

Religion in the Development of Science

“...and they plotted to arrest Jesus in some sly way and kill him” (Matthew 26:4). The Scribes and Pharisees had both a bright side and a dark side. For hundreds of years, following the example and exhortations of Ezra, they assiduously studied the Scriptures and, with great zeal, applied those texts to their own historical setting. While the known world was being captured by the compelling power of pagan Hellenistic culture, the Scribes and Pharisees faithfully kept the knowledge of God before the people of Judea. Thanks to their piety, Judea was an island devoted to God surrounded by a vast sea of Greek culture. Yet when the moment of crisis came, when the Son of God visited His people to save them, it was those Scribes and Pharisees who rejected Him. They failed to recognize Him and with overweening pride refused to submit to Him. And as a consequence a few decades later, horrific disaster struck the nation. In the same way, today, our modern science has both a bright side and a dark side. Let's discuss this.

I A Short History of Science.

The first few centuries after Christ saw the church expanding despite persecution, all the while examining heresy and determining what correct doctrine is. After Rome fell to pagan hordes, the church continued to expand into new territories, carrying the knowledge of Christ to what we today know as Europe. Although modern historians contemptuously call those centuries the “dark ages,” there really was nothing “dark” about them because, in nearly every region of Europe, Christianity confronted and conquered paganism.¹ The world of barbarians started to become civilized. At the same time, Christendom was becoming organized so that many states became “sacralized” – even as the church was being secularized. Superstition and magic abounded, but so did the Gospel. In this time of transition, turmoil and ferment, science was born.

The ancient nation of Israel received and preserved the revelation of the one God, the Creator, for the world, but they had no particular interest in discovering anything about the world. The polytheistic Greeks had great interest in the physical features of the world, made important observations, and collected what was known in libraries, but they tended to rely on reason (and on their imagination) and so developed no method for doing science. That was for the church to do.

Taking the revelation of a God who had created time and space and who providentially cared for His creation, Christians early on sought to study the world God made. They developed the methodology of systematically organizing and bringing together knowledge of the world and building upon that by further discovery. They understood that God's creation was orderly, that it was controlled by uniformly operating principles that God had built into it, and that study of the world would reveal those secret principles. Except for special acts of God (miracles), everything God created was subject to natural laws, laws God created whereby His creation would continue until He ended it. From the narrative of biblical history, it was evident that time was linear; it had a start and there will be an end; there were no endless cycles as the pagans believed. And from the revelation of a good God who had created a house for his creatures to dwell in and in which an epic salvation plan was to take place, they saw that causes resulted in effects; the world wasn't run by the whims and passions of the gods. And from the Scriptures they understood the great value man had, having been created in God's image and destined for eternal blessing, so that human investigation of the world's secrets was likewise valuable. The pursuit of knowledge would be done to the glory of God. Science put God's great wisdom on display.

Early on, Augustine and Boethius nailed down the relationship of God to His creation. The Venerable Bede (and others) gathered and synthesized what was known of the natural world for use by succeeding generations. But let's consider one particular Christian during this period, John Philoponus of 6th century Alexandria. This genius could be called the world's first physicist: he thought deeply about motion, about the nature of matter, of space, and of light. He linked mathematics to the use of logic. Although he didn't actually carry out experiments, he planned them in his mind – even with controls. He repudiated pantheism, holding instead to the transcendent God of the Bible; he believed the Bible and based his work on its truths. He was brilliant, to be sure, and his insights anticipated the results of many others who would come later, but his working premise was more important: God had created matter and time, so understanding our world logically follows.

During what is today termed the Medieval Period, conflict between church and state for power heightened. Christendom flourished even as the church became institutionalized. And during this era, science blossomed. Scientists of this period include Hugh of St. Victor (1096-1141), Robert Grossetest (1168-1253), Roger Bacon (1220-1292), von Frieberg (1250-1310), Bradwardine (1290-1349), Oresme (1320-1382) and Nicholas of Cusa (1401-1464), all God-fearing Christians.² They not only did experiments, they developed the methodology by which experimentation is done. Space doesn't permit a consideration of the contributions and insights of these

¹ Rodney Stark, in his latest book, *“How the West Won: The Neglected Story of the Triumph of Modernity,”* ISI Books, Wilmington, 2014, argues that the “Dark Ages” never happened, it's a myth. He writes, “If there is a single factor responsible for the rise of the West, it is freedom...So much of that freedom emerged during the so-called Dark Ages” (p.139). Stark exposes as myth much of what is commonly taught as the story of Western civilization. He shows how Western civilization is founded on Christianity, something that historians generally ignore.

