

Book Review: Evolving Certainties: Resolving Conflict at the Intersection of Science and Faith

[Kristine Johnson](#)

by Terry Defoe

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Book review: Gentle, pastoral approach examining the intersection of science and faith

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One thing that really stood out to me about this book was the pastoral heart of the author. Rev. Terry Defoe is a retired pastor who served congregations in Western Canada for almost 40 years. He writes out of pastoral concern for Christians who have questions or wrestle with topics of science and how they fit into their Christian faith and belief. “Coming to terms with science generally, and evolution in particular, has consumed a significant portion of my adult life. I compare this intellectual journey to traveling to a foreign country. This journey has the potential to fundamentally alter one’s worldview. My goal is to inform, not persuade. I am well aware that accepting the risk of being wrong is the price of publishing one’s ideas. I am of the opinion that much more can be accomplished through respectful dialogue than could ever be accomplished through negative attacks, polemics, and criticism.” p33.

The book is written for laypeople, is divided into 3 sections, and has 13 chapters. I read it on my tablet (Note that at the beginning of chapter 11, I made some kind of adjustment on my tablet hoping to see better when I was reading outside but this change enlarged the font and shifted all of the page numbers. Oops!).

I highly recommend it! Let’s take a closer look inside.

Part 1: A Revolution Like No Other

Chapter 1: Introduction

As implied, the introduction provides an overview of the topic to be addressed in the book and this is both the way modern Western Christians understand the Bible and the way they interface their faith with modern science. The author notes that “the

Bible's ancient science is a common-sense knowledge based on limited and often fallible human senses." p25. This concept is very important because what the Ancient Near Eastern authors and audiences commonly understood about their world is not our common understanding now because we have technology like telescopes and microscopes that provide insight into our world that Ancient Near Eastern people did not have.

"In most evangelical Christian circles, evolution is "the 'E' word," a word so controversial many avoid discussing it. Since Charles Darwin (1809–1882) published *On the Origin of Species* in 1859, no scientific theory has been more problematic for evangelicals than the theory of evolution. Discussion often takes place in an emotionally-charged atmosphere. Sometimes it may seem that anti-evolutionists are more concerned with public relations than they are with facts and evidence." p26.

Chapter 2: The Scientific Revolution

The next four chapters look at four significant paradigm shifts in our understanding of physical reality. The first is the scientific revolution where scientific methodology is developed. "Scientific methodology is an organized form of skepticism designed to eliminate confirmation bias". p36. "Psychologist Jonathan Haidt notes that, on our own, we human beings do not do well at avoiding this kind of erroneous thinking. Scientific methodology does us the favor. Scientists are obligated to reject an incorrect theory even when they desperately want it to be true." p38.

Chapter 3: The Cosmological Revolution

This chapter highlights an ancient cosmology common in the Ancient Near East in Biblical times then looks at geocentrism, the view that the earth does not move and the sun and other astronomical bodies orbit the earth. The author shares the theological turmoil caused as evidence accumulated supporting heliocentrism, the view that Earth and the planets orbit the sun. "Biblical cosmology, as would be expected, is not scientific in the modern sense. It is phenomenological, that is, a common-sense description of cosmological realities as they appear to the naive observer without the benefit of science and its technologies. The descriptions of nature found in the scriptures reflect the limited understanding of ancient iron-age Semites. Israel's cosmology appears to have been influenced by its neighbors, including Egypt and Babylon." p47.

"In ancient scriptural cosmology, it was believed that the cosmos was unchanging. Stars were fixed and eternal. The earth was a flat circle of dry land with chaotic

surrounding waters pushed back by God, not a sphere floating in space. The sky ('firmament') was thought to be a metal plate God could walk on. The firmament had windows, which, when opened, allowed the waters above to flow down to the earth below. Astronomical bodies were fixed to this solid firmament, occasionally dislodging and falling to earth. As far as the ancient Israelites were concerned, these common-sense descriptions were not metaphorical." p47. "John Walton of Wheaton College says, 'There is not a single instance in the Old Testament of God giving scientific information that transcended the understanding of the ancient Israelite audience.'" p48.

