

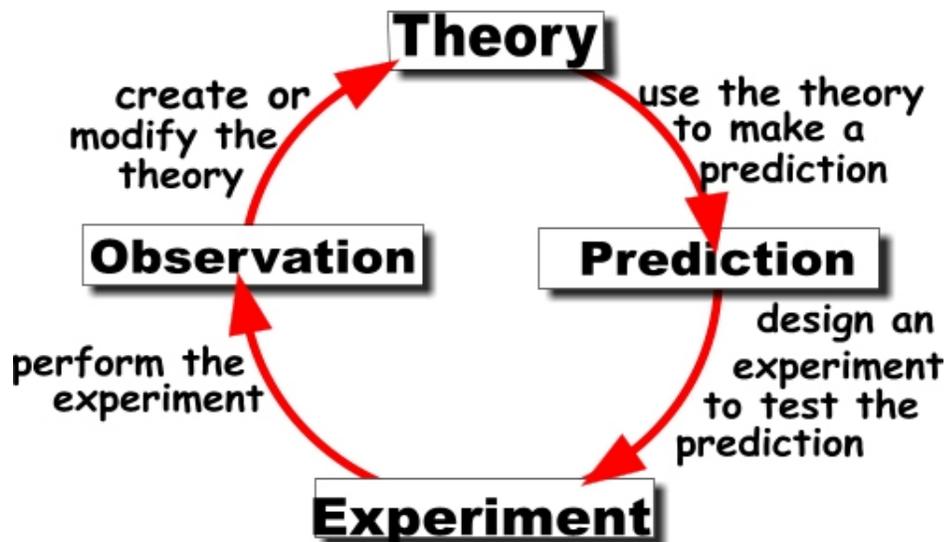
Claims and Conclusions

*Beauty is truth, truth beauty;
That is all ye know on earth
And all ye need to know.* - John Keats, Ode to a Grecian Urn

These memorable lines from Keats suggest several important claims about reality. They suggest an equivalence between truth and beauty; a similarity between experiencing beauty and knowing; that humans may have limited understanding but such limitation may be unimportant or irrelevant. At the very least, they prod us to reflection - with Pilate, we might ask, What is truth? And, more to Keats' point, What is beauty? Finally, in what sense is beauty equivalent to truth and to our knowledge of truth? Since the Enlightenment, during which science won its intellectual battle with Romanticism (which included Keats' poem), the scientific method has been very successful at turning claims about the natural world into tentative conclusions through its integration of reason (essentially, applying the rules of logic to analyze problems) with empirical evidence (publicly verifiable facts)¹.

In this commitment to empirical data (measurements or observations available for others to examine), science runs counter to the Bible's definition of faith. "Now faith is being sure of what we hope for and certain of what we do not see."² "Because you have seen me, you have believed; blessed are those who have not seen and yet have believed."³ Some Christian commentators on science claim that the Bible provides adequate evidence and praises reason and evidence-seeking (e.g., "Come now and let us reason together"⁴), but in affirming belief without seeing--or, as Pastor John Carter explains it--"You must believe to see," the Bible applauds belief without empirical verification--or at least it requires belief prior to providing relevant evidence. Even then, the evidence offered reflects subjective experience or personal confidence more than absolute certainty about an objective reality⁵.

Before we examine more closely the Bible's perspective on evidence and epistemology, let's consider why scientists have (I believe erroneously, which I attempt to explain later) often ridiculed the claims of faith as irrelevant or even opposed to their endeavors. To do this, we will need to explore a bit of logic. Consider the following diagram:



This framework provides a generally accepted although simplified model of how science works. Controversies swirl regarding the best place to start in this somewhat circular process, but these basic steps appear in most contemporary introductions to the scientific method. Scientific theories, or models of reality, imply (predict) certain facts about nature. Scientists conduct tests of these implications by measuring or observing a portion of nature. These measures or observations (data) then endure scrutiny to determine if they correspond to the implications derived from the theory. If they don't, either the data or the theory undergoes (or both undergo) further study in an effort to reconcile the data with the prediction.

