# **Review Essay**

Tyson, Paul. *A Christian Theology of Science*, Baker Academic, 2020. ISBN 9781540965516

By Howard Andersen, PhD

# Introduction

The title, *A Christian Theology of Science* is, to this reviewer, a very promising undertaking and a serious potential contribution to the entire science and religion discussion which, for far too long, has been based on faulty premises. The sub-title, *Re-imagining a Theological Vision of Natural Knowledge* holds out considerable promise for progress in this fraught discussion. But, as the reader will see, there are helpful and unhelpful ways of going about this.

According to the publisher's notes, Paul Tyson holds a PhD from Queensland University of Technology in Australia and is a senior research fellow at the Institute for Advanced Studies in the Humanities at the University of Queensland. He is principal investigator and project co-coordinator for the After Science and Religion Project and a lecturer in philosophy at the Australian Catholic University.

This modest-sized book consists of nine chapters of uneven length, each taking a different piece of and angle on the issue of theology and science.

A foreword by David Bentley Hart, a prolific and not uncontroversial American writer, philosopher, religious studies scholar, critic, and theologian,<sup>1</sup> sets the reader up well to appreciate what he calls an "elegantly brief book."<sup>2</sup> "The conversation (between religion and science) must begin again," he says, "and on a far more intelligent, historically informed, and philosophically refined basis." Hart calls for a "new paradigm of engagement" that will "help free the modern cultures both of the sciences and of philosophical theology from the limitations that their unnatural schism has condemned them to." This reviewer hopes that Tyson can move the discussion some considerable distance along this trajectory.

# Analysis

In his introductory chapter, Tyson introduces the term "first truth discourse" as the rubric that should enable serious thinkers to discuss and, hopefully unify,

<sup>&</sup>lt;sup>1</sup> Wikipedia article on Hart, <u>https://en.wikipedia.org/wiki/David\_Bentley\_Hart</u>.

<sup>&</sup>lt;sup>2</sup> Pp. xi, xii.

various fields of knowledge. First truth discourse is defined by the author as "[a] unifying framework of first-order metaphysical, moral, and epistemic meanings. A set of interpretive commitments that one brings to *all* knowledge and understanding (italics mine)."<sup>3</sup> Philosophers and theologians generally recognize that such an epistemology, a theory of truth, is necessary, and indeed, unavoidable whether or not it is commonly articulated. Other names besides epistemology for this essential idea include interpretive framework, explanatory framework, and worldview.<sup>4</sup>

Tyson divides the history of science and theology into three parts. First, "adaptation" describes the approach of liberal theology to privatize or mythologize the miraculous and metaphysical in theology. Second, "withdrawal" designates the conservative withdrawal from the public sphere into a discretely religious domain of consideration. And third, "appropriation" refers to outlooks like "creation science" that, especially in America, seek to create a *different science*, especially with a different timeframe, than that envisioned, for example, by the theory of evolution.

Each of these categories highlights something that was all but unthinkable a mere century and a half ago, namely, serious conflict between science and theology. As Tyson points out, science is "the love child"<sup>5</sup> of Western Christian theologizing. Christian theology made the Western world what it was, including its science, from before the fourth century to nearly the twentieth, and only in the last 150 years or so has science pushed to the side such things as human purpose, values and direction.<sup>6</sup> But, to continue the metaphor, this child of theology is now reaching some level of maturity and demanding its own space and authority. Like all maturing offspring, this one deserves to be free to be true to itself yet without claiming too much and without doing damage to anything else. Tyson says, "there may be a very interesting future for Christian theology and science," and asserts that the problems themselves need to be redefined. This reviewer agrees with this proposal.

# Definitions

<sup>&</sup>lt;sup>3</sup> P. 186. Tyson provides a 10-page glossary at the back of the book.

<sup>&</sup>lt;sup>4</sup> Given the digital nature of the world, "world modelling" might be an advantageous term for this idea. In the meantime, adopting Tyson's "first truth discourse" is satisfactory.

<sup>&</sup>lt;sup>5</sup> P. 8.

<sup>&</sup>lt;sup>6</sup> In post-modernism the fissures in societal systems, often with violent consequences, are being exposed. The riots, murders, and gun violence in the USA in the last few years and the war in Ukraine are examples. It is time for theology and science to live up to their historic connection, value each other, and create not just a more powerful world, but a world where *everyone* has a fulsome chance to thrive. Monotheists, from the time of Abraham four thousand years ago, have espoused the mission of Abrahamic faith to be a "blessing" for the well-being and flourishing of every nation, language and tribe. It is time, again, for theology to provide the authority, motivation, and direction, and for science to go on discovering the means and contributing to the power, to make this calling effective.