Chapter 4: The Geological Revolution

This chapter explores the history of the study of geology and explains several ways dating is performed. Radiometric, carbon dating, tree rings, lake varves, and ice cores are listed though there are additional methods too. "The current scientific consensus makes room for both uniformitarianism and catastrophism, pointing out that there were indeed catastrophic events in the earth's geologic past, but these were extreme examples of long-term natural processes." p62.

"Geologist Kenneth Currie adds: 'Flood geology also cannot account for thick deposits of limestone originating in calm waters. It cannot accommodate thick salt beds. In addition, flood geology does not give an explanation of strata formed under desert conditions. Flood geology simply cannot deal with the vast amount of physical evidence amassed by geologists in the past 200 years, except by denying the validity of the evidence.'" p66. "Significantly, it has been found that extreme application of heat, cold, pressure (even explosion), or chemical reaction cause no change in radioactive decay rates. Anti-evolutionists charge that this is a false assumption, but, in reality, radioactive decay rates have not been observed to vary since the rates were directly measurable, at least within limits of accuracy. This is despite experiments that attempt to change decay rates. Young-earth creationists fail to acknowledge that radioactive decay rapid enough to permit a young-earth would produce enough heat to melt the earth." p67.

"Scientific discoveries such as the age of the earth, the theory of evolution, and plate tectonics, are best affirmed when entirely independent sources of data combine to achieve the same result. Consilience is the strongest support a scientific hypothesis can receive." p69.

Chapter 5: The Biological Revolution

The author briefly describes mutations, abiogenesis, natural selection, genetic variation, convergent evolution, speciation, fossils, transitional forms, preservation of soft anatomy, evo-devo, genomes, consilience, punctuated equilibrium, and more independent lines of evidence supporting the scientific theory of evolution starting from Darwin's day and moving to our modern understanding. "It is important to be aware of the fact that evolutionary ideas were in the air during Darwin's lifetime and had been for some time. ... Malthus was an ordained minister of the Church of England. He observed that, under optimal conditions, populations grow rapidly, at an exponential rate, through repeated multiplication. Food supplies, however, grow much more slowly, at an arithmetic rate, through repeated addition. Thus, populations can increase faster than the food required to support them. Darwin noted that this imbalance would inevitably lead to competition between offspring. Some would be better equipped to survive than others." p74.

"The Origin of Species (1859) was, in Darwin's own words, one long argument. In it, Darwin compared what he called natural selection with the artificial selection carried out by animal and plant breeders. In artificial selection, breeders manipulate natural variation within species in order to meet a desired end or goal. Darwin argued that nature's work of evolution is parallel to what human breeders do, writ large, and occurring over vast periods of time." p76. "Darwin understood that the environment is the source of selection, but, as we mentioned, he did not know the actual source of the variation. It is significant that the fuller understanding of genetic variation that has been gained after Darwin's death has greatly strengthened, not weakened, the original theory. Scientists now know that one of the ways evolution works is by modifying pre-existing genes to take on new roles required by changing environments. In addition, the genetic shuffling which takes place through sexual reproduction bestows on certain organisms features that increase their likelihood of survival and reproduction in a particular environment. These advantages are passed on to future generations." p79.

"Evolution therefore is not something that happened some time ago in the historical record, but is observable today in species that reproduce quickly, like bacteria. Contrary to claims made by anti-evolutionists, natural selection is a contingent, not a random or chance process. For Darwin, 'chance' meant 'contingency.' Contingent processes are dependent on certain other factors for their existence. Therefore, the exact path evolution takes cannot be predicted at the outset." p81. "Evolutionary biology is built on a massive drawing together (consilience) of evidence from many disciplines. Support for evolution comes from scientific disciplines as diverse as geology (sequential deposition), paleontology (fossils), cosmology (deep time), biology (comparative anatomy, DNA and genomics, developmental similarities,

comparative biochemistry), and biogeography (convergent evolution). ... In recent years, critical additional information has come from developmental biology and from the study of DNA. So now, even without fossils, scientists would know about common descent through DNA.” p88.

Part 2: Grappling with Darwin’s Dangerous Idea

Part 2 examines several responses to Darwin’s discovery ranging from atheists using it as a weapon against religion, to Christians concluding evolution is God’s method of creating biological diversity, to Christians denying the abundant scientific evidence in geology, biology, and other fields based on their preferred reading of the Bible, and various other approaches too.

