

“Come and See”: A Christological Invitation for Science

BY MARK NOLL

We believe in one God the Father all-powerful, Maker of heaven and of earth, and of all things both seen and unseen. And in one Lord Jesus Christ . . . , through whom all things came to be. . . .

[W]e all with one voice teach the confession of one and the same Son, our Lord Jesus Christ: the same perfect in divinity and perfect in humanity, the same truly God and truly man, of a rational soul and a body; consubstantial with the Father as regards his divinity, and the same consubstantial with us as regards his humanity; like us in all respects except for sin; begotten before the ages from the Father as regards his divinity, and in the last days the same for us and for our salvation from Mary, the Virgin God-bearer as regards his humanity; one and the same Christ, Son, Lord, Only-begotten, acknowledged in two natures which undergo no confusion, no change, no division, no separation; at no point was the difference between the natures taken away through the union, but rather the property of both natures is preserved and comes together into a single person and a single subsistent being; he is not parted or divided into two persons, but is one and the same only-begotten Son, God, Word, Lord Jesus Christ. . . .

The bearing of Christology on science involves historical as well as theological awareness. Historical awareness is required because the relationship between God’s “two books,” Scripture and nature, has changed significantly over the course of centuries between biblical times and the present. So long as Christian communities thought it was a straightforward task to harmonize what Scripture seemed to communicate about the natural world and what observing nature or reflecting on nature seemed to communicate, the discussion was contained.

This situation, with some exceptions, largely prevailed until the sixteenth century and the beginnings of the modern scientific era. Yet even in the centuries when challenges to a “literal” reading of Scripture were still relatively few, perceptive believers knew that considerable sophistication was necessary to bring together biblical interpretation and interpretations of nature. Thus, early in the fifth century, Saint Augustine noted that perceptive non-Christians really did know a great deal about “the earth, the heavens, and the other elements of the world, about the motion and orbit of the stars and even their size and relative positions, about the predictable eclipses of the sun and moon, the cycles of the years and the seasons, about the kinds of animals, shrubs, stones, and so forth.” Given such able observers, he held it was “a disgraceful and dangerous thing for an infidel to hear a Christian, presumably giving the meaning of Holy Scripture, talking nonsense on these topics.” When this kind of nonsense proliferated, the great danger was that those outside the faith would believe that the Scriptures themselves (“our sacred writers”) taught the nonsense and so would be put off from the life-giving message of the Bible. Augustine expressed this danger in this way: “If they find a Christian mistaken in a field which they themselves know well and hear him maintaining his foolish opinions about our books, how are they going to believe those books in matters concerning the resurrection of the dead, the hope of eternal life, and the kingdom of heaven, when they think their pages are full of falsehoods on facts which they themselves have learnt from experience and the light of reason?” His closing injunction was to chastise “reckless and incompetent expounders of Holy Scripture” who “defend their utterly foolish and obviously untrue statements” by calling on “Holy Scripture for proof and even recit[ing] from memory many passages which they think support their position.”¹ Yet comparatively speaking, in Augustine’s own lifetime and for long thereafter, there were relatively few

occasions when efforts at uniting scriptural teaching with knowledge gained from study of nature posed great difficulties.

That situation changed when the results of modern science called into question a growing array of straightforward, or “literal,” interpretations of the Bible. From the sixteenth century onward, the number of apparent problems accumulated. Hard-won conclusions in the natural sciences, gained through ever more intense and ever more sophisticated study of nature, seemed to contradict what the Scriptures taught. Thus, the earth was the center of neither the solar system nor the entire universe (as might be concluded from some biblical passages); the earth was billions of years old (not of recent vintage); the universe was unimaginably vast (not sized by human scale); animal “species” designated temporary way stations on continuously changing paths of evolutionary development (not permanently fixed entities); human beings were part of this evolutionary development (not a species distinct in every way from animals).

As these seeming contradictions became urgent in the development of modern science, believers wrestled long and hard to keep what was learned from nature and what was learned from Scripture in sync. While the difficulties for each particular question involving Scripture and nature were important, it is even more important to remember that they mattered only because of the larger framework spelled out by Saint Augustine. Since Scripture described the new life offered in Christ, which was the most important thing for all humans in all of history, to cast substantial doubt on Scripture for secondary concerns was to shake confidence in what the Bible revealed concerning the most important matter. Yet once that relationship between Scripture on all things (including nature) and Scripture on the most important thing (reconciliation with God in Christ) is kept in view, progress may be possible on issues involving Scripture and science. The key is that if Christ is the central and unifying theme of Scripture, then Christ should be preeminent in understanding scriptural revelation about everything else, including nature.

To view scientific exploration as a christological concern, it is helpful first to explore historical reasons for the difficulties besetting efforts at bringing scientific knowledge and biblical wisdom together. We will briefly explore some of that history as a prelude to the positive presentation, which begins with a case study from the career of the conservative Presbyterian theologian B. B. Warfield. Warfield, who taught at Princeton Theological Seminary in the late nineteenth and early twentieth centuries, is significant for our purposes because of how he deployed a crucial stance developed in thinking about Jesus when he came to evaluate modern theories of evolutionary development. The chapter ends by suggesting how explicit christological perspectives might guide Christian believers in thinking about the workings of science.

The Bible and Science Historically Considered

Of the many books that have treated the record of religious-science engagement since the sixteenth century, the best have demonstrated that there has never been a simple conflict between biblical theology and natural science.² Rather, that history has been marked by a sustained series of negotiations, breakthroughs, well-publicized flashpoints, much conceptual rethinking, lots of ignorant grandstanding, some intellectual overreaching by starry-eyed avatars of a supremely all-competent “Science,” some intellectual overreaching by determined “defenders” of Scripture, much noncontroversial science carried out by Christians, a huge quantity of scientific advance accepted routinely by believers, and much more.