² Skeptics might argue that these men were merely giving a necessary nod to the church as that was the dominant institution at the time and without that acknowledgment they might not have been able to do their work. If that possibility be granted, to the extent that it was so, it is equally likely that scientists today merely give a necessary nod to evolution so that they can continue receiving funding and the privilege of publishing their work; if they didn't confess evolutionary beliefs, they'd suffer severe censure.

extraordinary men. Their biographies are readily available from many sources. Many were leaders of the church. They knew, discussed and taught Christian theology. Nicholas of Cusa, for example, wrote, “Every lover dwells in love, and all that love the truth dwell in Christ. As every lover loves by love, so all that love the truth love it in Christ. Hence none knows the truth unless the spirit of Christ be in him...in his spirit only are we capable of adoring God,” and “God be praised that he has by his Son redeemed us from the darkness of such ignorance, and has taught us that all is false and a lie, howsoever produced, that comes to us from any other mediator than Christ who is the truth, and from any other faith but that of Jesus. There is but one Lord Jesus, the master of all things, who fills us with every blessing and who alone makes ample satisfaction for all our deficiencies.”

During the period that the Reformation ushered in, often termed by secularists the Enlightenment, descriptive science advanced. Technology was born and progressed rapidly during this era. Inventions such as the telescope and the microscope opened new worlds to discover. Many of prodigious intellect who despised the church flourished during this era as well, Spinoza and Voltaire, for example, to name but two. This was a time of confusion, theistic and anti-theistic scientists, believers and blasphemers, Catholics and Protestants doing science together. There are too many names to list here all who belong in the category of fervently pious men (and not a few compromisers) who did pioneering work in the area of science during this period. For our purposes, let’s notice just these few: Blaise Pascal, Robert Boyle, Carolus Linnaeus, Leonhard Euler, and John Dalton.³

Pascal (1623-1662) was a mathematical genius; he also studied atmospheric pressure, and he invented an adding machine. His devotion to Christ is fully evident in his *Pensées*. Pascal insightfully wrote, “The heart has its reasons which reason does not know at all,” which explains how we build our world view upon certain un-provable presuppositions. Robert Boyle (1627-1691), known today for his law stating the relationship between pressure and volume of gases, converted to Christianity while studying in Switzerland. The genuineness of his faith was never doubted by those who knew him. To better understand the Bible, he learned its languages. He wrote many short articles using science to draw lessons from the Bible, and they became very popular in England. Every day, before beginning his work, he took time to pray and to study his Bible. In his work, he made many inventions (including a prototype refrigerator), and he carried out extensive experimental chemical research. Dying, he exhorted the Royal Society to “Use knowledge to bring good to mankind.” A more concise and precise role for science couldn’t be penned! Linnaeus (1707-1778) is famous for his binomial nomenclature used throughout the world today to identify every living organism with a term for its genus and a species epithet (man is *Homo sapiens*). His specialty was botany, but his faith was intertwined with his work. Without hesitation or embarrassment, he would refer to God’s wisdom and His handiwork while scientifically describing his plants. Euler (1707-1783) had no ordinary intellect, nor ordinary faith. No one can read a biography of Euler without being smitten with awe. Among the mathematical geniuses of history, he was gifted far above the others. And all his life, Euler devoutly worshiped and served the Lord Jesus. He preached, he prayed, he worshiped, and he defended Christianity against such staunch critics as Frederick the Great and Voltaire, who persistently attacked his faith. Finally, Dalton (1766-1844) is known in science for two important discoveries, his law of partial pressures of gases, and the theory of atoms combining to form molecules. A Quaker, he lived a quiet life of humble piety (and, sadly, poverty).