Chapter 6: Atheistic Evolution

In this chapter, the author introduces the approach of the New Atheists and their conflation of science with evolution. “Often labeled the new atheists, these individuals have succeeded in convincing many Christians, especially evangelicals, that the theory of evolution comes shrink-wrapped in atheism and, as such, is a real and continuing threat to traditional religious values. The New Atheism is a form of secular fundamentalism, not all that different from the Christian fundamentalism it abhors, and equally dogmatic.” p96. “Social Darwinism, never advocated by Darwin himself, has been described as an ‘... odious misapplication of Darwinian thinking.’ Spencer has been criticized for his ‘... appalling moral views.’ It is a secular example of eisegesis, in this case, inappropriately reading nature’s harsh realities into human behavior. It is also an example of the naturalistic fallacy, confusing scientific description with moral and ethical prescription, transforming the descriptive ‘is’ of evolutionary theory into the prescriptive ‘ought’ of social Darwinism.” p98.

“Research by sociologist Elaine Ecklund has shown that the new atheists are a much smaller group than most people believe. Ecklund’s research shows that the new atheists comprise only about 5 percent of all scientists.” p100.

Chapter 7: Old-Earth Creationism

“This chapter defines, compares and contrasts the different kinds of responses the church has made in response to scientific evidence supporting an old earth.” p106. “The majority of late nineteenth century creationists, unlike those today, accepted a progressive fossil record, an old earth, and figurative language in Genesis. Old-earth creationism is expressed in at least five different forms:

- The Gap Theory
- The Day-Age Theory
- Progressive Creationism
- Theistic Evolution (Evolutionary Creation)
- Intelligent Design.” p108.

It should be noted that the author includes Theistic Evolution/Evolutionary Creationism within Old Earth Creationism (OEC), though elsewhere it is sometimes considered its own category with OEC encompassing only anti-evolution views.

“As early as the 1830’s, geologists Adam Sedgwick and William Buckland pointed out difficulties associated with a worldwide flood. A single global flood, in their opinion, could not have produced the deposits found. They therefore proposed that the biblical flood was a local event.” p110. “The majority of old-earth creationists, like other anti-evolutionists, are scientific concordists, working valiantly to harmonize the Bible with science but, in order to do that, stretching the facts to make things fit.” p115.

Chapter 8: Evolutionary Creation

“For evolutionary creationists, science enables Christians to better understand the mechanisms God actually used to bring about biodiversity on earth.” p118. “Sir Ghillean T. Prance, British botanist and ecologist, says, ‘The wonders of creation are just as great whether God created in a single step or used the gradual mechanism of evolution.’” p119. “It is important to realize that in the early decades of the twentieth century, few creationists, even among the fundamentalists, advocated flood geology (see Chapter 9). This is a not-so-subtle reminder that young-earth creationism is a relatively recent phenomenon and that science and religion coexisted quite comfortably until about a century ago. Early fundamentalism was certainly a great deal kinder and gentler with regard to the theory of evolution than is the current expression of young-earth creationism.” pp120–121.

“The word ‘providence’ is derived from the Latin, providere, ‘to see ahead.’ God’s providential concern, according to the scripture, is for all of his creatures. (Matthew 6:28–30). Christians generally believe that God is providentially active in all natural processes, and that all of creation declares the glory of God. So, for Christians, if something happens ‘naturally,’ God is still in charge.” p124. “The Biologos website says, ‘We believe that the diversity and inter-relation of all life on earth are best explained by the God-ordained process of evolution with common descent. Thus, evolution is not in opposition to God, but a means by which God providentially

achieves his purposes. Therefore, we reject ideologies that claim that evolution is a purposeless process or that evolution replaces God.” p125.

“Christian educators at evangelical institutions of higher learning must be circumspect with regard to sharing their views, however, because, in some denominations, individuals have had their employment terminated for espousing evolutionary views. ... Elaine Howard Ecklund has found that the vast majority of believing scientists, 94 percent, are theistic evolutionists. She has found, in addition, that many scientists struggle to reconcile their scientific work with their faith. They resent being attacked, and profoundly misunderstood by young-earth creationists, and from the other side of the fence, by the new atheists as well. As a result, many religious scientists practice a closeted faith, much like evangelical church workers and educators who advocate evolutionary creation practice a closeted adherence to scientific truths.” p126.