In chapter one, Tyson appropriately seeks to define theology and of science. He begins by saving that "theology is reasoning about God," but then goes on to say that Christian theology is "reasoning about God as *underpinned by the foundational* belief commitments of the Christian faith (italics mine)."7 He then outlines five Christian theological claims that, he says, must form the starting point for Christian reasoning about God.<sup>8</sup> But, whatever one might think about these credal claims, this amounts to circular reasoning and cannot stand. Starting a discussion about reconciliation by claiming *already settled results* on one side is not a prescription for advancing any cause. Were this approach followed through consistently in Tyson's book, the book's value would be highly diminished. However, Tyson does not follow through on these credal claims in a consistent manner, and therefore some of the serious potential value of the book is preserved. The reader is alerted to the important question of the ultimate authority for Christian theology. If it is assumed that the church, as in the historical Roman Catholic church, for example, is the ultimate authority, then Tyson's appeal to five or any other number of prior theological claims will have to stand, though it undermines the theology and science discussion. On the other hand, if the ultimate authority for Christian theology is the Old and New Testaments of the Bible, as in Protestantism, then Christian theology in any of its variations does not serve as the ultimate arbiter. Theology is, in this understanding, a human discussion about God based on the data of the Bible and is not in itself a finally authoritative statement. The question of authority is clearly the fundamental and decisive epistemological issue on which everything else depends. This must be kept in mind in reading the rest of Tyson's book.

# Science and Theology as "Truth Lenses"

In chapter two, Tyson pursues the possibility of viewing Christian theology through the truth lens of science. Chapter four inverts this order. The intervening chapter, chapter three, describes Christian theology as a first truth discourse.

Viewing Christian theology through the truth lens of science has very limited scope for success given that theology is a discussion about God, and God, if the word means anything, including to a non-theist or an atheist, is a bigger thought category than any other. If the word theology means anything, it must be the biggest possible epistemological circle. Whether God exists as a living entity or not, nothing is, by definition, a bigger intellectual category than God. This is not triumphalism on the part of monotheistic theology. It is simply a matter of meaningful epistemological definitions. Contexts define texts, not the other way around. Viewing theology

<sup>&</sup>lt;sup>7</sup> P. 11.

<sup>&</sup>lt;sup>8</sup> P. 12.

through the lens of science can hardly be more than a playful idea. It is a serious category mistake to juxtapose Christian theology and science directly.

In chapter three, Tyson discusses Christian theology as a first truth discourse. He points out that the well-known founding fathers of modern science in the nineteenth century like Bacon, Galileo, Descartes, Boyle, Leibnitz, Newton, and Faraday took the approach of religion-to-science as their interpretive framework, meaning that God, as the biggest intellectual category, comes into consideration first and leads to many subsets, in this case, modern science. Importantly, this approach accounts for why modern science arose in the Western world, and nowhere else. He then goes on to articulate the juxtaposition that in the twentieth and twenty-first centuries, the Western approach to knowledge can best be described as science-to-religion. In other words, science explains everything, including religion, in science's terms. Put more simply, a theistic worldview/epistemology has been replaced by a non-theistic world view/epistemology. One of the first principles of modern science is that no appeal to deity is permitted in its reasoning. This orientation inevitably makes all the difference in any investigative process.<sup>9</sup>

Chapter four, "Viewing science through the truth lens of Christian theology" is one of the longest and most determinative chapters in the book. Tyson presents his arguments in four main sections.

Considering Christian theology and empiricism first, the reader should be reminded that the "-ism" suffix usually denotes a totalizing, ardently followed approach that has become doctrinaire and is usually overstated. Both science and history, for example, rely on observable data to draw conclusions and formulate theories.<sup>10</sup> Science cannot be criticized for being empirical. In referencing empiricism, Tyson is presumably means a legitimate empirical approach that has gone too far. He refers to two kinds of empiricism, naïve empiricism and skeptical empiricism which, he says, ultimately coalesce.<sup>11</sup> Tyson's point is that empiricism is not a sure guide to true truth. The unavoidably subjective nature of observation is the spoiler in the grand hopes for the empirical approach. Tyson points out that while science might acknowledge this shortcoming, it then reverts to the notion that empirically derived knowledge is at least *useful*. Therefore, truth is replaced by *use* or, more explicitly, by power. The usefulness of empiricism has come to underpin

<sup>&</sup>lt;sup>9</sup> As in formal logic, the opening *premise* is completely determinative of the conclusion. And, in Bayesian statistics, *priors* are determinative of probabilistic outcomes. The ultimate prior is therefore utterly crucial. In a long chain of cause and effect, the first cause is determinative of all the rest.