At the dawn of modern science in the early seventeenth century, the iconic experimenter and polemicist Galileo Galilei recorded exceedingly wise words about how to combine investigations of nature with complete trust in Scripture. Implicit in his comments was an anchorage in christological realities that I

hope to make explicit at the end of this chapter. If Galileo’s guidelines had been followed, the history of science and religion in the modern West would have been much calmer than what actually unfolded. Galileo’s comments are worth quoting in full before exploring why it has been so difficult to follow his proposals for peace between belief in Scripture and reliance on the results of scientific investigation. His standpoint combined a number of basic dispositions:

- trust that sense experience, rigorously controlled and creatively contemplated, could reveal truths about nature;
- trust that biblical interpretation and scientific interpretation cannot in principle conflict because God is the author of both Scripture and nature;
- realization that much in the Bible is not intended as a scientific description of the world;
- realization that interpretation of Scripture and interpretation of nature often require legitimately different procedures; and
- confidence that what God allows humans to learn about nature could help discern what God has revealed in Scripture.

Here is what Galileo wrote:

It is most pious to say and most prudent to take for granted that Holy Scripture can never lie, as long as its true meaning has been grasped; but I do not think one can deny that this is frequently recondite and very different from what appears to be the literal meaning of the words. . . . I think that in disputes about natural phenomena one must begin not with the authority of scriptural passages but with sensory experience and necessary demonstrations. For the Holy Scripture and nature derive equally from the godhead, the former as the dictation of the Holy Spirit and the latter as the most obedient executrix of God’s orders; moreover, to accommodate the understanding of the common people it is appropriate for Scripture to say many things that are different (in appearance and in regard to the literal meaning of the words) from the absolute truth; on the other hand, nature is inexorable and immutable, never violates the terms of the laws imposed upon her, and does not care whether or not her recondite reasons and ways of operating are disclosed to human understanding; but not every scriptural assertion is bound to obligations as severe as every natural phenomenon; finally, God reveals Himself to us no less excellently in the effects of nature than in the sacred words of Scripture . . . ; and so it seems that a natural phenomenon which is placed before our eyes by sensory experience or proved by necessary demonstrations should not be called into question, let alone condemned, on account of scriptural passages whose words appear to have a different meaning. However, by this I do not wish to imply that one should not have the highest regard for passages of Holy Scripture; indeed, after becoming certain of some physical conclusions, we should use these as very appropriate aids to the correct interpretation of Scripture and to the investigation of the truths they must contain, for they are most true and agree with demonstrated truths. . . . I do not think one has to believe that the same God who has given us senses, language, and intellect would want to set aside the use of these and give us by other means the information we can acquire with them, so that we would deny our senses and reason even in the case of those physical conclusions which are placed before our eyes and intellect by our sensory

experiences or by necessary demonstrations.³

As helpful as what Galileo said in the early seventeenth century may still be 400 years later, it is obvious that his hopes for smooth sailing on the sea of science-religion interaction have not been realized. The tumults that have arisen, however, are not random or uncaused. Many, in fact, have been propelled by habits of mind established in Western thinking well before the age of scientific revolution or that came to prominence during the era of the Enlightenment. In other words, thinking about science and religion has always been strongly influenced, sometimes absolutely determined, by important assumptions about *how* that thinking should take place.⁴

Because some of these assumptions arose in the Middle Ages, the recondite debates of thirteenth-century Catholic philosophers actually go far in explaining difficulties that continue to this day.⁵ One particular dispute that has exerted a great influence on later Western history concerned the relationship of God's being to all other beings. Thomas Aquinas, the Dominican friar who lived from 1225 to 1274, argued that this relationship was *analogical*, that is, while humans and the created world were certainly *like* God in many ways, the essence of God remained ultimately a mystery known only to himself. Aquinas may well have been thinking of the passage in Isaiah 55:9 where the Lord tells the prophet,

As the heavens are higher than the earth, so are my ways higher than your ways and my thoughts than your thoughts.

The fact that God created the world out of nothing (*creatio ex nihilo*) was a crucial part of Aquinas's argument, because it meant that, while human minds could understand communication from God (i.e., revelation in nature, in Scripture, in Jesus Christ), they could in principle never grasp the essence of God. An interesting by-product of this position, which has taken on surprising relevance in contemporary debates, was Aquinas's understanding of randomness or contingency. Everything in the world, he insisted, happened because of God's direction. But some things happen contingently, or with the appearance of randomness. The logic of their contingency was perfectly clear to God, but because God in his essence is hidden to humans, humans may not be able to grasp how what they perceive as random could be part of God's direction of the universe.

The opposing view was maintained by the Franciscan priest and philosopher Duns Scotus, a younger contemporary of Aquinas who lived from 1266 to 1308. His position argued for the *univocity* of being. The only way to know the essence of anything is through its existence. Although God is much greater and much wiser than humans, his being and the being of all other things share a common essence. God is the creator and redeemer of humans, but his actions toward humans can (at least potentially) be understood reasonably well because the same laws of being apply to God as to everything else; the same way that we explain causation in every other sphere explains how God causes things to act and to be.

Scotus's approach to metaphysics (= the science of being) became, with a few exceptions, the dominant view in later Western history. It was particularly significant when joined to one more principle, this one from the English Franciscan, William of Ockham (1288-1348). Ockham's famous "razor" held that the simplest explanation was always the best explanation ("do not multiply entities unnecessarily"). Applied to science, this principle came to mean that if a natural event is explained adequately by a natural cause, there is no need to think about supernatural causes or even about the transcendent being of God.