“Evolutionary creation, they [anti-evolutionists] believe, is theologically lethal because it denies the authority of the Holy Scriptures. In conservative Christian circles, when traitors originate from within the group, they are considered worse than external enemies and are described using terms such as apostate, heretic, and heterodox.” p129.

“Evolutionary creation rejects the warfare model, arguing that Biblical teachings about creation and scientific theories of evolution should complement and enrich, not contradict, each other.” p127. “So when believers trace the process of creation from the Big Bang to the origin of life, it certainly appears that life is not an accident, but has been planned by God. Perhaps the best way to conceptualize this idea is to say that God has given creation a range of possibilities to explore and subsequently gives creation the freedom to explore them. ... Evolutionary creationists acknowledge miracles, which are events outside natural laws. Statistically, they are extraordinarily improbable. Non-negotiable doctrines for evolutionary creationism include the virgin birth and Jesus’ resurrection from the dead.” p131. “Unfortunately, as we have already pointed out, in many Christian communities, pro-evolution positions like this are never presented as an acceptable option and, as a result, many believers are unaware of them.” p133.

“Evolutionary creation declares that, because all organisms are related by common descent, human beings are biologically connected to all living things, and what they do profoundly affects all other creatures. Humanity’s place as the crown of God’s creation carries with it a special responsibility to be good stewards of the environment. Each species has a long history and is irreplaceable. Each species is intrinsically valuable. Human-caused extinctions result in the loss of billions of years of irreplaceable divine design work.” p134.

“It is dangerous to give individuals dominion over something they do not properly understand.” p134

Chapter 9: Young-Earth Creationism

“Young-earth creationism, as its name implies, rejects evolution, and an ancient earth. It denies common descent, and is adamant that there has been no human evolution. It accepts microevolution, that is, evolutionary change within a species or small group of organisms, especially over a short period, but rejects macroevolution, change that occurs at or above the species level.” p148. “This rejection [of the evidence in cosmology, geology, and biology] is based, not on scientific evidence, but on the presupposition that their interpretation of the Bible’s creation narratives is beyond reproach.” p140. “It is worth noting that much of the science denial currently evident in the U.S. and elsewhere can be traced back to Price, as well as to Morris and Whitcomb. The young-earth attacks on modern science have been harmful to the church, to its credibility, and to its outreach as well as to the cavalier attitude of many evangelicals regarding stewardship of the earth’s precious life-forms and of the environment itself.” p145.

“Since young-earth creationists believe that the Bible is accurate in matters of science, this, in and of itself, is strong support, in their opinion, for its inspiration by the Holy Spirit and for its inerrancy. If scientific concordism is incorrect, however, young-earth creationists know that they would have to revise many of their most cherished doctrines.” p149.

“Scientific truths, however, are not decided by majority vote, but by rigorously-gathered data and solid evidence.” p150. “Anti-evolutionists claim that evolution is ‘only a theory.’ However, in science, theory has a very different meaning than it does in everyday usage. In everyday use, a theory is no more than an educated guess or a hunch. In science, however, a theory is a well-substantiated, well-supported, well-documented explanation for observations. In science, a theory ties facts together, providing an explanation that fits the observations and that can be used to make predictions. In science, the ultimate goal of research is the explanation provided by a theory. In science, a theory is as close to proven as anything in science can be.” p154.

“Pseudoscience is motivated by an argumentum ad consequentiam: that is, something is true or false because of how much I like or dislike it.” p158. “John Morris, son of young-earth patriarch Henry Morris, has acknowledged that he never met a scientist, convinced by science alone, that creationism is correct.” p159.

Chapter 10: Intelligent Design Creationism

“Intelligent design creationism seeks to demonstrate God’s existence based on the evidence of design in nature. ... Like its young-earth cousin, intelligent design creationism exists at a distance from the mainstream scientific community. The various groups gathered under intelligent design’s big tent share a common goal, which is to discredit evolutionary theory. Intelligent design’s mischaracterization of basic scientific methodology is designed to make science appear inherently atheistic. Like young-earth creationism, intelligent design refuses to acknowledge the self-imposed limits of science.” p167. “The goals of the intelligent design movement were originally communicated in what was called The Wedge Document, an in-house, designed-to-be-confidential, five-year plan with the ambitious goal of overcoming scientific materialism, replacing it with a theistic science. The Wedge Document portrays science as hostile to the founding principles of Western society.” p169.