<sup>&</sup>lt;sup>10</sup> This is relevant for any theological formulation with even minimal intention of being based on biblical literature as a historical data set.

<sup>&</sup>lt;sup>11</sup> He asserts that "...the notion that the 'merely' measurable, tangible world as anyone 'simply' perceives it correlates directly to how things really are cannot be taken seriously." He continues with "...such naivete would be eviscerated by even the most casual engagement with the writings of Sextus Empiricus" the late classical philosopher (third century AD) a skeptical empiricist. A skeptical empiricist, according to Tyson, is one who advocates for the empirical but advocates unrelenting doubt as a reaction to its ultimate truth claims (p. 43).

modern politics, economics, finance and commerce, and military and industrial complexes. Modern science is the great enabler of these phenomena. One could easily add other aspects of human endeavors and cultures.

In the second section of chapter four, Tyson considers "Christian theology and rationalism." Again, Tyson's "-ism" needs to be understood as a reference to a totalizing, doctrinaire approach to rationality, not to reason itself. He refers to Plato's Theaetetus as arguing, "...with devastating effect...," that neither observation by the senses nor the logic of mathematics<sup>12</sup> can yield "justified true belief." Truth is something beyond the purely observable, as *useful* as empirical observation is. But rationalism does not speak to the contingent nature of the world in which humans always live. And reason does not come with its own truth warrant; it must be certified as true by something else. Tyson's argument is not a critique of reason, but a reminder that reason as a way to truth is only as good as its starting assumption. Plato argues convincingly for the "truths of high wisdom," by which is meant wisdom as construed in Greek philosophy. As a Greek philosopher, Plato has no reason to give thought to the nature of Hebrew wisdom. Without giving thought to Hebrew wisdom, Tyson has no historical foundation for Christian theology except the church itself. And even if the church is given the mandate to create Christian theology, it cannot legitimately do so without primary and focused historical and empirical attention to the essential data base for Christian theology, namely the literature of the Bible whose wisdom in both testaments is entirely Hebraic as distinguished sharply from Greek wisdom.

In a third section, Tyson analyzes what he calls "physical reductionism" in connection with Christian theology. This, in turn, consists of three parts, namely, nominalism, voluntarism, and pure matter. Physical reductionism is yet another *-ism* and, as the word implies, it is a process of reducing matter to its simplest and smallest possible component(s). This process is well illustrated in the atomic<sup>13</sup> and nuclear physics of the early twentieth century. This physics has been an almost never-ending process of identifying a substantial list of smaller and smaller particles over time. Tyson recalls his five main tenets of orthodox and credal Christianity identified earlier and asserts that "Christian theology is simply *a priori* committed to the stance that the physical reductionism of science is false."<sup>14</sup> But again, his assertion highlights the sad fact that with his five main *a priories*, Tyson is no longer in a

<sup>&</sup>lt;sup>12</sup> Even mathematics cannot be exempted from Plato's critique. Mathematics, like formal logic, is only as good as its starting assumption(s).

<sup>&</sup>lt;sup>13</sup>The meaning of the Greek word is "uncuttable."

<sup>&</sup>lt;sup>14</sup> P. 56. To this reviewer, it is best to let science be science. Science's much heralded goal is to investigate the physical universe on its own well defined, though not widely understood, terms. It cannot help coming into some misalignment, then, with theology, whose field of interest is much wider. As long as science stays in its own epistemological lane, and the nature of that lane is well understood by consumers of science, this is not a problem. But, of course, the nature of science is not at all well or widely understood.

serious, open, and productive dialogue with the actual issues arising out of science and theology.