In the modern era, the 19th and 20th centuries, technological advances allowed scientific endeavor to bloom as never before. But science increasingly was being done by secularists, undoubtedly reflecting the prevalence of secularism in Western society. Nevertheless, Christians had no small role in its development. We encounter such men of brilliance and prodigious accomplishment as Michael Faraday, John F.W. Herschel, Matthew Maury, James Joule, Gregor Mendel, Lord Kelvin, James Clerk Maxwell, and George Washington Carver. The list is long. Because of their temporal proximity, the contributions these men made are familiar to many of us, and we needn’t belabor the discussion. Let’s just observe that these all were men of faith; they believed in a Creator God who spoke to us by His written word, and they lived their faith so that others could see it. Faraday today would be labeled a fundamentalist. Herschel had a “born again” experience, a conversion to Christianity during his adult years. Maury let the Scriptures inform his work. Reflecting the presuppositions of the earliest Christian men of science, Joule wrote, “...an acquaintance with natural laws means no less than an acquaintanceship with the mind of God therein expressed.” Mendel had taken vows as a monk. And Lord Kelvin, when lecturing, would recite Scriptures he had memorized. Representing Christian men of science today would be Ray Damadian, inventor of the MRI. He came to Christ at a Billy Graham crusade and has supported creationism since.⁴

From this brief survey of the history of science, two lessons stand out, both very significant. First, the men who were the scientists early on, doing the pioneering work, were devout Christians. And all throughout science’s history to the present day, Christian men did outstanding science. There’s nothing about being a Christian that a priori excludes the person from being a scientist. We all have religious beliefs, they’re inescapable. Which religion we hold to doesn’t necessarily mean the science that we do is of greater or lesser quality. Scientists today who sneer at and ridicule creationist scientists are simply being bigots. They dislike the results because of their religious implications, so they stoop to ad hominem arguments in order to squelch the results. Second, throughout its history, the scientists of a non-theistic bent, the ones who were secular, adopted without question and without dispute the Christian assumptions

³ See Dan Graves, *Scientists of Faith*, Kregel, Grand Rapids, 1996, for discussion of many other Christian scientists during these historical periods. The book’s bibliography is a treasure chest for further inquiry.

⁴ See Ray Damadian’s recent book, co-authored by L. Leech, “Gifted Mind: The Dr. Raymond Damadian Story, Inventor of the MRI,” Master Books, Green Forest, AR, 2015.

on which those theistic scientists of an earlier period had founded scientific endeavor. Modern science, although dominated by secularists, is rooted in Christianity. Scientists today have to acknowledge that the presuppositions they use on a daily basis to do their work, though they are unconscious of them, derive from biblical theism, and that should cause them in honesty to temper the aggressively anti-theistic stance many of them take.

II The Bright Side of Science.

Who is there alive today not grateful for the benefits that accrue to us from science? Is there anyone on Earth who hasn't in some way been blessed by what scientists have achieved? Not only scientists, but even more important, what engineers have made, for it's mainly the products of engineering genius that have so vastly improved life.

Society runs on electricity. The discovery of electricity perhaps more than anything else has made modern civilization possible. Industry, communications, transportation, all these depend on electricity. Although other means are possible, it's electricity that efficiently and economically pumps water to our homes and heats and cools our homes. It runs printing presses, makes manufacturing possible, enables communication over a distance, and keeps food from rapidly spoiling. What would life be like without electricity? The concern of an EMP wiping out the electricity grid is genuine: our nation would collapse, and consequent mortality would be massive.

Advances in the agricultural sciences (for example, the "green revolution") and animal husbandry have made it possible for fewer farmers than ever to feed the world's population. More people today eat healthy and as a consequence are able to learn and work more effectively than ever before in human history. Concerns about the world's population exceeding Earth's "carrying capacity" have been refuted. If global warming does occur, it should even further increase Earth's produce. Malnutrition and hunger nowadays are not due to food supply as much as corrupted food distribution.

Epidemiologists and scientists working in the field of public health have made it possible for entire populations, entire communities to have safe water, safe foods, and vaccinations for everyone so that communicable diseases are now limited in scope. Safe sewage disposal has made urbanization possible, with its attendant benefits. The plagues of previous eras that wiped out entire populations are history. Parasitic diseases are no longer the dread they were in humanity's past.