The combination of these philosophical positions is responsible for an assumption that prevails widely to this day: *once something is explained clearly and completely as a natural occurrence, there is no other realm of being that can allow it to be described in any other way.*

For a very long time, this assumption was not regarded as anti-Christian, since God was considered the creator of nature and the laws of nature as well as the active providential force that kept nature running as he had created it to run. During the Reformation era, Protestants maintained that conviction, but also began to place a new stress on the importance of Scripture for understanding God, themselves, the church, and everything else.⁶ That emphasis was one of the important factors accelerating the rise of modern science. In particular, as Protestants set aside symbolic interpretations of Scripture, which had been prominent in the Middle Ages, they stressed straightforward examination of texts in what was often called a literal approach. This approach, in turn, stimulated a similar effort at examining the natural world in such a way that the medieval idea of God communicating to humans through “two books” (nature and Scripture) took on greater force. The assumption that became very important in this process was that *those who believed God created the physical world and revealed himself verbally in Scripture should harmonize in one complete picture what they learned about nature from studying nature and what they learned about nature from studying Scripture.* In both cases, literal knowledge was crucial, along with a belief that sources of literal knowledge could be fitted together harmoniously.

By the late seventeenth century, when science in its early modern form began to expand rapidly, yet a third conviction became important, which was worked out especially in the many efforts that went into constructing *natural theology*.⁷ Natural theology was the project of explaining, often in considerable detail, what God’s purposes were in creating the various parts of nature. Natural theology became a major enterprise when the earlier assumptions — metaphysical univocity and harmonization of the “two books”—encountered rapidly expanding knowledge about the physical world. Learned believers recognized the potential threat of this expanding knowledge—if scientific investigation could explain how nature worked as a system unto itself, maybe reliance on God and reference to the Scriptures were expendable. In response to this challenge, savants like Cotton Mather in the American colonies (*The Christian Philosopher*, 1721) and William Denham in England (*Physico-Theology*, 1713) offered elaborate explanations for how the structures of the physical and animal worlds revealed God’s purposes in creating things as he had made them.

The tradition of natural theology received its most famous exposition in a book by William Paley, an Anglican archdeacon, published in 1802. Its title explained what it was about: *Natural Theology: or, Evidence of the Existence and Attributes of the Deity*, collected from the appearances of nature. Paley’s method was to describe features of animal, human, or material life and then to show how these features manifested God’s design in and for nature. For example, the fact that animal and human bodies were symmetrical in outward appearance even as their internal organs and functions were asymmetrical provided Paley with “indubitable evidences, not only of design, but of a great deal of attention and accuracy in prosecuting the design.”⁸ The very important assumption behind the natural theology promoted by Paley was that *not only did God create and providentially order the natural world, but humans could figure out exactly how and why God ordered creation as he did.* This assumption became critically important when later investigators of nature concluded that it was not necessary to think about God’s intentions when figuring out how nature worked, and so belief in God was wrongheaded. In turn, those conclusions naturally antagonized the ones who continued to believe in God and therefore insisted either that new discoveries did in fact reveal a providential design or that the new discoveries had to be false.

Perhaps not many today who are engaged with contemporary debates in science and religion pause to think about historical turning points deep in the past. But the assumptions of univocal metaphysics, harmonization, and natural theology created powerful channels in which much subsequent discussion has flowed. During recent decades, much of the conflict involving religion and science has resulted from polemicists on all sides carrying deeply entrenched convictions, attitudes, and assumptions into the present. Sorting out ancient mental habits from recent novelties is difficult, however, in part because there are so many different factors feeding into the current situation, and in part because evaluating these factors requires delicately balanced judgments. As examples of broader concerns, the awareness that nonbelievers of several types regularly use the supposedly assured result of modern science to attack traditional Christianity is hardly a baseless fantasy. In addition, Christian believers of all sorts can only applaud the devotion to Scripture that has been so prominent in conservative Protestant history, but many believers today — including a growing number of evangelicals — question some of the assumptions about how best to interpret Scripture that evangelicals sometimes treat as interchangeable with trust in Scripture itself.

When considered historically, however, it seems obvious that the modern strength of young-earth Creation Science is almost entirely explainable as the continuation of former predispositions.⁹ To be sure, skillful publications like John Whitcomb and Henry Morris's *The Genesis Flood*, which appeared in 1961, have added new elements to the mix. And of course, they have been matched blow for blow by skillful antitheistic works like Richard Dawkins's *The God Delusion* that was published in 2006.

Yet the terms of debate in this modern polemical literature depend almost entirely on assumptions about metaphysical univocity, harmonization, and natural theology — as applied to modern questions and disseminated by democratic appeals to a broader public. In its turn, the Intelligent Design movement, with much more sophistication, still demonstrates a strong commitment to metaphysical univocity, harmonization, and natural theology, along with the use of modern probability theory and a tendency to treat the court of public opinion as a capable judge of controversial issues. Again, critics of Creation Science and Intelligent Design, both believers and unbelievers, also often share some of these attitudes, especially those derived from metaphysical univocity, harmonization, and natural theology.

If what I have sketched here portrays the past with any accuracy, it should be clear that when conservative Bible-believers object to different aspects of modern science, they do so on the basis of assumptions as well as arguments. Often missing in those considerations, however, are direct appeals to the heart of the Christian faith as defined by the person and work of Christ. Coming back to that center offers a better way of discriminating more accurately between assumptions well grounded in solid theology and those that are not.

