

Book Reviews



ENGINEERING

TRUTH, LIES, AND O-RINGS: Inside the Space Shuttle Challenger Disaster by Allan J. McDonald and James R. Hansen. Gainesville, FL: University Press of Florida, 2009. 627 pages. Hardcover; \$39.95. ISBN: 9780813033266.

Truth, Lies, and O-Rings is a first-rate explorative history of what unfolded the fateful morning of January 26, 1986. Surely after twenty-four years, the facts have been unveiled, and any mysteries behind this tragedy have been revealed, but actually Allan McDonald, the former director of the Space Shuttle Solid Rocket Motor Project for Morton Thiokol, Inc., and James Hansen, a former NASA historian who is currently a history professor at Auburn University, have composed a major contribution in describing from the inside one of NASA's darkest moments. *Truth, Lies, and O-Rings* is also a heartbreaking tale of how this disaster might have been prevented.

McDonald's coverage of the Challenger accident is a firsthand account by a person who was involved in the decision to launch the spacecraft. A skillful engineer and executive at the time, McDonald relives the tragedy from where he stood at the Launch Control Center. McDonald is one of the few insiders who never signed a confidentiality agreement. Following the disaster, a distraught McDonald led the corrections of the solid rocket deficiencies so that the future Space Shuttles could operate successfully. With the help of Hansen, McDonald's first book provides a balanced narrative that is cogent, clearly presented, and based on not just memories now twenty years old, but also on 1,400 pages of detailed, handwritten notes he made at the time of these events.

While working as an engineer and manager for Morton Thiokol's space shuttle solid rocket booster (SRB) program, McDonald was heavily involved during the ramp-up of production after the shuttle's first test flights. Ironically, it was his participation in the accident investigation of an explosion at one of the SRB propellant casting facilities that brought him into the shuttle SRB program in the first place. He became a program manager for the Filament Wound Casing SRBs being tested and built for shuttle launches from Vandenberg Air Force base, a program that was cancelled after Challenger. He also became the chairman of the Senior Materials Review Board for the Solid Rocket Motors. This board was assigned the task of tracking all the discrepancies found in the SRB hardware both before, during, and after use, and McDonald had to sign off on the recommendations to accept or reject hardware for use. So his credentials are impeccable, and his knowledge of the engineering aspects of the rocket booster technologies is above reproach.

The book fast forwards to January 27, 1986, with the very unusual meeting between NASA SRB program managers and Morton Thiokol managers, concerning the topic of launching in cold temperatures and how the cold might have affected the performance of the O-rings in the Solid Rocket Booster field joints. McDonald was there and gave his input courageously by vocally expressing both his concerns and doubts. He had refused to sign off that

the shuttle was ready for launch under those conditions. McDonald states that "some NASA officials at the Marshall Space Flight Center in Huntsville, Alabama, and several members of Morton Thiokol senior management were in collusion and were clearly trying to cover up this bad decision to launch, and I had just pulled the cork out of the bottle." The entire Challenger affair caused McDonald to be labeled a "whistleblower," and while it affected his career thereafter, he continued to work and much later retired at the top of his game as an executive.

For those that do not have a formal education in engineering, the book can drag a little at the beginning. However, the book is compartmentalized smartly so that what is written in the early chapters has direct bearing on what comes later. Once you get past the early few chapters, it is hard to put the book down as the crescendo of *how* what is known to have happened unfolds.

I recommend this book to anyone who has an interest in the space and shuttle programs, or complex engineering projects. Studying the failures and accidents in the space program are just as important as studying the successes; otherwise, we could be doomed to repeat them or have similar failures. This book should also be required reading for engineering and business students, for there are key lessons in ethics and decision making under pressure.

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HEALTH & MEDICINE

BUILDING HEALTHY COMMUNITIES THROUGH MEDICAL-RELIGIOUS PARTNERSHIPS by Richard G. Bennett and W. Daniel Hale. 2d ed. Baltimore, MD: The Johns Hopkins University Press, 2009. 228 pages, index. Paperback; \$25.00. ISBN: 9780801892936.