Advances in the health sciences have been astonishing, enabling longer, more productive, and more satisfying lives. Roentgen's discovery of X-rays, then the development of CT scanning and MRI scanning, and advanced laboratory testing have turned diagnosis of disease into an exact science. The discovery of anesthesia has made surgery not only tolerable, but it's now safer and more precise than ever. Because dental care, setting fractures, and wound repair can be carried out painlessly, the scourge of toothache and of disfigurement due to trauma is something of the past. Pharmacologic research has made possible therapies that no one even dreamed of just a century ago, antimicrobial therapy, for but one example.

The list of achievements is long. Weather forecasting. Construction methods. Flight, making it possible for food grown on one continent to feed those on another, and for aid from one nation to reach another almost immediately when disaster hits. Seat belts, smoke alarms and fire sprinklers to make life safer. And amazing new materials.

How are we to account for all these accomplishments that made it possible for society to flourish? Did they just spontaneously arise due to human ingenuity, or is there another explanation? Why did science and technology seem to blossom, not in non-Western lands, but in Europe (and subsequently in America, a European colony) and especially following the Reformation? All these salutary developments could be understood as blessings coming to us from a good God who is pleased with our honoring Him. Other civilizations on Earth have not known the Gospel, and they have not experienced the development of science and technology as the West did. The temporal and spatial correspondence is compelling: Science and technology, and the benefits that accrue therefrom, as well as the prosperity and the political freedoms that the West enjoys, may be understood as God's gifts to those who honor Him.

III Anti-theism and Science: The Religious Underpinnings of Science

There's a dark side to science that demands our attention. While the Reformation was sweeping across Europe, certain men with keen intellects, products of the Enlightenment, were proposing something altogether different, radically different: there was no God in heaven. Or, if there were, He had long ago retreated from any interest in His creation. Deism became popular among many intellectuals. This was the view that a transcendent God had created everything at the outset, but had then abandoned His creation to the natural laws that He'd put in place so that the universe ran by its own natural processes. And pantheism surfaced in the West. Pantheism is the view that nature is God, and God is nature; God is totally immanent; there is no Creator God in heaven and there was no creation. Baruch Spinoza (1632-1677) is held to be the most important early proponent of pantheism in Europe.⁵ Some Enlightenment thinkers simply denied the existence of a God at all, holding that the natural world came into existence on its own, and that there was no reality other than that which man can experience with his senses. In France, Benoit de Maillet (1656-1738), for

⁵ To Spinoza, God was the unity of all things in the universe. It was therefore logical that naturalism is the outworking of pantheism. Everything described in the Bible, for example creation and miracles, in his mind, were a result *only* of natural laws.

example, claimed that the world was infinitely old, having come into existence by chance.⁶ These anti-theistic philosophical views found their way into scientists' thoughts in the form of naturalism. Naturalism is the view that nature, the physical world, its substance and its operating laws, is all there is; there is no supernatural. So the Bible was just another book written by human authors.

At the same time, the belief was slowly spreading that the Scriptures did not correctly explain Earth's geologic features. For centuries, the global flood of Genesis was assumed to explain geologic formations (catastrophism), but during this period certain men denied that was the case. It didn't seem possible to them that such thickness of the land mass could have resulted from any single flood. They asserted instead that Earth was actually millions of years old, and that the land forms should be explained by slow, uniform processes, such as volcanism, delta deposition, erosion, and glaciation, acting over vast periods of time.⁷ Not the Genesis Flood.⁸ The Scriptures, in their view, were not to be taken literally. If that was a problem for the church, or for theologians, too bad. In time, these ideas spread. And many churchmen, faced with these new beliefs held by men of science, thought it wise to compromise.

Another development in science during this post-Reformation period had to do with theodicy. Biologists observing predation in nature found it contrary to their view of a good God. Nature was brutally cruel. Had God created predators? And waste! Why did God create so much waste of pollen and seeds? In their minds, God wouldn't have done it that way. They resolved the tension by concluding that God didn't create! There was no creation. Naturalism, in their minds, was a better explanation. Darwin simply provided the naturalistic explanation they needed to account for the variety of living forms on earth. He gave a scientific explanation for origins, one that didn't require a Creation. Biophysicist Cornelius Hunter has extensively documented how these religious views gave shape to the science we have today.⁹ Modern science, in other words, rests on a religious foundation, but it's an anti-theistic religious foundation.