A Case Study: B.B. Warfield, *Concursus*, and Evolution

A case study that shows how profitable it can be to approach scientific issues with Christological principles is provided by the career of Benjamin B. Warfield. In chapter 3, when discussing the doubleness of classical Christology, we saw how Warfield forcefully affirmed “this conjoint humanity and divinity [of Christ], within the limits of a single personality.”¹⁰ It was precisely this regard for the Chalcedonian definition of Christ's person and work that enabled Warfield to handle with relative ease the knotty questions about evolution that arose during his lifetime.

From his position at Princeton Theological Seminary, Warfield wrote steadily from the 1880s until shortly before his death in 1921 about many aspects of his era's developing evolutionary theories.¹⁰ These

writings included major essays devoted to Darwin’s biography (“Charles Darwin’s Religious Life” in 1888 and “Darwin’s Arguments against Christianity” the next year); several substantial articles directly on evolution or related scientific issues (“The Present Day Conception of Evolution” in 1895, “Creation versus Evolution” in 1901, “On the Antiquity and Unity of the Human Race” in 1911, and “Calvin’s Doctrine of Creation” in 1915); and many reviews of relevant books, some of them mini-essays in their own right.

In these works, Warfield repeatedly insisted on distinguishing among Darwin as a person, Darwinism as a cosmological theory, and evolution as a series of explanations about natural development. Of key importance was his willingness throughout a long career to accept the possibility (or even the probability) of evolution, while also denying Darwinism as a cosmological theory. In his mind, these discriminations were necessary in order properly to evaluate both the results of disciplined observation (science) and large-scale conclusions drawn from that science (theology or cosmology). Crucially, a Christological perspective was prominent when he applied these discriminations to evolutionary theory.

For positioning Warfield properly on these subjects, it is also vital to stress a conjunction of his convictions that has been much less common since his day. Besides his openness toward evolution, that is, Warfield was also the ablest modern defender of the theologically conservative belief in the inerrancy of the Bible.

During the late nineteenth century when critical views of Scripture came to prevail in American universities, Warfield was as responsible as any other American for refurbishing the conviction that the Bible communicates revelation from God entirely without error. Warfield’s formulation of biblical inerrancy, in fact, has even been a theological mainstay for recent “creationist” convictions about the origin of the earth.¹¹ Yet while he defended biblical inerrancy, Warfield was also a cautious, discriminating, but entirely candid proponent of the possibility that evolution might offer the best way to understand the natural history of the earth and of humankind. On this score his views place him with more recent thinkers who maintain ancient trust in the Bible while also affirming the modern scientific enterprise and mainstream scientific conclusions.¹² Warfield did not simply assert these two views randomly, but he sustained them learnedly, as coordinate arguments.

In the course of his career, both Warfield’s positions and his vocabulary did shift on the question of evolution. But they shifted only within a fairly narrow range. What remained constant was his adherence to a broad Calvinistic conception of the natural world — of a world that, even in its most physical aspects, reflected the wisdom and glory of God—and his commitment to the goal of harmonizing a sophisticated conservative theology and the most securely verified conclusions of modern science. To state once again his combination of positions, Warfield consistently rejected materialist or teleological explanations for natural phenomena (explanations that he usually associated with “Darwinism”), even as he just as consistently entertained the possibility that other kinds of evolutionary explanations, which avoided Darwin’s rejection of divine agency, could satisfactorily explain the physical world.

In several of his writings, Warfield carefully distinguished three ways in which God worked in and through the physical world. The most important thing about these three ways is that Warfield felt each of them was compatible with the theology he found in an inerrant Bible, if each was applied properly to natural history and to the history of salvation. “Evolution” meant developments arising out of forces that God had placed inside matter at the original creation of the world-stuff, but that God also directed to predetermined ends by his providential superintendence of the world. At least in writings toward the end of his life, Warfield held that evolution in this sense was fully compatible with biblical understandings of the production of the human body. “Mediate creation” meant the action of God upon matter to bring

something new into existence that could not have been produced by forces or energy latent in matter itself. He did not apply the notion of “mediate creation” directly in his last, most mature writings on evolution, but it may be that he expounded the concept as much to deal with miracles or other biblical events as for developments in the natural world.¹³ The last means of God’s action was “creation *ex nihilo*,” which Warfield consistently maintained was the way that God made the original stuff of the world.

On questions relating to evolution, orthodox Christology became relevant when Warfield invoked the concept of *concursum*. By this term he meant the coexistence of two usually contrary conditions or realities. In speaking of the person of Christ he had used a closely related term, “conjoined.” For broader intellectual purposes, the key was to apply the same sense of harmoniously conjoined spheres to other domains.

As we will see with somewhat more detail when taking up Christology in relation to Scripture, Warfield held that the biblical authors were completely human as they wrote the Scriptures, even as they enjoyed the full inspiration of the Holy Spirit.¹⁴ This principle, grounded in Christology and exemplified in the Bible, was also his guide for positing an (evolutionary) approach to nature where all living creatures were thought to develop fully (with the exception of the original creation and the human soul) through “natural” means. Warfield’s basic stance, expressed first about Christ and then extrapolated for Scripture, was a doctrine of providence that saw God working in and with, instead of as a replacement for, the processes of nature. Late in his career, this same stance also grounded Warfield’s opposition to “faith healing.” In his eyes, physical healing through medicine and the agency of physicians was as much a result of God’s action (if through secondary causes) as the cures claimed as a direct result of divine intervention.¹⁵ *Concursum* was as important and as fruitful for his views on evolution as it was for his theology as a whole. It was a principle he felt the Scriptures offered to enable humans both to approach the world fearlessly and to do so for the greater glory of God.