This book has been published in a timely manner since United States health care reform has been forced to the forefront of the national conversation. Medical costs for the average American are daunting. For example, most recent Medicare spending has been shown to average \$3,469 for healthy individuals while averaging \$21,064 for individuals with poor health. There are obvious and published disparities in medical spending based on ethnicity and age, as well.¹

Bennett and Hale are faculty at the Johns Hopkins University School of Medicine and have experience researching chronic disease and managing health-care organizations. The premise of their book is that prevention is essential to good health (and to decrease long-term morbidity and mortality associated with chronic disease complications) and that encouraging churches to start congregational health education programs will fill a much-needed niche for prevention. Their idea is an excellent one since congregations attract large numbers of people who are open to hearing messages associated with improving themselves and their loved ones.

The book opens with an actual-case scenario of a pastor diagnosed with non-insulin-dependent diabetes mellitus

“adult onset” diabetes) through a health ministry at his church. The authors then describe what a typical medical-religious partnership should look like, especially in the setting of various types of preventative medicine. The majority of the book expands on specific chronic diseases as well as disease risk factors that can be addressed in a congregational setting. Such topics include coronary artery disease, hypertension, cancer, diabetes mellitus, dementia, depression, influenza and associated pneumonia, advanced directives, ways to communicate to health-care providers, modification of lifestyle risk factors, medication management, and accidents and falls. Every chapter follows the same general outline. A description of each topic is written in such a manner that a layperson can understand the underlying pathophysiology, symptoms, testing, and treatment options. These descriptions are followed by specific suggestions regarding how to set up a congregational program for the discussed disease or medical issue. Each chapter ends with real-world examples of churches that have had successful programs with these topics as well as pertinent information resources (such as the American Heart Association and the Centers for Disease Control and Prevention).

The last two chapters of the book provide examples of successful medical-religious partnerships and a descriptive listing of resources available to congregations from around the country. I was particularly impressed with the appendix section, which provides succinct handouts and forms for churches to use.

In summary, this is a very good and instructive book. It is difficult to study medical-religious partnerships in a prospective manner which would involve a large number of congregations. Including such information might be beneficial, but it would slow down a reader's ability to complete each chapter. Also, as a biased reviewer, it would have been helpful for the authors to include pediatric issues such as childhood obesity and child abuse. However, the book is an extremely effective resource for two groups of people. It will help those congregations that wish to begin prevention programs in their church, as the book provides a good outline of topics that are easy to follow. It will also help physicians, nurses, and other members of the health care community who are asked to participate in such programs.

J. M. Sutherland, E. S. Fisher, and J. S. Skinner, “Getting Past Denial – The High Cost of Health Care in the United States,” *New England Journal of Medicine* 361 (2009): 1227–30.

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HISTORY OF SCIENCE

SAVING CREATION: Nature and Faith in the Life of Holmes Rolston III by Christopher J. Preston. San Antonio, TX: Trinity University Press, 2009. 256 pages, pictures, index. Hardcover; \$25.95. ISBN: 9781595340504.

Rachel Carson is often called “the mother of the environmental movement” and Holmes Rolston III “the father of environmental ethics.” It is fitting then to read Christo-

pher Preston's biography of Rolston so soon after Mark Lytle's 2007 biography of Carson, *The Gentle Subversive: Rachel Carson, Silent Spring, and the Rise of the Environmental Movement*. While Carson protested against the use of toxic insecticides such as DDT, Rolston was developing philosophical and theological arguments for protecting the environment. Advocating the idea of nature's intrinsic value, Rolston pioneered the discipline of environmental ethics, which eventually led to his award of the Templeton Prize in 2003.

Preston illuminates Rolston's work in a life context of nature exploration, studies in the natural sciences, graduate work in Scotland, and Presbyterian pastorates. The Shenandoah Valley of Virginia and the Alabama Black Belt are rich natural lands where his family lived for many years, and where his grandfather taught him basic environmental ethics: “Take care of the land and it will take care of you.” Although he has become an acclaimed scholar in his field, his life was not without challenges. The honest accounts of Rolston's struggles are to be appreciated by every reader: he had to endure the rejection of the parishioners to whom he was ministering; despite his outstanding academic background and achievements, he had difficulty finding a teaching position; and even after gaining recognition as an environmentalist, his environmental ethics further developed through painful criticisms.