Tyson reminds the reader that Aristotle argued that any physical thing has four causes: material, efficient, formal and final.<sup>15</sup> He applies this kind of thinking to a human artefact, a chair. The material cause is the wood out of which it is made; the efficient cause is the carpenter who shapes and fastens the wood; the form is the design that guides the carpenter's shaping of the wood; and the final cause is the purpose of the chair. The material object is more than the atoms that make up the substance of the chair. Reducing the material object to mere atoms is far from a satisfactory or fulsome explanation of a chair. Tyson argues, then, that physical reductionism leaves humans with a morally and teleologically impoverished world of objective scientific facts. Meaning itself has become "…merely a natural function of purely objective material facts. Qualities, purposes, essential meanings, and intellectual truths do not actually exist." This helpful and telling critique of reductionism importantly does not depend on adherence to Tyson's five *a priori* theological commitments.

# History of Science and Theology

In chapter five, titled "The Remarkable Reversal," Tyson traces the history of the science-theology dynamic over the last 150 years. He argues that there are three main ways of nuancing this dynamic: functional demarcation, autonomous overlap, and integration. Functional demarcation is what most scientists who are Christians live with, whether consciously or not, leaving theistic explanations as direct cause outside the door of their labs, and without mention in their scientific theories and writings.

Autonomous overlap is a "binocular" vision of reality, which seeks to preserve science in strong mathematical and empirical categories and Christianity in its strongly credal formulations.<sup>16</sup> Integration, on the other hand, is the serious effort to hold both modern science and credal Christianity together. Tyson argues that integration requires unacceptable accommodations on one or both sides. Such accommodations negate the ideals of one or other or of both disciplines. This is plainly true. But, once again, Tyson's insistence on strongly credal formulations as if they were mathematical equations drives the discussion into an intellectual 'rabbit hole.' His strenuous effort to contain Christianity in credal formulations alone, or even principally, means that a meaningful discussion with disciplines with other assumptions cannot take place productively. But there is no need to so construe the

<sup>&</sup>lt;sup>15</sup> Pp. 63-68.

<sup>&</sup>lt;sup>16</sup> As previously noted, an exclusively creedal formulation of Christianity is inadequate as a true and full-orbed representation of the biblical data base.

"ideals" of science and of theology as to make them irredeemably opposed. Science honourably pursues truth. Theology does the same. But theology's interests overlap science's interests entirely, while science's interests are a constrained subset of theology's interests.<sup>17</sup>

In chapter six, one of the shortest chapters in the book, a kind of summary chapter, Tyson considers where serious thinking goes after science has had its way with the world and with theology in the twentieth century. He uses "after" science but not "after" Christian theology as a rubric to frame this chapter. Tyson states that science, as an underlying worldview *chronologically after* theology as a worldview has been tried in Western thinking since the 1870s. While science has provided the means by which hundreds of millions of human beings have come to enjoy unprecedented material well-being, it is also seriously culpable, given that it made possible the incredible destructiveness of two world wars, other wars, and the massive death and destruction of evil regimes.<sup>18</sup> Christian theology, as a worldview should be tried *again*, says Tyson, perhaps with some reshaping. It has all the characteristics required in a viable worldview. Meanwhile, science could continue its discovery work unfettered within the larger frame of theology, as it did for many centuries in Western civilization.<sup>19</sup>

#### Theological Epistemology

Chapter seven, "Rediscovering Christian Theological Epistemology," is one of the longest chapters in the book. This chapter is of critical and foundational importance to the science-theology conversation. The entire relationship between theology and science, or any discipline, should begin with serious consideration of the question of epistemology. The controversial questions of the last one hundred years or so between science and theology should be seen as surface manifestations of an underlying and understandable *but resolvable* difference in philosophical approach between the two disciplines.<sup>20</sup> In the end, however, this chapter is disappointing and does not deliver on its promise.

Tyson discusses "the fall" of man and how it limits human capacity to know. He cites Plato and Aristotle extensively. Plato argues that "the real" is the intellective

<sup>&</sup>lt;sup>17</sup> The Old Testament wisdom book of Job, for example, gives the most extensive, artful, and compelling invitation, in all ancient literature combined, to do science, to be curious about and to investigate the physical world (chapters 38-41). But its main interest is also much broader than that.

<sup>&</sup>lt;sup>18</sup> Technology and industry are the more directly responsible parties, having built "methods" on top of science's "findings."

<sup>&</sup>lt;sup>19</sup> But most soberingly, mandates and boundaries for technology and industry need to be defined so they can pursue their instrumental and functional work in an ethical manner. And they cannot do this on their own.

