurrection or two is inevitable due purely to chance and natural laws. The problem is that, if anything can happen, even a resurrection, without outside intervention, then science ceases to exist; no predictions can be made and no true regularities exist in nature.

Theistic scientists are liberated from this absurdity by their worldview. Regularities exist in nature as manifestations of God’s continuous direct activity. Because theists allow for the occurrence of miracles, they have a separate logical category for events like resurrections, the origin of life and other events that are unexpected given the prior state of matter. In one sense, theism and materialism both appeal to a single cause for all things, God in the case of theism and nature in the case of materialism. The difference is that theists attribute both nature and miracles to a cause capable of producing them – an omnipotent, omniscient, omnipresent eternal Creator God – while materialism appeals to matter which is clearly incapable of doing the miracles required.

Conclusions – The Value and Reality of Tension

From an Adventist perspective; science defined as the empirical study of nature is not divorced from theology, instead the two inform each other because both ultimately arise from the same source, the Creator God. Francis Bacon used the metaphor of two books written by the same author to explain this relationship:

To conclude, therefore, let no man out of weak conceit of sobriety, or an ill-applied moderation, think or maintain, that a man can search too far or be too well studied in the book of God’s word, or in the book of God’s works; divinity or philosophy; but rather let men endeavor an endless progress or proficience in both.²⁹

This two books metaphor is also used by Ellen White:

Ignorance may seek to support false views of God by appeals to science; but the book of nature and the written word do not disagree; each sheds light on the other. Rightly understood, they make us acquainted with God and his character by teaching us something of the wise and beneficent

²⁸ Dawkins R. 1989. *The Blind Watchmaker: Why the evidence of evolution reveals a universe without design*. W. W. Norton and Co. New York. P139.

²⁹ F. Bacon: Advancement of Learning as quoted in Darwin, C. R. 1859. *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*. First edition. Frontispiece.

laws through which he works. We are thus led to adore his holy name, and to have an intelligent trust in his word.³⁰

By embracing the two books view of Bacon, Adventist scientists are not necessarily embracing the more problematic aspects of Baconian science. What is being expressly rejected is the view that science and religion are distinct realms of knowledge that do not interface in any way. The Adventist view of God as the author of both books, consistent with the view of other Christians, provides a metaphysical framework that has greater flexibility than materialistic frameworks. At the same time, rejection of postmodernist thinking about the relationship between different disciplines means that tension evident between the Bible-based Adventist understanding of history and at least some current understandings of empirical data are real.

How this very real and present tension is dealt with is an open question. On the one hand tension reasonably motivates a quest for resolution. It can thus be viewed as an encouragement to engage in both further study of God's word and His works. On the other hand, tension tempts subscription to alternative views that purport to resolve the tension, but require accepting understandings that are inconsistent with Scripture, logic or empirical knowledge, or possibly all three. Given the fallen state of the creation and fallibility of human understanding, tension appears to be the inevitable and uncomfortable, yet better option than the alternatives. Despite some real tensions between Bible-based views and prevailing scientific understandings, such as the amount of time life has existed, the Bible-based view of nature provides a liberating metaphysical framework in which to study nature.

³⁰ White EG. 1884. Science and the Bible in Education. *Signs of the Times* 10(12):177.