This biography is also an intellectual history. It highlights the development of critical issues and questions in environmental ethics. Some of these include the following: Should the ecosystem be sustained by human intervention or should it be left untouched? Should not the beauty of nature require human maintenance? Tougher questions may include, “How do we balance human interests with environmental obligations?” (p. 179) and “How far [does] this obligation to protect nature go?” (p. 180). Answers to these questions concern consideration in many areas, for example, cultural, economic, political, spiritual, and aesthetic, as well as ecological claims and interests. Readers who wish to gain insight into how the discipline of environmental ethics developed will benefit greatly from learning how Rolston wrestled with these questions.

By choosing the title *Saving Creation*, instead of *Saving the Earth*, Preston underlines Rolston's identity as a Christian scholar. Rolston attempts to reconcile his faith and environmental concerns; this problem brings theology and ecology into dialogue. Although Rolston started with a naturalistic articulation of nature's value, he came to the conclusion that science itself could not explain the process of evolution that is so contrary to overall entropy. Rolston appeals to the Calvinist emphasis on “God's ongoing grace” that sustains the order of nature. However, acknowledging the reality of novelty in the natural world, Rolston cannot approve the idea that God scripts everything ahead of time. Rolston finds an Irenaean view of creation most convincing, and explains that the evolutionary process moves forward progressively and redemptively because of sufferings and challenges. Rolston calls this process “cruciform.” These arguments touch a wide range of studies. Having co-edited *Nature, Value, Duty: Life on Earth with Holmes Rolston III*, the biographer is able to describe Rolston's arguments succinctly and intelligently.

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However, there are places in the book where descriptions may need clarification or correction. For instance, Preston refers to Karl Barth's rejection of natural theology as "a rejection of nature" (p. 78). Anti-natural theology and anti-nature are two different issues. Further, it is said that in his *Institutes* [I.13.14], Calvin refers to "[a common] grace as 'spirit'" (p. 79). However, it is not grace or "spirit," but the Person of the Holy Spirit, of which Calvin speaks in this particular passage. It is not clear in the text whether such descriptions portray Rolston's misunderstanding or, more likely, Preston's misunderstanding of Rolston.

Preston's writing is concise yet flowing. Though this biography may be of greatest interest to environmentalists, it is also a good introduction to environmental ethics. Rolston's life is an intriguing story; it challenges us to prepare for an eco-crisis in the coming century.

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GALILEO GOES TO JAIL AND OTHER MYTHS ABOUT SCIENCE AND RELIGION by Ronald L. Numbers, ed. Cambridge, MA: Harvard University Press, 2009. xi + 302 pages, including notes and index. Hardcover; \$27.95. ISBN: 9780674033276.

You may have seen ads for this helpful, entertaining, and long-overdue volume in places such as *The New York Review of Books*, the Harvard University Press website, Facebook, Twitter, and YouTube. "25 Myths Debunked" is the heading; then comes the list, in all its boldfaced numbered glory [lack of punctuation after the myth statements in the original], that causes the antennae of history-of-faith-and-science types to twitch with anticipation:

- Myth 1.** That the Rise of Christianity Was Responsible for the Demise of Ancient Science
- Myth 2.** That the Medieval Christian Church Suppressed the Growth of Science
- Myth 3.** That Medieval Christians Taught That the Earth Was Flat
- Myth 4.** That Medieval Islamic Culture Was Inhospitable to Science
- Myth 5.** That the Medieval Church Prohibited Human Dissection
- Myth 6.** That the Copernican System Demoted Humans from the Center of the Cosmos
- Myth 7.** That Giordano Bruno Was the First Martyr of Modern Science
- Myth 8.** That Galileo Was Imprisoned and Tortured for Advocating Copernicanism
- Myth 9.** That Christianity Gave Birth to Modern Science
- Myth 10.** That the Scientific Revolution Liberated Science from Religion
- Myth 11.** That Catholics Did Not Contribute to the Scientific Revolution
- Myth 12.** That René Descartes Originated the Mind-Body Distinction
- Myth 13.** That Isaac Newton's Mechanistic Cosmology Eliminated the Need for God
- Myth 14.** That the Church Denounced Anesthesia in Childbirth on Biblical Grounds
- Myth 15.** That the Theory of Organic Evolution is Based on Circular Reasoning
- Myth 16.** That Evolution Destroyed Charles Darwin's Faith in Christianity—Until He Reconverted on His Deathbed
- Myth 17.** That Huxley Defeated Wilberforce in Their Debate over Evolution and Religion
- Myth 18.** That Darwin Destroyed Natural Theology
- Myth 19.** That Darwin and Haeckel Were Complicit in Nazi Biology
- Myth 20.** That the Scopes Trial Ended in Defeat for Anti-evolutionism
- Myth 21.** That Einstein Believed in a Personal God
- Myth 22.** That Quantum Physics Demonstrated the Doctrine of Free Will
- Myth 23.** That "Intelligent Design" Represents a Scientific Challenge to Evolution
- Myth 24.** That Creationism is a Uniquely American Phenomenon
- Myth 25.** That Modern Science Has Secularized Western Culture

How many of us must wish we had written—or at least contributed to—this book! How handy it would have been to have had this text to use in our teaching, or to send to teachers, preachers, journalists, magazine and textbook writers, documentary filmmakers (among others), who have expressed strong but dubious views on these subjects without knowing either the primary sources (in English translation, if necessary) or the last forty years of scholarship in history and theology. Here, in concise chapters supported with bibliographically thickened endnotes, are introductory revisionist discussions by such established scholars as John Hedley Brooke (Myth 25), ASA Fellow Edward B. Davis (13), Maurice A. Finocchiaro (8), David C. Lindberg (1), David N. Livingstone (17), ASA member James Moore (16), and Ron Numbers himself (24).

The chapters are written by specialists who offer, for the general reader, popular, provocative summaries of recent research—much of it done by the authors themselves—concerning specific dubious claims. The term "myth" is used in the sense of misinformation that is pervasive and pernicious, with both legs *and* momentum.

There is a nice selection of topics, from ancient to modern. Some misconceptions, I would have thought, had been cleared up decades ago. Has anyone in living memory really believed that "Medieval Christians Taught That the Earth Was Flat," that "Copernicus Demoted Humans from the Center of the Cosmos," or that "Giordano Bruno Was a Martyr of Science"? Does anybody still believe the anti-Christian, Victorian fantasies of Draper and White concerning anti-scientific Catholics or unbiblical child-birth anesthesia? Surely the corrected version of the Huxley-Wilberforce "debate" and Jim Moore's deconstruction of Darwin's legendary deathbed conversion have sunk in

by now? Historians have long known—simply on huge bibliographic grounds—that Darwin did not “destroy” natural theology. And whoever said that Einstein, whose pantheism recalls Spinoza’s, “Believed in a Personal God”? These chapters do not beat dead horses, however. I have seen too much recent first-hand evidence that too many scholars, journalists, and bloggers write about (in)famous episodes in “the history of science and religion” without having read the relevant literature produced by historians of science, church historians, and theologians.

Some chapters strike me as conjuring straw figures for easy demolition. That Christianity *alone* “Gave Birth to Modern Science” or that quantum physics *demonstrates* free will are, as simplistic propositions, rather over-the-top in their lack of nuance. And “That Darwin and Haeckel Were Complicit in Nazi Biology” seems anachronistically misstated. The evolutionists were not Nazis, but their work did provide imagery, language, evidence, and authority—among other cultural resources—that Nazis, including Hitler, could appropriate for their own purposes. Neither Darwin nor Haeckel were ideologically pure. Darwinism is not free of “social Darwinism.” And insofar as the Nazis were eugenicists and militarists, their ideology was a species of social Darwinism.

Having taught many courses on various aspects of the history of faith and science, I have wanted to write this book for a very long time. “Myths” in this field are alive and thriving in popular culture, many churches, and the academy, even in the twenty-first century. This book is desperately needed, and timely. After you have read it, you will wish you had written it too.