Formal logic gets involved at two critical points: 1) deriving theoretical predictions, and 2) determining whether the data agree with those predictions. In other words, the rules of logic determine whether a given theory actually predicts some hypothetical outcome, as well as the implications for the theory from particular (empirical) observations. In this regard, the Wason card task⁶ illustrates the two relevant principles of deductive logic. In this task, participants view cards with either a letter or a number on each side. Given the following four cards, A, K, 4 and 7, the question is: Which card(s) are necessary and sufficient⁷ to verify the following rule: *If there's a vowel on one side, then there's an even number on the other side.* You may try to solve this riddle before reading on.



It turns out that two and only two cards must be turned over to verify this rule. First, the "A" card must be turned over. This applies *modus ponens* - P implies Q; given P, therefore Q (where "P" and "Q" are propositional statements or, we might say, claims about reality; the "P" statement is called the *antecedent*, and the "Q" statement the *consequent*). If there's a vowel on one side (P, the *antecedent*), then there's an even

number on the other side (Q, the *consequent*). If this rule relating P and Q is true, then there should be an even number on the other side of the vowel, A. Next, the opposite side of the “7” card must be inspected. This illustrates the principle of *modus tollens* - P implies Q; give not-Q, therefore not-P. A “7” is NOT an even number, so if the rule is true, then there should be an even number (consequent) opposite a vowel (antecedent). If there’s a vowel on the other side of the 7, then the rule would not be true. In this case, logicians would say that the rule has been falsified. Falsification is a prominent feature of useful scientific theories; more on this later.

We may use syllogisms to illustrate these two principles of deductive logic. For example, I might say, Fennville is in Michigan; I am in Fennville; therefore, I am in Michigan. This syllogism, with its two premises “Fennville is in Michigan” (antecedent) and “I am in Fennville” (consequent), and conclusion, “Therefore, I am in Michigan” represents the operation of *modus ponens*. If both initial premises are true, the conclusion follows as a logical consequence--it must also be true.

A similar syllogism can be used to illustrate *modus tollens* - Fennville is in Michigan; I am not in Michigan; therefore, I am not in Fennville. Again, if the two premises are true, the conclusion must be true according to deductive logic. Applying these ideas to the scientific method equates theories to the “P” segment (the *antecedent*) in these principles, and theoretical predictions to the “Q” statements (the *consequent*). So, for example, we might theorize that males are more aggressive than females (P). This theory predicts, among many other possible implications, that boys at daycare centers will be more aggressive than girls (Q). If our theory is true, then observing children at a daycare center should yield supportive empirical evidence. For example, we could count the number of times in a week each child hits another child with her or his closed fist. The average number of such hits by boys should exceed the average number of hits by girls--if our theory, our model of reality, is true.⁸

If you chose either of the remaining two cards, you made one of the following logical errors - choosing the “4” card involves *affirming the consequent*, and choosing the “K” card represents *denying the antecedent*. In their well-intentioned efforts to avoid these errors of logic, scientists may dismiss the claims of Biblical faith; thus, both these illogical conclusions are very important to our discussion.

Continuing with our geographical examples, we could say, Fennville is in Michigan; I am in Michigan; therefore, I am in Fennville. Because I might be in Michigan but not in Fennville, this syllogism violates deductive logic by seeking to affirm the consequent “I am in Michigan” with the conclusion “I am in Fennville.” To be in Fennville is to be in Michigan, but the opposite is not true. Logically, one could very well be in Michigan without being in Fennville. More technically, the set of places in Michigan includes Fennville but essentially an unlimited number of other possibilities. Without validated, simultaneous inclusion of EACH ONE of these alternatives, we simply cannot conclude we’re in any one of them because we’re in Michigan.

Let me offer a more familiar example to illustrate this logical fallacy - sometimes used in creation science: If there was a world-wide flood that covered all the mountains, we should observe fossils of sea creatures on the tops of mountains; we do observe such fossils; therefore, there was a world-wide flood. Because there may be other reasons than a world-wide Noachian deluge why we might observe fossils of sea creatures on the tops of mountains, reasoning that fossils of sea creatures on mountaintops constitute evidence for a world-wide flood invokes the logical fallacy of affirming the consequent.

Here's an even more familiar--and provocative--illustration: If nature had a designer, we should observe evidence of design in nature; we do observe abundant evidence for design in nature; therefore, nature had a designer. We may like it or not, but reasoning that follows this syllogism commits the logical fallacy of affirming the consequent. To restate this in a technical way, scientists reject "teleological" models--theories that imply *a priori* purpose or intention (i.e., design)--so-called "goal-directed" explanations. I must hasten to add that a great deal of effort has sought in vain to provide an adequate alternative explanation to purposeful intent for the ubiquitous appearance of design (teleology) in nature⁹; this continued failure and the increasing number of instances of apparent design¹⁰ may strengthen our confidence in the "design hypothesis" but unfortunately can never prove it to be true, logically or, by implication, scientifically.