<sup>&</sup>lt;sup>20</sup> This reviewer's experience as a faculty of science graduate of one of Canada's leading universities, then taking a first course in theology, was one of high surprise and disappointment at the lack of philosophical stance ever articulated by that science faculty.

idea, the *essence*, behind every physical object. Physical objects are continually changing, whereas the underlying idea is relatively stable. Aristotle, on the other hand, argues that "the real" is the object itself, the thing that exists, the substance, not the idea of it. For Aristotle, essence is materialized in substantive reality.

The fall leads Tyson to a discussion of natural illumination and divine illumination. This discussion is accompanied by figures with titles like "God, Mind, Goodness Beyond Being," and "Divine Source of All Illumination." Along with this, "to conceive a better relationship between Christian theological epistemology and modern science" Tyson proposes a "Knowledge I" and a "Knowledge II," along with "Understanding I" and "Understanding II".<sup>21</sup> While his discussion brings forth relevant questions, it is not helpful. It complicates the discussion by the creation of more theological categories. It is not likely that science will find an interest in any of this.

In section 7.6 Tyson posits the possibility of an "integrative zone" for science and religion<sup>22</sup> though he switches one of the poles of the science-theology dichotomy from "theology" to "religion." Concerning integration, Tyson prejudges a particular kind of relationship between theology and science. Construing the relationship as belonging to a "zone" seriously and unwisely constrains the possibilities. The relationship between theology and science should not be construed as integration. Integration is tendential and limiting. The concluding and summary evaluation of Tyson's book below considers this constraint further.

#### Myth and History

Chapter eight carries the title "Myth and History-The Fall and Science." This chapter is a further consideration of the fall idea from the previous chapter. Tyson begins with a powerful introduction which lays out his concerns. He correctly highlights the seemingly universal need for human beings to find reasons, meanings, and purposes, to find continuity between the natural and the intangible and to answer questions of who they are, their place in the cosmos, right and wrong, and the meaning of life and death.<sup>23</sup> Tyson argues toward the idea that "…any unified lifeworld must have its guiding mythos." He frames the chapter around a series of issues and questions that are questionable and mixed in character.

It is singularly unhelpful to invoke the category of myth in the discussion of science and theology. While the word "myth" in academic discussions on a purely literary level means simply "story," in the non-literary world and in the more popular Western mind, it seems inevitably to evoke ideas of made-up stories, mostly in

<sup>&</sup>lt;sup>21</sup> P. 119.

<sup>&</sup>lt;sup>22</sup> P. 122.

<sup>&</sup>lt;sup>23</sup> P. 132.

ancient civilizations, and carrying no historical truth value. The fact that literary scholars can successfully navigate their way through the ideas of myth does not rescue the word from a serious flavor of untruth in the non-literary mind. Therefore it is distracting and unhelpful.

#### Summary of Issues, Critiques and Recommendations

Chapter nine, "Recovering an Integrative Zone" and the Epilogue which follows it, are concluding and summative statements for the book. A summary of issues and critiques and recommendations follows.

First, the word "recovering" in the chapter title is problematical to the discussion between science and theology. Even if theology is relatively fixed - and it is for Tyson - science is not. The notion of recovery flies against science's method, which is the ongoing testing and revision of its theories. Neither should theology be thinking of itself as a fixed body of truth that is never revisable. "Recovery," while it has some place, is too much of a backward look for the required stance in either discipline. While Christians might relish the recovery of science's long time relative status in the Western world, its status was due not solely because of Christian theology but, more importantly, because of the reciprocal hegemony of church and state for a thousand years and more. This state of affairs is not recoverable, even if it were thought desirable.

Second, the notion of a "zone," a discrete place where theology and science can work together is misguided. Theology is, by definition, the biggest intellectual category possible, and therefore includes consideration literally of everything. Nothing is outside of its interest including those things that may be contrary or objectionable to it. The field of theology is, in this way, a pluralistic one. The function of theology is to interact and argue from a point of view which seeks to take into account everything, to be truly a "theory of everything." Science is a discreet subset of this interest, limited, as it is, by a focus on the physical world.