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ORIGINS & COSMOLOGY

I LOVE JESUS AND I ACCEPT EVOLUTION by Denis Lamoureux. Eugene, OR: Wipf and Stock Publishers, 2009. xvii + 184 pages. Paperback; \$22.00. ISBN: 1556358865.

If you struggle to connect with young-earth creationists beyond agreement that “it’s not *how* God created, it’s *that* he created,” fear no more. In *I Love Jesus and I Accept Evolution*, ASA Fellow Denis Lamoureux is on a mission to engage anti-evolutionists in the process of coming to terms with evolution, his main premise being “God created the universe and life through evolution, and this fact has no impact whatsoever on the foundational beliefs of Christianity” (p. 149). Lamoureux is the right man for the job: who better to meet these readers where they are than someone who, twenty-five years ago, left a professional career to become a creation scientist “with the intention of declaring war on everyone who accepted evolution!” (p. 2).

Lamoureux is associate professor of science and religion at St. Joseph’s College in the University of Alberta and holds PhDs in theology and biology. This book is a short and highly readable version of his comprehensive

Evolutionary Creation: A Christian Approach to Evolution (2008). Lamoureux’s young-earth creationist background, a position he “ferociously defended” (p.22), has gifted him with an empathy and genuineness that will undoubtedly help to create reader trust. Lamoureux just may be successful in his mission—with anti-evolutionists who are contemplating evolution and seeking a better understanding of Scripture. Unfortunately, those who most need to read the book will likely walk away from it.

The book has seven chapters, each building on those preceding, and short enough to easily maintain focus. There are also an astonishing fifty-eight figures and a three-page glossary to help the reader understand main concepts. The chapters are titled “Terms and Definitions,” “The Spectrum of Origins Positions,” “Ancient Science in the Bible,” “The Biblical Accounts of Origins,” “Evidence for an Old Earth and Evolution,” “Human Evolution,” and “Putting Origins in Perspective.” Lamoureux limits his definitions to evolution, creation, intelligent design (he dismisses the ID movement in a footnote), and scientific concordism. He explores ancient science in the biblical three-tier universe, and the ancient origins account (using ancient poetry and sources) in the first three chapters of Genesis, to demonstrate the role of an incidental ancient vessel in delivering life-changing messages of faith. He cautions against conflating the two, and emphasizes the principle of accommodation.

After a brief look at the evidence for human evolution, Lamoureux outlines three models for the manifestation of the image of God and sin. Then he deals with the greatest challenge for evolutionary creation: the sin-death problem, or biblical passages that present a connection between human sin and physical death. It is here that the need for his prior warning, namely, that readers will find some of his statements distressing, is most strongly confirmed. Lamoureux ardently holds to the manifestation of the image of God and sin as a mysterious part of the evolutionary process, but he rejects a historical Adam—not a popular view considering that most evangelicals still believe in Adam. In the final chapter, he directly addresses questions he often receives. His answer to why God may have created through evolution—“because an evolutionary world is the perfect stage upon which to develop a genuine relationship with him” (p. 153)—points to the possibility of a much bigger view of God, upon coming to terms with evolution.

Lamoureux ends with the origins paradox of irrelevance and relevance: knowing how God created is not essential to being a Christian, but people ask questions about origins and can “stumble and lose their faith over this issue” (p. 168). I hope this work helps anti-evolutionists gain awareness of the stumbling blocks to faith they create, and begin to consider if they can truly engage the Word of God while discounting major developments in understanding Scripture. *I Love Jesus and I Accept Evolution* is most valuable as a practical guide on “how to talk with your young-earth creationist friends about evolution.” But beyond this, Lamoureux’s work is admirable in how it seeks to unite Christians in foundational beliefs; challenges Christians who accept evolution to reflect on how they follow the first and second commandments when talking (or refusing to talk) with anti-evolutionists;

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and builds real appreciation for the faith of young-earth creationists, reminding us that we all think we understand better than we actually do.