“[ID proponent] Phillip Johnson stated that, in his opinion, science is at war with creationism and demands nothing less than unconditional surrender. Intelligent design supporters perceive this conflict as a win-lose scenario; as science advances, religion must retreat, and vice versa.” p171. “The most commonly-held view among scientists is that science and religion operate in separate spheres. Also, most scientists believe that their vocation in science has not made them less religious.” p172.

Part 3: An Opportune Time

“Paradoxically, rather than weakening faith and eroding Biblical authority, evolutionary biology provides the evangelical wing of the Christian church with an opportunity to improve the accuracy of its scriptural interpretation. ... Rather than inappropriately reading modern notions back into the scriptures, evangelical Christians are learning to let the scriptures speak for themselves, uncovering the message intended by the original authors.” p191.

Chapter 11: Respectful Conversation

(Note that this is where I adjusted my tablet display and inadvertently shifted all of the page numbers.)

“A paradigm shift is often a transformative experience. It can be an intellectual epiphany leading to a cascade of new insights.” p533. “In the scientific world, challenges to a conventional view are to be expected, but in evangelicalism, challenges to theological norms are generally viewed with suspicion.” p544. “We

need safe places where these often-contentious issues can be discussed; an open and collegial atmosphere where dialogue replaces debate. Without these things, a genuine rapprochement is unlikely. It is ironic that the very people who can provide leadership in this area often feel muzzled and sometimes even shunned by their peers.” p538.

“The Bible, important as it is, is not to become an idol.” p540. “Respectful conversation would go a long way towards resolving conflict at the intersection of faith and science.” p545.

Chapter 12: Hermeneutics

“The anti-evolutionist’s insistence that their interpretation of scripture’s creation accounts is inviolate — is the logjam holding back progress. My contention is that until this is recognized, and appropriate adjustments made, little, if anything will change.” p547. “A ‘literal’ interpretation is one that is faithful to the authors’ original intention, not simply a ‘literal’ reading of the words as they stand on the page, without any concern for context or other literary considerations.” p549. “Theologian N.T. Wright says, ‘... anti-evolutionists have developed long-standing and subtle interpretive strategies for not listening to what the Bible is in fact saying.’” p551.

“Young-earth creationists fear that, should Christians adopt an evolutionary point of view, the integrity and authority of the Bible will be lost.” p553. “A typical creationist all-or-nothing argument says: ‘If evolution is true, then the Bible is wrong and we must give up Christ, salvation, and the entire New Testament.’ For a committed young-earth creationist, there are only two alternatives: first, an entirely supernatural, divine creation or second, atheistic evolution in which God plays no part.” p554. “It is my contention that proposing a modern scientific explanation for everything in the Bible is not actually defending biblical authority, but is defending an inaccurate hermeneutic instead.” p564.

“In addition to fideism and scientific concordism, anti-evolutionists typically subscribe to a point of view called presuppositionalism. Presuppositionalism is a branch of Christian apologetics which claims that the Christian faith is the only basis for rational thought.” p571. “Libby Anne says: Answers in Genesis, a young-earth creationist group that runs the creationist museum in Kentucky and has recently embraced presuppositionalism apologetics wholeheartedly, is actually completely open about the fact that it simply rejects evidence that contradicts their interpretation of the Biblical account of creation. It is not about the evidence. It is about the presupposition. And no matter what you say, you are not going to change their

minds.” p572. “One of the challenges for the intelligent design movement, however, is the question which asks why, if God controls mutations, he does not delete those that cause suffering.” p614.

“Accurate interpretation of Old Testament documents requires, among other things, a thorough knowledge of the conventions of Hebrew literature.” p584. “Walton notes that, both in the Bible and in the ancient world, God rests in the temple. When the creation account says that God rested on the seventh day, the ancient Israelites would have understood that to mean that the cosmos was being presented as a temple. At that time, the temple was understood as a miniature version of the cosmos.” p601.