Similarly, the syllogism, Fennville is in Michigan; I am not in Fennville; therefore, I am not in Michigan, illustrates the logical error of denying the antecedent. I very well could be in Michigan even though I'm not in Fennville, so by claiming I am not in Michigan because I am not in Fennville denies the antecedent condition that Fennville is in Michigan. Both affirming the consequent and denying the antecedent involve the non-commutative relationship between Michigan (by analogy, a theory) and Fennville (by analogy, a theoretical prediction).¹¹ Again, here's a familiar example sometimes used by creation scientists that involves denying the antecedent: Science conjectures that modern apes and humans share a common ancestor; science has failed to confirm such an ancestor; therefore, modern apes and humans do not share a common ancestor. Although we may believe from the witness of sacred Scripture that humans do not share a common ancestor with modern apes, to use the syllogism above to argue against the evolution of modern humans commits the logical error of denying the antecedent. At times, scientists may reject creationist conclusions because such claims involve one or both of these errors of deductive logic.

Should Christians who accept the Bible as God's Word ignore these challenges? That's certainly an option, but not one I would choose. Instead, two conclusions suggest themselves to me. First, we need to acknowledge the logical objections to certain concepts within creation science that many well-intentioned but agnostic scientists may hold. Although I believe the methods of science outlined earlier in this chapter can be competently practiced by both believers and nonbelievers alike, as part of their faith,

believers do accept some *a priori* realities beyond the reach of logical or scientific critique. I believe we have good reasons for these assumptions, but we must admit they're not scientific reasons in the strict, narrow sense defined by the rules of deductive logic. However, I also think that at least for the believer, the truth of Scripture must inform any and all conjectures about Nature.

In the words of a respected Christian author, Ellen White, "To learn science through human interpretation alone is to obtain a false education, but to learn of God and Christ is to learn the science of heaven. The confusion in education has come because the wisdom and knowledge of God have not been exalted."¹² God's existence as Creator and Sustainer of the universe thus forms the foundation and context for all scientific investigation and discovery. The success of science based on the rules of logic could imply a logical, reasonable reality, designed by a rational, predictable, trustworthy Creator, just as surely as it may imply the validity of logic as a guide to investigation. In the former case, science merely discovers an existing, objective reality that includes reason and logic as reflecting or implying the nature of that reality. In the latter case, human inventions (e.g., deductive logic) have led to an empirical, conceptual edifice, tentatively held and subject to revision.¹³ Nonetheless, creation scientists share with unbelievers the tentative, revisable nature of scientific inquiry--yet within a presumed larger reality derived from an acceptance of divine revelation through Scripture.¹⁴

The apostle Paul similarly affirmed an ultimate prioritization for knowledge of reality: "For it is written: 'I will destroy the wisdom of the wise; the intelligence of the intelligent I will frustrate.' Where is the wise man? Where is the scholar? Where is the philosopher of this age? Has not God made foolish the wisdom of the world? For since in the wisdom of God the world through its wisdom did not know him, God was pleased through the foolishness of what was preached to save those who believe. Jews demand miraculous signs and Greeks look for wisdom, but we preach Christ crucified: a stumbling block to Jews and foolishness to Gentiles, but to those whom God has called ... both Jews and Greeks, Christ the power of God and the wisdom of God. For the foolishness of God is wiser than man's wisdom, and the weakness of God is stronger than man's strength."¹⁵ Quite literally, if 'push comes to shove' regarding the rules of logic, Scripture always "wins" for the believing scientist.