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THE DEEP STRUCTURE OF BIOLOGY: Is Convergence Sufficiently Ubiquitous to Give a Directional Signal? by Simon Conway Morris, ed. West Conshohocken, PA: Templeton Foundation Press, 2008. vii–232 pages (includes list of contributors, bibliography, and index). Paperback: \$29.95. ISBN: 9781599471389.

Since the 1940s, the Darwinian theory of evolution is generally taken to have been superseded by the neo-Darwinian or synthetic theory of evolution. It was called synthetic because it integrated heredity and evolution. But it was not really synthetic because the study of embryonic development was left out. It took more than half a century of learning about the genetic control of embryonic development before that gap could begin to be addressed. Developmental biologists are now proposing explanations for the development of the overall animal body pattern, which are being integrated into evolutionary theory. The book to be reviewed is an edited collection of studies of convergence from this integrated perspective.

Convergence is the phenomenon that problems of adaptation have similar solutions in different organisms (pp. 13, 30). The solutions may be molecular, genetic, morphological, mental, and social. The thesis of the book is that there are “aspects of evolution that appear to be constrained, if not predictable” (p. vii). The ground for this thesis is the independent convergence of evolutionary paths on the same evolutionary solutions. The classical example of such a solution is the camera eye which occurs in jellyfish, snails, octopi, and whales. Their common ancestor lived before the first appearance of the camera eye. Hence it must have developed independently several times over, and this is taken as a hint, but no more than a hint, that there may be an undiscovered deeper order of life. Further, convergence requires natural selection in order to eliminate divergent evolutionary trajectories. The contributors describe examples of convergence and explore possible metaphysical implications of an ordering of evolutionary processes beyond what is accepted within the neo-Darwinian paradigm. The editor hopes that convergence points to a theory of biological organization that succeeds where the synthetic theory of evolution fails. This is not the first time that the explanation of the organization and the evolution of organisms are seen as mutually exclusive. Georges Cuvier (1769–1832) held this view, and the introduction appropriately places the book in that historical context.

Since this is an edited volume, I highlight common themes that run throughout the chapters. Richard Lenski opens with the question of how one might include directionality in an evolutionary process that is characterized by the interplay of randomness and necessity (chap. 1). He sees this interplay between the randomness of mutation and the necessity of natural selection as well as between the contingency of events in the history of life and the repeatability of convergence. Random events are

directed by necessary ones. Empirical approaches to testing such interplay are possible, Lenski argues, and he reviews an example from his own research. George McGhee argues that it is possible to predict existing as well as nonexistent morphologies, given known constraints imposed by the laws of physics and geometry as well as by the biological requirements of organisms (chap. 2). Karl Niklas describes convergent directionality in plant evolution resulting from extrinsic and intrinsic constraints. Among extrinsic constraints, the law of diffusion governs the relation between body volume and surface area across prokaryotes as well as unicellular and multicellular eukaryotes. Likewise, the laws of mechanics govern the relation between girth and height in trees with a certain tissue type. Intrinsic constraints come with the demands of photosynthesis and immobility on plant structure. Engineering theory allows only a few plant body plans that satisfy both intrinsic and extrinsic requirements, and these “solutions” are the ones repeated independently in phylogeny (chap. 3). In chapter 4, Simon Conway Morris notes that directionality as such does not allow one to make specific predictions about the outcome of evolution. How could one predict the outcome of one evolutionary pathway when experiments show that the same outcome can be reached via different pathways? How might one predict which solution to the problem of oxygen transport obtains when there are three options (hemoglobin, hemocyanin, and hemerythrin)?

Three chapters are devoted to the evolution of intelligence in plants (chap. 5), insects (chap. 6), and crows and primates (chap. 7). Each author argues that intelligence evolved multiple times independently. Ironically, the three chapters together implicitly invalidate this argument because each defines intelligence differently. Convergence, however, presupposes similarity, much of which is lost when intelligence is variously defined as controlled flow of information in a network of interacting constituents (chap. 5, p. 79), the ability to solve problems (chap. 6, p. 112), and the ability to think, reason, and solve novel problems (chap. 7, p. 128). Hal Whitehead (chap. 8) proposes that convergence of heritable social attributes in whales, elephants, and humans are caused by social learning and group selection. This is in line with the general pattern of explanation for similarity as the result of similar environmental demands, rather than of common ancestry.