We all have personal religious beliefs. Being "religious" is part of being human. Religion underlies our hopes for the future, it's what motivates us, and it's what guides our decision-making and our behavior. Religion is what enables us to understand ourselves and the world we live in. We're all necessarily religious. That includes atheists and agnostics, those who view themselves as irreligious. And it includes scientists. Our religion supplies us with the presuppositions we need and use on a daily basis to give meaning to life. The Christian's presuppositions are that God exists and He has spoken, and the Bible is His Word to us. What about those who presuppose that there is no God? What's their religion? Spinoza and Darwin supplied it, it's pantheism. Pantheism holds that there is no transcendent God, no personal Being who is Creator, rather, nature itself is deity. And nature is in constant process of creating; so meaning is found in aligning ourselves with the principle behind nature, namely evolutionary progress.¹⁰

Belief in Darwinism thus identifies scientists as pantheists.¹¹ Darwinism can be seen as the outworking—or as a core belief—of pantheism. It's one of the principal affirmations of pantheism. Evolution thus is not the great organizing theory that it's said to be because of scientific proofs. No, it's the reverse; it's the presupposition that directs scientists in their work so that the conclusion that's always reached is that life emerged solely by natural means. The belief that scientists do their work with complete, dispassionate objectivity is a vain conceit. It's a delusion. No one does. Our religious beliefs control us, they are how we interpret our physical world. So, the religious underpinning of modern science's explanation of origins is pantheism. Or to say it differently, modern science explains origins as it does because of its underlying religion, pantheism. This explains a lot.

⁶ Henry M. Morris, "The Long War Against God," Baker Book House, Grand Rapids, 1989, p. 184.

⁷ Two names credited with initiating uniformitarian geology are James Hutton (1726-1797) and Charles Lyell (1797-1875). Geologists today are aware that volcanism, flood deposition, and other processes have been of far greater magnitude in the past than are presently observed, but this is not a return to catastrophism. The modern view is still uniformitarianism, except at a deeper level: continental plate tectonics is the new uniformitarian principle, and the volcanism, flooding, etc, of whatever scale, are merely its outworking.

⁸ Terry Mortensen has researched the historical development of both astronomical and geological deep time. See his article, "Philosophical naturalism and the age of the earth: are they related?" in *The Masters Seminary Journal*, 15(1):71–92, Spring 2004. The article is freely accessible on the internet.

⁹ See Hunter's, "Darwin's God," 2001, "Darwin's Proof," 2003, and "Science's Blind Spot," 2007, all by Brazos Press, Grand Rapids, MI. Hunter writes, "It is important to understand that evolution relies on religious premises, but it is even more important to understand that evolutionists do not acknowledge this reliance on metaphysical ideas. An unspoken, unscientific position underlies evolution, and until this is understood public debate will continue to be more confusing than enlightening...We need to understand these things because, ultimately, evolution is not about the scientific details. Ultimately, evolution is about God" ("Darwin's God," p. 175). Hunter did not identify the evolutionists' religion as pantheism. This essay's authors do that.

¹⁰ We find pantheism's two affirmations self-defeating. For pantheism's deity to bring about progressive, directional complexity, the deity must be volitional. There cannot be a volitional non-being. Only biblical theism has logical coherence: God is a self-existent and eternally existent Being; He created, and that explains why anything exists. And He is separate from His creation, free to interact with it according to His purposes.

¹¹ The term Darwinism is used here loosely. Scientists prefer the term neo-Darwinism, which came as a result of the synthesis of Darwin's ideas with the understanding of genetics that surfaced early in the 20th century.

Pantheism explains why evolutionists hold to their belief despite a mass of counter-evidence and absurdities. They have a *religious conviction* that their view of origins is true. Evolutionists believe that chemicals long ago spontaneously aggregated in such a way that a living cell came into existence. Every attempt to induce such a process in the lab has failed, and there's no evidence such has ever occurred – or even that it *could* occur, yet it is believed to be a certainty. Evolutionists believe that organisms all descended from common ancestors, of this they are absolutely certain, though such descent is nothing more than an inference; it's never been observed, neither in living forms nor in the fossil record. Recent studies in cell biology and genetics reveal organization and complexity such as had never even been imagined, yet highly intelligent men, who ordinarily are capable of careful, logical thought, believe with certainty that such systematic complexity arose by random, accidental processes. Random mutations no longer are held to be the mechanism that drove evolution, but no replacement has been identified. And it's now recognized that natural selection is limited in scope, incapable of accomplishing all that evolution has demanded of it. So evolutionists are left believing in a mechanistic process that has no known mechanism. Complex information systems that have been built into cells are ignored. The overwhelming presence of design in nature is ignored. Polystrate fossils and inverted and warped rock strata (that in themselves give the lie to uniformitarian geology) are ignored. Discordant dates supplied by geochronologists are ignored. The anthropic principle – the observation that all the physical parameters of our world are perfectly tuned for life—is either ignored or explained away with another fantasy (“multiverses”). The list goes on. A careful reading of the evolutionists' literature reveals that the “evidence” for evolution consists merely of computer models, extrapolations, and speculations. Not very compelling! The point is this, evolutionists are committed to their beliefs regarding origins *despite* evidence, because it was never evidence that led them to it in the first place. It was their religious belief.