Third, Tyson's commitment to a completely credal construal of Christianity is highly problematical. Credal Christianity, an invention of the church, did go on to serve that church remarkably well for over a thousand years from about the fourth century. The church's identification with the state during that time makes this success unsurprising. The church provided authority to the state, and the state provided power to the church. This arrangement was only seriously questioned in the Reformation, but even then the overall result was nothing more than some alternative creeds and some alternative state churches. The worldview, the epistemology of theology, based entirely on Greek philosophical thinking, especially Platonism, did not change as a result of the Reformation. Christian theology was still done in the same way. This epistemology is completely unlike the historical data set on which Christianity should be based. The Bible, including the Bible's own epistemology, must be taken as the original source document for Christianity. Western theology has spent all its time and mental energy developing a system of thought along Platonic lines. This system can legitimately claim to be Christian but it amounts to such an enormous abstraction from its database, namely the 1200 pages of biblical literature, that the character of the data base is hardly recognizable in the abstraction. It is highly pertinent that one of the fundamental planks of the Reformation, *sola scriptura*, must come seriously into play in this particular way. This critique is not meant to disqualify systematic theology as such, but to question the ongoing usefulness of a highly abstracted Platonic approach to Christian theology.<sup>24</sup>

Fourth, Tyson's lament about theology and science amounts to a lament for the loss of power suffered by the Roman Catholic Church when modern science began to break free from church authority and go its own way. Loss of power is always troublesome to the entity losing it. The quest for power is, after all, the Adamic sin.

Theology's loss of influence in public discourse is quite another thing. Theology needs to step up and address social and political issues of wide concern. The human family is intent on bettering itself and thinks it can do this by understanding and leveraging both the physical and non-physical worlds. Science has contributed enormously to the material success first of the Western world and then of the entire world. At the same time, science's capacity to increase the power human beings have through technology has also unleashed the most destructive capacity the world has ever known. The wars of the twentieth and twenty-first century are ample evidence of this. As impressive as this power for both good and evil is, human beings are left with their longings and yearnings for something deeper and transcendent. Christian theology's role in answering this longing has been seriously eroded and urgently needs to be regained in the public square, as Tyson points out. Theology's rise does not have to be done at the expense of science.

Fifth, in chapter nine, Tyson struggles mightily with the necessity of "governing" science. This has many, many ramifications to it. Proposing that science needs to be injected with a more profound epistemological or even metaphysical understanding of itself could prove to be salutary. This conceivably would give science the capacity, and perhaps the responsibility, to regulate itself and the things it makes possible. But self-regulation in human affairs has mostly been found wanting. Further, governing knowledge and the acquisition of it in any field is surely

<sup>&</sup>lt;sup>24</sup> In the last few decades, three authors have done masterful work in creating alternative approaches to theology which represent the Biblical data much more directly. Walter Brueggemann led the way with his *Theology of the Old Testament*, Fortress Press, Minneapolis, 1997. John Goldingay has produced an outstanding three volume set, each of about 1000 pages, *Old Testament Theology*, IVP Academic, Downers Grove, 2003 and following. And Bruce Waltke also has contributed with his *An Old Testament Theology*, Zondervan Academic, Grand Rapids, 2007.

contradictory, unwholesome, and counterproductive. Some means of regulation of the *applications* of science clearly need to be found or current methods need to be improved. Political and institutional systems that have the *de facto* power to regulate research could shoulder the responsibility for regulation of scientific research and technology. But the largely amoral systems of the West, for example, have no solid basis on which to do such regulation. There is no longer any touchstone for considerations of an ethical and moral character. On such matters, the Western world is clearly adrift. Theology has the capacity and, arguably, the responsibility to do this but is found seriously underperforming at this point in Western culture. For example, prejudice against such regulatory projects is apparent in public funding bodies in both Canada and Australia.<sup>25</sup>

Sixth, in sections 9.3, and 9.4 Tyson seeks "the integration of knowledge and understanding." But the understanding he seeks seems to be a thorough *theological* understanding. This kind of understanding is not the work of science.

Science promotes itself as an objective compendium of factual knowledge. Factual knowledge is meant to be appropriately and deliberately limited to knowledge of the physical, observable, and testable universe. Scientists may make assertions outside this boundary, but they do so as human beings with their own personal worldviews. Science itself cannot speak outside of this realm.

Having said that, science does in fact go well beyond just being a repository of knowledge as facts. Science proposes explanations or theories or understandings to explain the physical world. Scientific theories must be testable and falsifiable. Theories are revised as test results become available. A theory may be elevated to a "law" on mathematical proof where that is possible or when the theory has passed every test imaginable over very long periods of time. Newton's laws of physics are examples. The word "knowledge" can be used fairly for both facts and for well-established theories with the caveat that even a well-established theory could one day be proven wrong.