The last four chapters deal with the question of purpose in evolution. As is well known, Ernst Mayr believed that one could acknowledge the existence of purpose in organisms objectively in science without getting nervous about its possible metaphysical implications. He called it “teleonomy,” as distinct from teleology. Yet Foley insists in chap. 9 on purpose being illusory. Clearly, this is a metaphysical, if not religious, position, masquerading under the guise of science. As John Haught observes in chap. 12, “... the naturalistic enshrinement of either chance or necessity can survive only in an illusory and imaginative world of ideas quite cut off from the actual narrative flow of nature and of life itself” (p. 230). Michael Ruse (chap. 10) sees no trouble for the Darwinian who acknowledges purpose in organisms. But, he emphasizes, “one cannot read God’s intentions from them. As a Christian, one should interpret them in terms of God’s intentions, but this is another matter.” As a scientist, one

strives, methodologically, “to be an atheist, even if he or she accepts a fuller and more meaningful meta-physical picture of ultimate reality” (p. 183). Celia Deane-Drummond argues (chap. 11) “that the concept of natural law provides one way of understanding in theological terms what evolutionary science is hinting at through notions of convergence and evolutionary ‘purpose’” (p. 214). One wishes she had placed this thesis at the beginning rather than at the end of her chapter, which suffers from a lack of focus and unsupported assertions. John Haught has the final chapter. He defines purpose as an overall aim to bring about a goal that is self-evidently worthwhile or good. This applies to the actions of people, but, he asks, is there purpose in the wider universe? Following Teilhard de Chardin, Haught proposes that subjectivity and purpose are cosmic realities. Scientists may exclude subjectivity *methodologically*, “as long as they remain aware that they have left something real off of their maps of nature for the sake of focusing on certain objectifiable and quantifiable aspects.”

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PHILOSOPHY & THEOLOGY

A CASE FOR THE EXISTENCE OF GOD by Dean L. Overman. New York: Rowman & Littlefield Publishers, 2009. 229 pages. Hardcover; \$24.95. ISBN: 978074256312.

In *A Case for the Existence of God*, Dean L. Overman sets out to provide “a cumulative case for the proposition that the existence of God is a rational, plausible belief” (p. xxvi). He identifies, first, a range of issues concerning the physical universe itself that God’s existence makes explicable. There is the sheer existence of a radically contingent universe. Drawing extensively on the work of Mortimer Adler, Overman devotes a considerable amount of space to distinguishing the contingency of things *inside* the universe from the contingency of the universe itself. Contingent objects within the universe merely pass from one form to another, as a fallen tree might decompose and become rich loam. In contrast, the universe itself, were it to go out of existence, would simply cease to exist altogether; it would not merely change its form. It is this latter contingency, what Overman calls “radical contingency,” that demands an explanation only God’s intentional action could provide.

Overman then draws attention to other characteristics of the physical universe that demand explanation: the intelligibility of the universe, its susceptibility to scientific, particularly mathematical, description, and the fine-tuning necessary for life that can be explained in no other way than by an intentional act of God. Particularly helpful here is his discussion of the inadequacy of suggested competing scientific theories such as evolution. Overman points out, rightly, that scientific theories are theories about the *components* of the universe, not the universe itself. If an explanation for the universe and its characteristics is to be had at all, it has to involve something outside the universe, not a component of one.

In a fascinating chapter that serves as a transition to discussing nonscientific evidence, Overman suggests that quantum mechanics is inconsistent with a strict reductive materialism. Quantum mechanics, in order to work, requires the existence of “knowers” located outside the physical system that the theory is intended to describe. If this is true, Overman asserts, reality cannot be merely physical reality. Because quantum mechanics implies the existence of non-physical reality, Overman suggests it is more compatible with a theistic worldview, rather than with a materialist worldview that reduces all reality to some configuration of physical matter. (Overman’s discussion on this topic is quite wide-ranging and complex. In addition to the main chapter on this topic, he includes in an appendix an extended quotation from Henry Stapp’s *Mindful Universe* to augment his argument.)