Again, from Ellen White, "Nature and the Bible were Jesus' textbooks . . . He gathered stores of scientific knowledge from nature. He studied the life of plants and animals, and the life of man . . . new ideas of ways and means flashed into His mind as He studied plant life and animal life . . . Thus to Jesus the significance of the Word and the works of God was unfolded, as He was trying to understand the reason of things . . . From the first dawning of intelligence He was constantly growing in spiritual grace and knowledge of truth. Every child may gain knowledge as Jesus did."¹⁶ And, "The Garden of Eden was the schoolroom, nature was the lesson book, the Creator Himself was the instructor."¹⁷ These remarkable statements suggest a balance between careful investigation of Nature and Scripture in the search for truth--even in the life of Jesus

Christ! They also affirm the ultimate compatibility between Bible truth and truth about Nature due to their sharing an Author.¹⁸

So far, we might suggest a tentative, practical conclusion: Truth about God from nature and revelation form a seamless continuum; science at its best may thus be redemptive.¹⁹

¹Silver, B. L. (1998). *The ascent of science*. New York, NY: Oxford University Press.

²Hebrews 11:1, NIV

³John 20:29, NIV

⁴see Isaiah 1:18

⁵cf. James, W. (1896). The will to believe. *The New World*, 5, 327-347.

⁶In his intriguing book, *The mind and the machine: What it means to be human and why it matters*, Matthew Dickerson discusses this task for a different, although perhaps ultimately related, purpose.

⁷Necessary and sufficient conditions represent the application of parsimony, or Occam's razor, an important if not universally embraced assumption among scientists. Essentially, the principle of parsimony holds that the best theory among alternatives is the simplest one that still predicts or explains all the available data. In this case, turn over as many cards as necessary to verify the rule, but no more. It should be obvious why for many practicing scientists, evoking God as an explanation for anything runs afoul of this principle, because no more complex concept than God can be conceived. Thus, it would essentially always be possible to provide a simpler explanation (than a Creator-God) that still accounts for the phenomena under consideration; more on this in a later chapter.

⁸Obviously, this example simplifies real science, because it leaves out issues such as reliability, validity and sufficiency of measures (e.g., how should we define and measure "aggression?"), statistical conclusion validity (e.g., do the data violate the mathematical assumptions of the statistical tests?), experimental confounding (e.g., does the research design allow more than one conclusion to be drawn from the results? To state this more technically, has *ceteris paribus* been maintained? i.e., were all other things kept equal besides the sex of the children?) and other pertinent details. However, this theory/prediction/test/interpret-the-implications process forms the conceptual core of the scientific method as understood and practiced by most contemporary scientists.

⁹For an ambitious (but in my view, unsuccessful) attempt to account for the extraordinary coincidences necessary in a merely materialistic universe to account for life, cf. Hawking, S. & Mlodinow, L. (2010). *The Grand Design: New answers to the ultimate questions of life*. London: Bantam Books. Hawking has long sought for a natural explanation for the numerous discoveries about the universe he himself has made, a so-called "Theory of Everything" or TOE. However, the discovery of such a unifying equation could logically still leave the question open as to its origin, and so on . . .

¹⁰Behe, M.J. (1996). *Darwin's black box: The biochemical challenge to evolution*. New York: Free Press; Davies, P. (2007). *The Goldilocks enigma: Why is the universe just right for life?* London: Penguin; Dembski, W. (2002). *No free lunch: Why specified complexity cannot be purchased without intelligence*. Lanham, MD: Rowman & Littlefield Publishers; Gonzalez, G. & Richards, J.W. (2004). *The privileged planet: How our place in the cosmos is designed for discovery*. Washington, DC: Regener Publishing; Heeren, F. (2000). *Show me God: What the message from space is telling us about God, revised ed.* Wheeling, IL: Day Star Publications; Ross, H. (2008). *Why the universe is the way it is*. Grand Rapids, MI: Baker.

¹¹Because scientific theories logically imply an infinite number of specific conditions or consequences, all potentially measurable (i.e., empirical, or publicly verifiable), to prove such theories true would require an infinite number of empirical tests - a logical (and human) impossibility. Scientists thus speak of increasing confidence in a particular theory - following either the discovery of supportive evidence or unsuccessful attempts to find disconfirmatory evidence - rather than proof or certainty.

¹²Child Guidance (CG) p. 294

¹³However, rather than establishing the superior objectivity of agnostic scientists, this lack of any ultimate source or conceptual foundation for nature instead leads to a complete inability to relate science to reality;

cf. Barrow, J.D. (1998). *Impossibility: The limits of science and the science of limits*. Oxford: Oxford University Press, which suggests similar inadequacies for logic to explain or account for ultimate reality, although Barrow certainly did not intend to contribute to a parochial critique of science. More on the limits of logic and reason later.