“The message-incident principle states that inerrant spiritual truths are often communicated in the context of out-of-date statements about nature.” p602. “Ted Davis says, ‘Just as we do not take biblical astronomy literally, with its three-tiered universe, we should not take biblical biology literally, with its fixed species and separate creations a few thousand years ago.’” p605.

“Adam and Eve represent every person who has ever lived, but they also represent the first hominids, or group of hominids, who had the capacity for free choice and self-consciousness. Ted Davis adds, ‘Just as the first hominids made sinful choices, so do we now, and original sin involves the resulting bondage to sin and spiritual darkness that is inherited from our ancestors and generated by our own choices.’” p625.

“Evangelicals tend to take an all-or-nothing view of historicity, arguing that without an historical Adam and the traditional fall into sin, there is no need for the gospel of Christ or for salvation history as a whole.” p628. “Some argue that, regardless of the historicity of Adam, humanity will always need a Savior from sin and death. The final word on these critical issues has not yet been spoken.” p629.

“Anti-evolutionists tend to read modern scientific ideas back into the scriptural creation accounts. ... This hermeneutical error, called eisegesis, forces ancient documents to say what their authors never intended them to say. Anti-evolutionists presuppose that, because their interpretation of scripture is, for all intents and purposes, inerrant, no amount of scientific evidence is sufficient to change their minds.” pp641–642.

“The Bible, as we have been arguing, must be interpreted correctly. And not all interpretations are equally valid. Christians must be free to utilize the best of faith

and the best of science.” p647. Joel Edmund Anderson says “It is the claim that if the universe is not six thousand years old, if there was no historical Adam and Eve, and if there was no worldwide flood four thousand years ago, then that would make God a liar, that would mean there is no such thing as sin, and that would mean Christ died for nothing. Such a message is heresy, and that message has subverted, destabilized, and destroyed the Christian faith of many people, has destroyed careers, and unfortunately, has taken root within a significant portion of Evangelical Christianity.” p654.

“A lack of scientific literacy is a problem not only in the wider society, but also in the church. ... Research indicated that only 6 percent of respondents were able to achieve a perfect score on a 12-question test assessing respondent’s knowledge of basic science. ... According to Miller, 70 percent of Americans cannot read and understand the science section of the New York Times.” p658. “The truth of evolution cannot and should not be decided by those who are not scientifically literate. It is important that Christian leaders possess a basic scientific literacy if they are to evaluate science and scientists.” p660. “The scientific evidence supporting the theory of evolution, especially discoveries in genomics and DNA, is growing stronger as each year goes by.” p664. “Francis Collins, founder of BioLogos says, ‘The God of all truth is not well served by lies, no matter how noble the intentions of those who spread them.’” p667.

“When naïve evangelical students are exposed to genuine scientific evidence for evolution, often for the very first time, they come to the realization that they have not heard the full story from their church leaders or denomination.” p678. Fred Clark observes “Very often, it is because the church lied to them. Specifically, it is often because the church lied to them about the age of the earth. Many young Christians have been reared to believe that this concept of creation is a virtual article of faith that represents the biblical teaching. ... Since they have been misled about creation by the religious authorities of their youth, they lose confidence in the rest of their religious upbringing.” pp678–680. “According to David Kinnaman of the Barna Research Group, one of the reasons why one third of 18 to 30-year-olds leave the church is that they perceive the church to be ‘anti-science.’” p681.

“Biologist Theodosius Dobzhansky once famously said that, ‘... nothing in biology makes sense except in the light of evolution.’ Evolutionary theory has been tested for more than 150 years and its core concepts have stood the test of time. The evidence for evolution is stronger than ever.” p687.

AMERICAN SCIENTIFIC AFFILIATION MEMBER KRISTINE JOHNSON
DISCUSSES EVOLVING CERTAINTIES

After the book's main body is an appendix that contains and discusses several surveys about evolution, science, and religion/faith, their specific questions, and the results. After the appendix is an impressive bibliography. The book contains numerous end notes and the author has clearly researched this topic thoroughly.

I highly recommend this book for pastors and Christians who have questions about science and where modern scientific discoveries fit in their faith and theology. The conversational approach in this book is gentle but firm and not a threat to the Christian faith or those wishing to understand views beyond their own.

Excerpts From
Evolving Certainties
Terry Defoe

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