And this underlying religious commitment evolutionists have is the reason there's so much animosity toward Christianity. Nobel prize-winner in physics, Steven Weinberg, says, “One of the great achievements of science has been, if not to make it impossible for intelligent people to be religious [i.e., Christian], then at least to make it possible for them not to be religious. We should not retreat from this accomplishment.”¹² And on another occasion Weinberg said, “I think the world needs to wake up from its long nightmare of religious belief [i.e., Christianity]; and anything that we scientists can do to weaken the hold of religion should be done, and may in fact be our greatest contribution to civilization.”¹³ Richard Dawkins says, “It is absolutely safe to say that if you meet somebody who claims not to believe in evolution [i.e., his religion, pantheism], that person is ignorant, stupid or insane (or wicked, but I'd rather not consider that).”¹⁴ Why such hostility whenever the teaching of evolution is challenged by school districts? The conflict regarding origins today is not between science and religion. Rather it's a war of religions: it's pantheism versus Christianity.

Modern science, with its fantastic view of origins, has promoted a view of reality that is appalling. How could God be relevant, or His interactions with man, if His creation was 20 billion years ago and life developed slowly over 3 billion years. And if His space is infinitely vast, of what significance to God is this speck of dust called Earth? If we are here by random processes, then we are nothing more than an accidental collocation of atoms, of no intrinsic value. It means that there are no absolutes to guide behavior; anything goes. Who is to say that Stalin or Pol Pot were evil? Who can say *anything* is good or is evil? Any rules for living are merely contrived. It means there's no life after death; death ends it all absolutely, so why live? Why should we have guilt, if there's no accountability for the wrong that we do? What should society look like? What is beauty? What is love? Why kindness? No answer. There's no answer to any of these essential questions. No one can consistently live with such a world view as derives from pantheistic religion.

A conclusion to this discussion should be that modern science, having a bright side that has been a great blessing to humanity, also has a terribly dark side. It seeks to extinguish Christianity from planet Earth or, if not, at least to silence it. It seeks to leave people with no hope of future glory, no dread of future judgment to motivate them to godly behavior, no possibility of salvation from the guilt and power of sin by the life and work of Christ. It seeks to leave humanity doomed to despair in this life and to judgment afterwards.

But the church proclaims that modern science got origins wrong. The Scriptures declare that God created. God suffuses all with meaning, significance and purpose, because God values His creation. And creation bears witness to God's character. He is a good God. Although we lack transcendence and are finite, we are made in His image and so we too bear witness to His character (our will, personhood, and capacity for morality, for example). But it's the Scriptures that fully reveal God, as did the Son when He visited Earth, the record of which also constitutes Scripture. The Bible is truth, and its narrative of a recent creation by an all-wise and good God followed by a global flood is true, because its ultimate source is the living God. And all that follows upon creation, the fall into sin and the offer of redemption by the death of Christ on a cross, is likewise true truth. The early scientists who established science were committed to that. We're committed to that. We hope our readers are too.

¹² These comments were made at a meeting of the AAAS in Washington DC, April 1999.

¹³ This statement was made in November 2006. Weinberg also has said, “Maybe at the very bottom of it...I really don't like God.” These and other Weinberg quotes are on the internet at Wikiquotes.org.

¹⁴ This statement appeared in an article, “Put your money on Evolution” in the *New York Times* Review of Books, p. 35, April 9, 1989. Dawkins' quotes also are on the internet at Wikiquotes.org.