¹⁴Although creation scientists accept certain conclusions about God as axiomatic, agnostic scientists accept the logical opposite in precisely the same way (cf. <http://darwinianfundamentalism.blogspot.com/2005/07/darwinian-fundamentalist-manifesto.html>). Thus, all scientists practice science within the context of *a priori* conclusions. Theoretically neutral science does not exist; only the methods of science can claim to be agnostic.

¹⁵1 Corinthians 1:19-25, NIV

¹⁶op cit, CG pp. 50, 51

¹⁷ibid, p. 294

¹⁸We will address the postmodern critique of objective truth (and thus the scientific method) in a later chapter.

¹⁹cf. Poythress, V. S. (2006). *Redeeming science: A God-centered approach*. Wheaton, IL: Crossway Books.

Proof and Knowing

Not mine to look

Where Cherubim

and Seraphs may not see,

But nothing can be good in Him

which evil is in me.

- John Greenleaf Whittier, The Eternal Goodness

We have explored the importance to science of deductive logic and examined the ultimate compatibility between truth from science and Scripture. But aren't the rules of logic and the methods of science incompatible with faith, by definition? Faith defines itself as irrational by claiming to be prior to or independent of evidence, doesn't it? Can we find examples of deductive logic and science in the Bible? If so, do they affirm or condemn faith? This chapter outlines what may be surprising answers to these questions and ends by suggesting a methodological truce between students of Scripture and skeptical scientists.

First, consider the devil's temptation of Christ, recorded in the fourth chapter of the gospel of Matthew, in light of the logic principles explained earlier. "If you are the Son of God, command these stones to become bread."¹ Amazing! Notice the devil's use of deductive logic as employed by science. His approach includes the familiar, 'If P, then Q' structure. Essentially, the devil requested empirical evidence that Jesus was who He claimed to be. And if Jesus could indeed turn stones into bread, His success would demonstrate His Messiah-ship, by *modus ponens*. If P, you are the Son of God, then Q, you can create; given P, then Q. The second part of this logic phrase is implied; if Jesus turned stones into bread, this would be evidence that He was the Creator-God and thus the divine Messiah long sought by the Jews.

Note that this challenges included *modus tollens* as well. Had Jesus attempted and failed to turn those stones into bread, His claim to be the Messiah would have been refuted, by *modus tollens*. If P, then Q; given not-Q, therefore not-P. If you are the Son of God, then you should be able to create. If you can't create, that would constitute disconfirmatory evidence - you are NOT who you have claimed to be (falsification of the theory that Christ was the Messiah).

The devil's second temptation follows the same deductive logic structure: "If you are the Son of God, throw yourself down. For it is written, 'He will command his angels concerning you' and 'with their hands they will lift you up, so that you will not strike your foot against a stone.'"² Again, if P, then Q! Just as with the first temptation, the devil merely sought publicly verifiable evidence that Jesus was the Christ!³ Applying *modus ponens*: Given that Jesus was the Son of God, then it should follow that God would send angels to protect Him; given P, then Q. Applying *modus tollens*: If angels were NOT sent to protect Jesus, this would provide disconfirmatory evidence about His claims to be Christ; given not-Q, then not-P – falsification!

At least on the surface, it would seem that the devil was merely being a good scientist. If that were true, consider these possible implications: First, perhaps science as a method is flawed, and Christians should disavow its use for investigating nature or anything else. Second, science as a method may be fine, yet the devil employed it inappropriately. Before turning to a general discussion of these issues, let's examine another familiar Bible story, found in Daniel, chapter 1.⁴ Recall that Nebuchadnezzar, king of Babylon, had just conquered the Israelite nation of Judah and carried off captives and plunder from Jerusalem, including Daniel and his three friends. However, Daniel and his friends belonged to the royal family, so King Nebuchadnezzar wanted to employ them and thus appropriate their knowledge and culture for the benefit of his kingdom in addition to usurping their influence to subordinate the rest of his captives. For this purpose Daniel and his friends needed the advantages of Babylonian literature and language - along with the king's food and drink, no doubt a diet that included unclean items for Jews.⁵