Warfield’s strongest statement on evolution came in 1915 when he published a lengthy article on John Calvin’s view of creation.¹⁶ Although he never stated it in so many words, it is clear that the convictions he ascribed to Calvin were also his own. He summarizes what he read in Calvin: “It should scarcely be passed without remark that Calvin’s doctrine of creation is, if we have understood it aright, for all except the souls of men, an evolutionary one.” God had called the “indigested mass” into existence *ex nihilo*, with a full “promise and potency” of what was to develop from that mass. Yet, according to Warfield’s summary of Calvin, “all that has come into being since — except the souls of men alone — has arisen as a modification of this original world-stuff by means of the interaction of its intrinsic forces.” Warfield went on to affirm a robust doctrine of providence, whereby “all the modifications of the world-stuff have taken place under the directly upholding and governing hand of God, and find their account ultimately in His will.” Critically, however, he saw these later modifications taking place through “secondary causes.” And once “secondary causes” were viewed as the means by which the original creation was modified, we have, according to Warfield, “not only evolutionism but pure evolutionism.”

Warfield makes clear that Calvin did not himself explicitly embrace evolutionary theory since Calvin “had no conception” of “the interaction of forces by which the actual production of forms was accomplished.” Thus, lacking the information provided by modern students of nature, Calvin did not advocate a “theory” of evolution. But, Warfield insists, he did teach “a doctrine of evolution” that pictures God as producing the material stuff of the world “out of nothing,” but then “all that is not immediately produced out of nothing is therefore not created — but evolved.” Warfield then translates Calvin’s notion of “secondary causes” into what he defines as “intrinsic forces.” Warfield’s summary repeats a second time:

“And this, we say, is a very pure evolutionary scheme.”

The point where Christology enters is where Warfield explains the deeper theology at work. In his summary, “Calvin’s ontology of second causes was, briefly stated, a very pure and complete doctrine of *concursum*, by virtue of which he ascribed all that comes to pass to God’s purpose and directive government.” For readers of Warfield in the twenty-first century, it is frustrating that he did not go further in expounding on this theological basis. He does say that the “account” of how “secondary causes” work is “a matter of ontology; how we account for their existence, their persistence, their action—the relation we conceive them to stand in to God, the upholder and director as well as creator of them.” But for his purposes with this essay, Warfield does not explore those ontological issues. The regret now is that, if he had taken up these ontological questions, he may have considered the Western tradition of univocity that had, in effect, dispensed with *concursum* in explaining the physical world.

As it is, we still have a most intriguing contribution to theology, science, and science considered in connection with theology. Warfield’s discussion of Calvin on evolution certainly indicated that he thought his very high view of biblical inspiration was fully compatible with comprehensive forms of evolutionary science (as distinct from evolutionary cosmology). Whether Warfield interpreted Calvin correctly or not, whether Warfield understood correctly his era’s scientific discoveries (in which he was well read for an amateur), or whether his own efforts at bringing together his era’s scientific knowledge and his interpretation of the biblical record were correct — these are all important but secondary issues. The main point lies elsewhere. The Scriptures that Warfield trusted implicitly revealed a God to him who created the world, providentially superintended the world, and gave human beings the capacity to explain the world naturally (in terms of “secondary causes”). The key theological principle that enabled Warfield to draw these conclusions was his belief in the classical Christology of Nicea and Chalcedon.

Warfield’s writings on evolution, the last of which appeared in the year of his death, 1921, cannot, of course, pronounce definitively on theological-scientific questions at the start of the twenty-first century. They can, however, show that sophisticated theology, nuanced argument, and careful sifting of scientific research are able to produce a much more satisfactory working relationship between science and theology than the heated strife that has dominated public debate on this subject since the time of Warfield’s passing.

A Christology for Science

The theologian Robert Barron has nicely clarified much of what lies behind recent conflicts over human origins that feature supposedly biblical truths contending against supposedly scientific conclusions. In his words, “recent debates concerning evolutionist and ‘creationist’ accounts of the origins of nature are marked through and through by modern assumptions about a distant, competitive, and occasionally intervening God, whether the existence of such a God is affirmed or denied.”¹⁷ Barron’s response to these modern debates is a sophisticated exposition of classical Christology aimed at his theological peers. My effort is much simpler and is aimed at academics in general, but it comes from the same christological perspective.

Christ as Creator, Sustainer, Redeemer

Classical Christian orthodoxy as expressed in the creeds that summarize the Scriptures begins at the beginning: nature owes its existence to and is sustained by Jesus Christ. From this starting point several

important ramifications follow naturally.

One is the implication that the best way of finding out about nature is to look at nature. This implication comes directly from the christological principle of contingency (see above, 49-55). As described in the Gospels, individuals who wanted to learn the truth about Jesus had to “come and see.” Likewise, to find out what might be true in nature, it is necessary to “come and see.”

The process of “coming and seeing” does not lead to infallible truth about the physical world since there is no special inspiration from the Holy Spirit for the Book of Nature as there is for the Book of Scripture. But “coming and seeing” is still the method that belief in Christ as Savior privileges for learning about all other objects, including nature. This privileging means that scientific results coming from thoughtful, organized, and carefully checked investigations of natural phenomena must, for Christ-centered reasons, be taken seriously.