Seventh, Tyson points to pluralism as a possible way forward. This is welcome and perhaps somewhat surprising, given his penchant for hegemony and authority. It seems entirely feasible and even hopeful that encouraging more voices to speak into the reinvigoration of an authentically Christian worldview will be helpful. There is much biblical data pointing not only to the facts of pluralism but also to its desirability, properly understood. The point of the Babel story is to eschew human hegemony and totalizing and to relish human dispersion and multiplicity of languages and cultures. The Revelation, the grand final state of mankind, likewise relishes the multiplicity of peoples, tongues, and nations. It may even be conceded that the first of the two great commandments is largely credal. The second is not,

<sup>&</sup>lt;sup>25</sup> See Tyler's comment, p. 174 and footnote 22.

being active and missional to all the nations and notions of the world. This is what made the first four centuries of Christianity successful.

Eighth, Tyson makes reference to wisdom as a helpful category to expose what is missing in modern Western society. However, the wisdom Christians seek is not more of the Greek kind. This kind of wisdom has led to the current stagnation in Western intellectual vitality and interdisciplinary dialogue. Greek wisdom is essentially a matter of building cohesive systems of knowledge. Hebrew wisdom, the wisdom that underlies the Bible including *both testaments*, is not so much about what is abstractly true but rather about what humans should do. It includes every dimension of human life and is concrete, dynamic, pragmatic, experimental, and empirical. Greek wisdom, and consequently Western theology, is highly abstracted knowledge about what is true, especially ontologically. Hebrew wisdom can inform not so much a way of thinking in and of itself but, more importantly at this time in Western Christianity, a way of doing and a way of living. If anything needs to be recovered from the Judeo-Christian past, it is Hebrew wisdom. Hebrew wisdom accounts for the most successful centuries of Christianity, the first four centuries.<sup>26</sup>

Ninth, Tyson gives some brief and positively inclined consideration to other worldviews providing a home for modern science,<sup>27</sup> but does not articulate the matter sufficiently for the reader to understand how this might work in his worldview. Science comes naturally out of a Christian worldview. This is because the Christian worldview understands God as the rational creator of the physical universe. Judaism and Christianity stand mostly alone among world religions on this point.<sup>28</sup>

#### Conclusion

Tyson has done the theological world a fine service in writing this book. Scientists will not feel that he has done a service for them. They likely will not be

<sup>&</sup>lt;sup>26</sup> Tyson makes the telling point that any wisdom being exercised in the Western world in the twentieth and twentyfirst century on legal, political and ethical norms is largely *residual*, that is to say, something vaguely remembered from the distant past. He then adds, troublingly but truthfully, that this might carry on in a "gently adaptive" manner for a time. See his footnote on p. 173. This implies that the Western intellectual tradition is unnervingly unmoored and adrift. Tyson then adds that this "gently adaptive manner" is now "entirely disconnected from civically enforceable ecclesial authority." As has been argued above, this reviewer does not share the value Tyson claims for "civically enforceable ecclesial authority."

<sup>&</sup>lt;sup>27</sup> P. 179 including fn. 3.

<sup>&</sup>lt;sup>28</sup> It is not clear whether Islam, the third member of the trio of Abrahamic faiths, while it had some worthy achievements in mathematics and astronomy in the Middle Ages, now has theological room for experimental science as such. Similarly, it is not clear that other world religions like Hinduism, Buddhism, and Confucianism and including the indigenous religions of the Americas and Australia and the various animistic religions of Africa, for example, rely sufficiently on rationality and the rationality of the universe to accommodate science cohesively in their worldviews.

more inclined to engage theology as a result of this book for the reasons critiqued in this review. Discussing science and theology, Tyson states the facts, the problems, the alternatives, and possible solutions forcefully and with imagination. His analysis is erudite and passionate. His language shows virtuosity and verbal artistry. But his idea of containing science wholly within existing and historical *credal* Christianity is ill-conceived, misguided, and unnecessary. There is nothing in the epistemology of the biblical data base that hampers or excludes the investigation of the physical universe in science's own terms.

Anyone interested in theology and science will be stimulated to further analysis by reading this provocative book.

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