When Daniel and his three friends objected to this decreed lifestyle arrangement, Ashpenaz, overseer of King Nebuchadnezzar's court officials, assured them that any lack of cooperation could cost him his life – not to mention theirs. In response, Daniel proposed a test: After 10 days with only vegetables to eat and water to drink, he and his friends would be compared to those captives enjoying the king's diet. Based on their appearance (apparently, both their skin/complexion and the rest of their bodies were somehow observed or measured), Ashpenaz would then be free to draw his own conclusions as to whether they were malnourished. Daniel's proposal remains a respected, often-used quasi-experimental research design among contemporary health scientists for conducting field studies, technically termed a *nonequivalent control-group design with pretest and posttest*.⁶ The 'control group' who ate the king's diet, along with Daniel and his friends, the 'experimental group,' were alike empirically measured (their

“appearance”) both before and after the 10-day test. And just as with the results from similar experiments today, Daniel and his friends actually enjoyed *better* health and nutrition (again, empirically determined) than the participants in the ‘control group!’

Along with God’s invitation, already mentioned, to come and “reason together,”⁷ this story of Daniel’s applying the methods of science would seem to suggest that, in general, the Bible does not condemn seeking empirical evidence to decide between competing hypotheses. Indeed, Daniel’s test could be construed as an inquiry concerning God’s revealed will - in this case, the dietary restrictions given to the Israelites through Moses.⁸ Thus, we cannot simply condemn any questioning of even God’s Word - much less the investigation of the many unknowns in nature. But wait - was Daniel actually questioning God? Was he skeptical about what God had already revealed? Or was he instead--for a belief he already accepted--seeking confirmation for the benefit of someone else?

Not surprisingly, scientists skeptical of the Bible or any *a priori* assumptions concerning the supernatural have criticized creation science for conflating skeptical inquiry with the confirmation of beliefs in the process and methods of science. Precisely here, they argue, “faith science” departs from “true science” because it begins with beliefs that may taint its search for data and inevitably its interpretation of data. Faith requires belief prior to investigation; science requires suspension of belief prior to data collection. As the search for real cause-effect relationships, science assumes a lawful, predictable world and cosmos. To allow God, or His corollary, miracles, into our models of reality would interfere with this predictability. Anything beyond nature and materialism cannot be observed, measured, controlled or repeated. Thus, faith effectively and practically brings investigation to an end; it begins with conclusions that must be open to question for science to operate.

However, truly atheoretical investigation may be impossible.⁹ Although science can ideally be described as a blind search for truth, practicing scientists unavoidably bring to their study one or more presuppositions, and the mere cumulative acquisition of data may be inadequate to correct such potentially erroneous convictions. Any theoretical framework, whether resting on belief or otherwise, influences the pragmatic choice of hypotheses, the methods used for data collection and the organization and interpretation of results. Furthermore, naturalistic science does not avoid the study of unrepeatable events, that is, events that must have occurred but cannot be observed even in principle (e.g, the “big bang” and other so-called “singularities;” the origin of matter; the origin of life from common ancestry; the appearance of self-replicating organisms). A number of such inferences must be made for modern science to “get off the ground,” and it could be argued that faith and skepticism simply start their investigation from different vantage points.

In this regard, I believe that the principle of parsimony (mentioned in Endnote 6, chapter 2) favors natural over supernatural explanations in science, so the burden of proof rests

with those arguing for the necessity of the supernatural in explanations of natural phenomena. Briefly, for any purported divine influence on natural events, a distinction can be made between the “primary” and “secondary” cause(s). For example, Exodus 15:8 and Psalm 106:9 suggest that God miraculously divided the Red Sea for the Israelites to escape the Egyptian army, although Exodus 14:21 suggests God used a “strong east wind” that blew all night. Even those who believe in miracles can accept that God divided the waters using a strong, east wind, while those who prefer a natural explanation would simply ascribe this event to the wind. Leaving aside for the moment more detailed questions such as whether any naturally occurring weather patterns at that time of year and in that part of the world could have been sufficient to divide the Red Sea to allow passage on “dry land,” even the Biblical story allows a strong, east wind to serve as at least the secondary cause of this unusual phenomenon.