From this perspective, the successes of modern science in recent centuries testify implicitly to the existence of a creating and redeeming God. To once again quote Robert Barron, scientific activity by its very nature “implies . . . an unavoidable correspondence between the activity of the mind and the structure of being: intelligence will find its fulfillment in this universal and inescapable intelligibility.” But how can this implication be justified? According to Barron, “the universality of objective intelligibility (assumed by any honest scientist) can be explained only through recourse to a transcendent subjective intelligence that has thought the world into being, so that every act of knowing a worldly object or event is, literally, a recognition, a thinking again of what has already been thought by a primordial divine knower.”¹⁸ In lay language, the “transcendent subjective intelligence” and the “primordial divine knower” guarantee the possibility that a researcher’s mind can grasp something real about the world beyond the mind. The Scriptures—in John 1, Colossians 1, and Hebrews 1 — provide a name for that “intelligence” and that “knower.” In these terms, the existence of nature and the possibility of understanding nature presuppose Jesus Christ.

A second implication arising from the centrality of Christ in creation concerns the interpretation of Scripture. Classic biblical texts about the purpose of the Bible reinforce the foundational principle that the believers’ confidence in Scripture rests on its message of salvation in Jesus Christ. Thus, in John 20, the Gospel story has been written down so “that you may believe that Jesus is the Christ, the Son of God, and that by believing you may have life in his name” (20:31). In 2 Timothy 3, the inspired or God-breathed “holy scriptures” have as their main purpose instruction “for salvation through faith in Christ Jesus” (3:15). And in 2 Peter 1, “the word of the prophets made more certain” as these prophets were “carried along by the Holy Spirit” (1:19, 21) deals preeminently with “the power and coming of our Lord Jesus Christ” (1:16).

As these passages suggest, salvation in Christ anchors the believer’s confidence that all of Scripture is trustworthy.¹⁹ But because of that supreme fact, the effort to understand *how* Scripture is trustworthy for questions like the ordering of nature should never stray far from consideration of Christ and his work. Yet as we have seen, “Christ and his work” includes, as an object, the material world of creation, and as a method, “come and see.” In other words, following the Christ revealed in Scripture as Redeemer means following the Christ who made it possible for humans to understand the physical world and offered a means (“come and see”) for gaining that understanding.

Final and ultimate disharmony between what “come and see” demonstrates about Christ and what “come and see” reveals about the world of nature is impossible. This Christ is the same one through whom God has worked “to reconcile to himself all things . . . making peace through his blood, shed on the

cross” (Col. 1:20) and in whom “all things were created” and in whom “all things hold together” (1:16-17).

Yet it is indisputable that on some science-theology questions, trust in Christ (and therefore trust in Scripture) has seemed to conflict with trusting in what Christ-authorized procedure (“come and see”) reveals about a Christ-created and Christ-sustained world. The parade of difficult questions arising from the effort to bring together standard interpretations of Scripture and standard interpretations of the natural world is a long one. Trying to answer these questions has been a consistent feature of the modern scientific age.

- In the nineteenth century, many earnest believers were wondering, if “coming and seeing” in geology and astronomy led to the conclusion that material existence has a very long history, should the “days” of Genesis 1 be understood as long periods of time or should a new interpretation of Genesis 1:1 be adopted that posits a “gap” between “in the beginning” and “God created”?
- More recent advances in both historical understanding (the ancient Near East) and empirical science (genetics, biology, astronomy) have prompted questions about the creation accounts of early Genesis. Well-trained scientists with strong Christian convictions have followed the Christ-rooted procedure of “coming and seeing” in their study of physical evidence for the origin of the universe and have concluded that much of standard evolutionary theory seems well grounded.²⁰ Similarly, well-trained biblical scholars with strong Christian convictions have followed the Christ-rooted procedure of “coming and seeing” in their study of ancient Near Eastern cultures and have concluded that the early chapters of Genesis seem to be directly concerned about attacking idol-worship that substituted the sun or the moon for God.²¹ Given the combination of these two streams of testimony, should it be thought that early Genesis is not concerned with modern scientific questions but is very much concerned about encouraging worship of the one true God who is the originator and sustainer of all things?
- Even more recently, the rough consensus on evolutionary change assembled from many scientific disciplines makes for even more complex questions: for example, if human evolution seems indicated by a wide range of responsible scientific procedures (“come and see”), how might responsible biblical interpretation understand the New Testament stress on Christ (very definitely in historical time and historical space) as overcoming the sinfulness inherited from Adam and Eve, whom Scripture, at least on a surface level, also represents as individuals in historical time and historical space?

All such questions caused understandable consternation when they were first raised, since they challenged specific interpretations of Scripture that had been tightly interwoven with basic interpretations of the entire Bible. Even after long and hard thought, such questions continue to pose definite challenges.

Answering such questions responsibly requires sophistication in scientific knowledge and sophistication in biblical interpretation — exercised humbly, teachably, and nondefensively. Unfortunately, these traits and capacities have not always predominated when such questions are addressed. But the difficult questions will almost certainly only continue to multiply because of two ongoing realities: the Holy Spirit continues to bestow new life in Christ through the message of the cross found in Scripture, and responsible investigations lead plausibly to further evolutionary conclusions from the relevant scientific disciplines.

A Chalcedonian Perspective

The multiplication and intensification of such questions are, however, no cause for despair. For those with Christ these questions present instead a golden opportunity for returning to first principles. Almost the

very first of those first principles is the Chalcedonian definition of Christ as fully divine and fully human in one integrated person.

If the mystery of divinity and humanity fully inhabiting a single being is at the heart of Christian faith, and if this faith offers Christ as the definite answer to the deepest mysteries of existence itself, then there is a way forward. It is not a way forward along the path of late medieval univocity when it was assumed that a natural explanation for any phenomenon was a fully sufficient explanation. It is not a way forward along the path of William Paley's natural theology where it is assumed that humans may have God-like knowledge about the final purpose of physical phenomena. And it is not a way forward that either trivializes the Scriptures or distrusts modern science for ideological reasons. It is instead a way forward that tries to give both the study of nature its proper due as made possible because of Christ's creating work, and the interpretation of Scripture its proper due as revealing the mercy of redemption in Christ.

On specific questions concerning evolution, promising recent suggestions resting on classical Christology have come from Catholic scientists and theologians who draw on the insights of Thomas Aquinas. In particular, Thomas resisted the push toward univocity as he defended the complexity of the divine-human mystery at the heart of the universe. In his own day, as we have seen, Duns Scotus treated God and humanity as existing on a common metaphysical plane; God was infinitely greater than humans, but in quantity, not quality. No, said Thomas Aquinas, since humans are creatures and the triune God was the creator, humanity and deity do not share the same metaphysical plane. Hence, there must always be separation between human knowledge about existence and divine knowledge. Robert Barron states Thomas's position carefully: "Aquinas maintained consistently throughout his career that God is inescapably mysterious to the human intellect, since our frame of reference remains the creaturely mode of existence, which bears only an analogical resemblance to the divine mode of being. . . . The 'cash value' of the claim that God exists is that there is a finally mysterious source of the to-be of finite things."²²

One of the payoffs in the twenty-first century from this thirteenth century insight is relevant to debates about evolution, where the consensus in several scientific specialties posits a key role for "randomness" in describing physical changes over time. Thomas Aquinas offered what amounts to a prescient response when he described the contingency of much that transpires in the world (his contingency may be taken as roughly our randomness): "The effect of divine providence is not only that things should happen somehow, but that they should happen either by necessity or by contingency. Therefore, whatsoever divine providence ordains to happen infallibly and of necessity happens infallibly and of necessity; and that happens from contingency, which the divine providence conceives to happen from contingency."²³ God, in other words, never works capriciously, even though some providentially determined actions may look to humans like pure contingency. The metaphysical difference between God and humanity explains this difference in perspective.

A very recent Catholic statement has applied this type of reasoning to arguments between those who advocate Intelligent Design and those defending a purely unguided evolutionism. According to its authors, because this debate concerns "whether the available data support inferences of design or chance," the debate "cannot be settled by theology." That is to say, when empirical results are in view, the way to solve the questions is to "come and see." But the statement goes on with sophisticated attention to broader contexts: "It is important to note that, according to the Catholic understanding of divine causality, true contingency in the created order is not incompatible with a purposeful divine providence. Divine causality and created causality radically differ in kind and not only in degree. Thus, even the outcome of a truly contingent natural process can nonetheless fall within God's providential plan for creation."²⁴ Questions of

chance and randomness exist on two levels, the empirical and the philosophical/theological. Each level deserves its own serious attention.

Under the assumptions promoted by medieval univocity, early modern theories of harmonizing Scripture and nature, and natural theology in the era of the Enlightenment, it has become customary to think that scientifically demonstrated randomness in nature counts as knockdown evidence against the existence of God. But this is both a logical and an ontological error. As phrased recently by the philosopher Alvin Plantinga, it is a logical error to move from asserting, “We know of no irrefutable objections to its being biologically possible that all of life has come to be by way of unguided Darwinian processes,” to concluding: “All of life has come to be by way of unguided Darwinian processes.”²⁵ It is an ontological error for the same reason that it is erroneous to think that if Jesus hungered and thirsted, he could not be the Son of God.

Satisfactory resolution of problems stemming from responsible biblical interpretation brought together with responsible interpretations of nature will not come easily. Such resolution requires more sophistication in scientific knowledge, more sophistication in biblical hermeneutics, and more humility of spirit than most of us possess. But it is not wishful thinking to believe that such resolution is possible. It is rather an expectant hope that grows directly from confidence in what has been revealed in Jesus Christ. If, therefore, humbly responsible thinkers, properly equipped scientifically and hermeneutically, conclude that the full picture of human evolution now standard in many scientific disciplines fits with a trustworthy interpretation of Scripture, that conclusion can be regarded as fully compatible with historic Christian orthodoxy as defined by the normative creeds.

Notes

1. *St. Augustine, “The Literal Meaning of Genesis,”* 2 vols., translated and annotated by John Hammond Taylor, S.J. (New York: Newman, 1982), 1:42-43. The quotations from Augustine and Galileo in this chapter are repeated from *The Scandal of the Evangelical Mind* because they are two of the sanest authoritative analyses ever uttered on the “problem” of Christianity and science.
2. See especially John Hedly Brooke, *Science and Religion: Some Historical Perspectives* (New York: Cambridge University Press, 1991); David C. Lindberg and Ronald L. Numbers, eds., *God and Nature: Historical Essays on the Encounter between Christianity and Science* (Berkeley: University of California Press, 1986); and David C. Lindberg and Ronald L. Numbers, eds., *When Science and Christianity Meet* (Chicago: University of Chicago Press, 2003). An excellent reference work is Gary B. Ferngren, ed., *The History of Science and Religion in the Western Tradition: An Encyclopedia* (New York: Garland, 2000).
3. “Galileo’s Letter to the Grand Duchess” (1615), in *The Galileo Affair: A Documentary History*, ed. Maurice A. Finocchiaro (Berkeley: University of California Press, 1989), 92-94.
4. The following paragraphs are taken, with revisions, from Mark A. Noll, “Evangelicals, Creation, and Scripture: An Overview,” *BioLogos Forum* (November 2009), available from biologos.org/uploads/projects/Noll_scholarly_essay.pdf (accessed May 17, 2010).
5. This section relies on Amos Funkenstein, *Theology and the Scientific Imagination from the Middle Ages to the Seventeenth Century* (Princeton: Princeton University Press, 1986), especially 25-31.
6. See in particular Peter Harrison, *The Bible, Protestantism, and the Rise of Natural Science* (New York: Cambridge University Press, 1998).
7. For particularly astute treatment, see Brooke, *Science and Religion*, 192-225.
8. William Paley, *Natural Theology*, ed. Matthew D. Eddy and David Knight (New York: Oxford University Press, 2006; original 1802), 101.