Assuming this “primary” and “secondary” causal structure for any miraculous occurrence in the Bible invites the simplifying conclusion that secondary causes are sufficient in and of themselves to explain the events described¹⁰. In this way, the principle of parsimony asks whether God is ever strictly necessary to account for miracles, leaving Biblical descriptions of God as the “primary” cause for such events serving primarily moral or perhaps metaphorical purposes. This means that regardless of their beliefs, practicing scientists always seek a natural explanation for natural phenomena. The urgent question is whether any natural phenomena exist for which a natural explanation is inadequate.¹¹ Logically, what scientists observe and evaluate must have either a natural or supernatural “primary” or ultimate cause that cannot be observed, so issues of faith are absolutely necessary in any construction of a seamless cause-and-effect continuum from the past to the present. But in their contemporary investigations, the approach and methods of “faith-based” and “skeptical” scientists do not differ and would be indistinguishable to any casual observer.

From the perspective of faith, how should we interpret the devil’s use of science in tempting Jesus? Does this mean the Bible condemns science and its quest for publicly verified knowledge? In this regard, searching for confirmation of faith may be distinct from a mere skeptical demand for evidence. The latter version of “science” may be what Paul had in mind when he wrote, “O Timothy, keep that which is committed to thy trust, avoiding profane and vain babblings, and opposition of science falsely so called: Which some professing have erred concerning the faith.”¹² Indeed, other passages of Scripture seem to represent nature as providing evidence for God, which would seem to encourage attempts to confirm faith: “The heavens declare the glory of God; the skies proclaim the work of his hands. Day after day they pour forth speech; night after night they display knowledge. There is no speech or language where their voice is not heard. Their voice goes out into all the earth, their words to the ends of the world.”¹³ Even more pointedly, “For since the creation of the world God’s invisible qualities--his eternal power and divine nature--have been clearly seen, being understood from what has been made, so that men are without excuse. For although they knew God, they neither glorified him as God nor gave thanks to him, but their thinking became futile and their

foolish hearts were darkened. Although they claimed to be wise, they became fools and exchanged the glory of the immortal God for images made to look like mortal man and birds and animals and reptiles.”¹⁴

In fact, according to the Bible, all knowledge begins with God: “The fear of the Lord is the beginning of wisdom, and knowledge of the Holy One is understanding,”¹⁵ and those who would understand reality must begin with faith which will be rewarded with evidence: “. . . for the one who approaches God must believe that he exists and that he rewards those who seek him.”¹⁶ God through His creative power provides the predictability on which science depends¹⁷, and so the practice of science in a sense acknowledges or rests on this lawfulness. Indeed, the Bible declares God as the source of the regularities that science can now discover, but this genesis was unique and cannot now be publicly verified; in fact, empirical observation is inadequate as a method for discovering truth: “Now faith is being sure of what we hope for and certain of what we do not see. This is what the ancients were commended for. By faith we understand that the universe was formed at God’s command, so that what is seen was not made out of what was visible.”¹⁸ However, the Bible depicts this reality in terms of God’s tender regard for His creation¹⁹, reflecting His desire for a relationship with His creatures; we thus worship Him as Creator: “Fear God and give him glory, because the hour of his judgment has come. Worship Him who made the heavens, the earth, the sea and the springs of water.”²⁰

Other portions of Scripture elevate the distinction between the affirmation of faith and skeptical inquiry to the level of an urgent warning: “First of all, you must understand that in the last days scoffers will come, scoffing and following their own evil desires. They will say, ‘Where is the ‘coming’ he promised? Ever since our fathers died, everything goes on as it has since the beginning of creation.’ But they deliberately forget that long ago by God’s word the heavens existed and the earth was formed out of water and with water. By water also the world of that time was deluged and destroyed. By the same word the present heavens and earth are reserved for fire, being kept for the day of judgment and destruction of ungodly men.”²¹

From these passages, we can establish useful Biblical assumptions to inform the faith-based practice of science. First, the laws of nature came from God, yet they invite discovery²². Second, the faithfulness of God makes science possible. Third, investigation should humbly acknowledge not only God’s origination of nature but also His continual, sustaining involvement²³. Fourth, science merely discovers what God has created, and thus it begins with the facts inspired by God in Scripture. Many if not most early scientists, including Galilei Galileo, Johannes Kepler and Sir Isaac Newton, believed in a Creator God and the veracity of Scripture as providing a foundation for scientific exploration. Kepler famously described his discovery that the orbits of the planets swept out ellipses rather than circles (around the sun) as “thinking God’s thoughts after Him.”²⁴ For these Enlightenment thinkers, science was an act of worship. We might argue that its best purpose remains an affirmation of the “knowledge of God.”