9. For the best history, see Ronald L. Numbers, *The Creationists*, expanded ed. (Cambridge: Harvard University Press, 2006), and for a solid general survey, Michael Ruse, *The Evolution-Creation Struggle* (Cambridge: Harvard University Press, 2005).
10. Most of these works are reprinted, with editorial introductions, in B. B. Warfield, *Evolution, Science, and Scripture: Selected Writings*, ed. Mark A. Noll and David N. Livingstone (Grand Rapids: Baker, 2000).
11. For the direct use of Warfield on the inerrancy of Scripture, see John C. Whitcomb Jr. and Henry M. Morris, *The Genesis Flood: The Biblical Record and Its Scientific Implications* (Philadelphia: Presbyterian and Reformed, 1961), xx.
12. For example, Bernard Ramm, *The Christian View of Science and Scripture* (Grand Rapids: Eerdmans, 1954); Russell L. Mixer, ed., *Evolution and Christian Thought Today* (Grand Rapids: Eerdmans, 1959); D. C. Spanner, *Creation and Evolution: Some Preliminary Considerations* (London: Falcon Books, 1966); Malcolm A. Jeeves, ed., *The Scientific Enterprise and Christian Faith* (Downers Grove, IL: InterVarsity, 1969); Donald M. MacKay, *The Clockwork Image: A Christian Perspective on Science* (Downers Grove, IL: InterVarsity, 1974); Thomas F. Torrance, *Christian Theology and Scientific Culture* (New York: Oxford University Press, 1981); Davis A. Young, *Christianity and the Age of the Earth* (Grand Rapids: Zondervan, 1982); Charles E. Hummel, *The Galileo Connection: Resolving Conflicts between Science and the Bible* (Downers Grove, IL: InterVarsity, 1986); J. C. Polkinghorne, *OneWorld: The Interaction of Science and Theology* (Princeton: Princeton University Press, 1986); Howard J. Van Till, *The Fourth Day: What the Bible and the Heavens Are Telling Us about the Creation* (Grand Rapids: Eerdmans, 1986); John Houghton, *Does God Play Dice? A Look at the Story of the Universe* (Leicester, England: InterVarsity Press, 1988); Philip Duce, *Reading the Mind of God: Interpretation in Science and Theology* (Leicester, England: Apollos, 1998); Alister McGrath, *The Foundations of Dialogue in Science and Religion* (Oxford: Blackwell, 1998); Francis Collins, *The Language of God: A Scientist Presents Evidence for Belief* (New York: Free Press, 2007); Denis O. Lamoureux, *Evolutionary Creation: A Christian Approach to Evolution* (Eugene, OR: Wipf and Stock, 2008); and Karl W. Giberson, *Saving Darwin: How to Be a Christian and Believe in Evolution* (New York: HarperOne, 2008).
13. Warfield deployed a similar vocabulary in a discussion of miracles that he published at about the same time; see “The Question of Miracles,” in *The Bible Student* (March-June 1903), as reprinted in *The Shorter Writings of Benjamin B. Warfield*, vol. 2, ed. John E. Meeter (Nutley, NJ: Presbyterian and Reformed, 1973), 167-204.
14. See below, 130-32.
15. See Warfield, *Counterfeit Miracles* (New York: Scribner, 1918).
16. For Warfield’s complete essay, see “Calvin’s Doctrine of the Creation,” in *The Works of Benjamin B. Warfield*, vol. 5, *Calvin and Calvinism* (New York: Oxford University Press, 1931), 287-349. The quotations that follow are taken from Warfield, *Evolution, Science, and Scripture*, 308-9.
17. Robert Barron, *The Priority of Christ: Toward a Postliberal Catholicism* (Grand Rapids: Brazos, 2007), 221. For convenience, I return several times in the following paragraphs to this book by Robert Barron. But there are other parallel efforts, for example from the physicist and Anglican theologian John C. Polkinghorne, in books like *Belief in God in an Age of Science* (New Haven: Yale University Press, 1998), and *Science and the Trinity; The Christian Encounter with Reality* (New Haven: Yale University Press, 2004).
18. Barron, *Priority of Christ*, 154.

19. See above on providence.
20. Barron, *Priority of Christ*, 13.
21. *A Summa of the Summa*, ed. Peter Kreeft (San Francisco: Ignatius, 1990), 174 (from Thomas Aquinas, *Summa Theologica*, I, 22, 4).
22. Barron, *The Priority of Christ*, 13.
23. *A Summa of the Summa*, ed. Peter Kreeft (San Francisco: Ignatius, 1990), 174 (from Thomas Aquinas, *Summa Theologica* I.22.4).
24. The Roman Curia: Pontifical Commissions, “Communion and Stewardship: Human Persons Created in the Image of God” (July 23, 2004); published in *La Civiltà Cattolica*, 2004, I, 254-86. Available on the Web at www.vatican.va/roman_curia/congregations/cfaith/cti_documents/rc_con_cfaith_doc_20040723_communion_dstewardship_en.html (accessed May 18, 2010).
25. Alvin Plantinga, “The Dawkins Delusion,” *Books & Culture*, March/April 2007, 22.