Based on the examples of Daniel's dietary research and the devil's use of deductive logic in tempting Christ, it would seem that the Bible accepts science as a method for affirming faith in God's revelation of His creation, but skeptical inquiry regarding what God has declared, and asserting merely natural causes for any and all natural phenomena may represent idolatry and thus be prohibited by the first two commandments of the decalogue.²⁵ Even recent criticisms of God from Samuel Harris²⁶, Richard Dawkins²⁷, the late Christopher Hitchens²⁸, Daniel Dennett²⁹ and others--basically naive rehashings of classic theodicy issues such as the problem of evil, the nature and reality of pain & suffering--must assume God in order to define good and bad, right and wrong. Without God, no consistent conceptual framework remains to ultimately define evil³⁰. Thus, the analytical assumptions on which science rests form a conceptual continuum with morality. To claim to assess accuracy, to decide between competing hypotheses based on the weight of the evidence (as science certainly does), requires the existence of "right" and "wrong." To analyze is to judge, and to judge is not only to engage in reasoning, but in morality.

¹Matthew 4:3, NET

²Matthew 4:6, NET

³Tellingly, this temptation also included an embedded test of the dependability of the Word of God, the Bible. The devil not only questioned Jesus' claim to be the Messiah and thus enjoy God's special favor; he also questioned the reliability of God's promise in Scripture to protect His children.

⁴See Daniel 1.

⁵cf. Leviticus 11.

⁶Cook, T.D. & Campbell, D.T. (1979). *Quasi-experimentation: Design & analysis issues for field settings*. Boston: Houghton-Mifflin.

⁷cf. Isaiah 1:18

⁸It has been observed that Daniel's request actually reflects the original diet given to Adam and Eve in Eden (cf. Genesis 1:29) rather than the later dietary laws outlined by Moses in Leviticus 11.

⁹Brand, L. & Jarnes, D.C. (2005). *Beginnings: Are Science and Scripture partners in the search for origins?* Nampa, Idaho: Pacific Press.

¹⁰e.g., Ryan, W. & Pitman, W. (1998). *Noah's flood: The new scientific discoveries about the event that changed history*. New York: Touchstone (A Division of Simon & Schuster).

¹¹Ball, B.W. (Ed.). (2012). *In the beginning: Science and Scripture confirm creation*. Nampa, Idaho: Pacific Press.

¹²1 Timothy 6:20, 21, KJV

¹³Psalms 19:1-4, NIV

¹⁴Romans 1:20-23, NIV; these verses seem to imply that natural explanations, even for natural phenomena, are at least inadequate and perhaps even problematic.

¹⁵Proverbs 9:10, NIV; cf. "My purpose is that they may be encouraged in heart and united in love, so that they may have the full riches of complete understanding, in order that they may know the mystery of God, namely, Christ, in whom are hidden all the treasures of wisdom and knowledge. I tell you this so that no one may deceive you by fine-sounding arguments." Colossians 2:2-4, NIV

¹⁶Hebrews 11:6, NET

¹⁷"As long as the earth endures, seedtime and harvest, cold and heat, summer and winter, day and night will never cease." Genesis 8:22, NIV

¹⁸Hebrews 11:1-3, NIV

¹⁹"Because of the Lord's great love we are not consumed, for his compassions never fail. They are new every morning; great is your faithfulness." Lamentations 3:22, 23, NIV

We will have more to say about the relational nature of Biblical reality in a later chapter.

²⁰Revelation 14:6, 7, NIV

²¹II Peter 3:3-6, NIV; here Peter seems to be claiming that the underlying issue in skepticism is not epistemological but moral; more on this later.

²²cf. Proverbs 25:2

²³cf. Psalms 104; Colossians 1:17

²⁴Ball, op cit.

²⁵Exodus 20:2-4

²⁶Harris, S. (2006). *Letter to a Christian nation*. New York: Knopf.

²⁷Dawkins, R. (2006). *The God delusion*. Boston: Houghton-Mifflin Co.

²⁸Hitchens, C. (2007). *God is not great: How religion poisons everything*. New York: Twelve Books.

²⁹Dennett, D.C. (1995). *Darwin's dangerous idea: Evolution and the meanings of life*. New York: Simon & Schuster.

³⁰Zacharias, R. (2008). *The end of reason: A response to the new atheists*. Grand Rapids, MI: Zondervan.