The shift away from the physical universe leads to evidence for God’s existence that is more peculiarly personal in nature. For instance, quantum mechanics introduces the possibility of persons with free will and a moral sense. Overman argues that the capacity to distinguish between moral right and wrong points to the existence of an absolute moral standard. Such an absolute standard cannot be accounted for by materialism alone. Hence, the existence of moral absolutes supports theism in a way that materialism cannot.

At various places in the book, drawing upon the work of, among others, Michael Polanyi, Overman affirms the significance of nonscientifically based knowledge. Rational knowledge results from the use of reason in scientific and/or philosophical endeavors. Personal knowledge, on the other hand, results from relationships with other persons. Persons cannot be the object of inspection and inference, but must be known in relationship with others. Such knowledge is not always easily described propositionally, but is manifest in the manner of one’s life.

Utilizing this conception of personal knowledge in his argument, Overman discusses at length what one would expect if one were to encounter a personal God. Crucially, personal knowledge of God inevitably brings transformation of life and character. Though Overman concedes that one can fully understand this only from the inside, the similarities among reports of such encounters with God lend support to the conclusion that God is the source of the experience. Overman then provides nine very diverse examples of those who attest to a personal, transformative experience with God.

In this review, I have described the broad outlines of Overman’s argument. There is much I have not covered. He is at his best when he engages science. In support of affirming God’s existence, he highlights questions that science cannot answer at all, e.g., why is there something rather than nothing, and he also identifies questions raised within science that point to the existence of God, e.g., scientific theories that lead to a beginning of the universe with a “Big Bang,” or the incompatibility of quantum mechanics with reductive materialism.

In all of his analyses, Overman demonstrates an impressive erudition regarding both scientific and philosophical literature. He interweaves the two disciplines in an engaging and interesting way, all the while recognizing

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the limitations of each sort of analysis. He responds to classical philosophical objections to natural theology from Hume and Kant, in part by noting that their epistemologies are completely incompatible with modern science. On the other hand, he utilizes some of the best contemporary philosophy of religion to argue that science is not competent to answer all questions, for example, William Lane Craig's argument for a beginning of the universe and Alvin Plantinga's argument against naturalism.

Has Overman succeeded in his task? I believe this book makes a genuine contribution to contemporary apologetics, particularly with his emphasis on science. Nonetheless, its appeal will be limited. Much of his discussion requires more background in science than will be found in a general reader. For that reason, I expect that the primary audience of this book will be scientists and lay persons who have an interest in the intersection of philosophy and science.

Other problems detract further from the effectiveness of his case. Let me give two illustrations. According to Overman, God is not "logically necessary," but is "conditionally necessary," one that is not dependent upon anything else for his existence. Because no logical contradiction occurs in saying that a conditionally necessary God does not exist, Overman believes this understanding of necessity allows him to sidestep traditional Humean and Kantian criticisms of the cosmological argument.

A problem arises because Overman uses logical necessity to demonstrate that the universe is radically contingent. He argues: "The universe is radically contingent because it is one among many *logically* possible universes" (p. 28, emphasis in original). On his account, God, though conditionally necessary, is also *logically* contingent. Thus, any argument for God's "conditional necessity" would also show that the universe is "conditionally necessary"; or any argument for the radical contingency of the universe would also be an argument for the radical contingency of God. In either case, the value of God's existence for explaining the physical universe would be zero.

A second illustration arises from his discussion of morality and his use of quantum mechanics. Overman argues that the capacity to distinguish between good and evil points to the existence of an absolute. Indeed, he asserts that, if God does not exist, "a serial killer and a benevolent charity are ultimately of equal value. (Actually there is no moral value if there is no God.)" (p. 89, parenthetical remarks in original). While this argument has an old and venerable history, Overman's use of it is so brief and conclusory that it raises more questions than it answers. It is certainly not obvious that the existence of moral value requires the existence of God, though Overman gives no argument at all for his assertion.

A similar problem arises with Overman's use of quantum mechanics. As this is not my area of expertise, I consulted physicists on Overman's particular interpretation of quantum mechanics. My sources told me that his interpretation is indeed possible; however, it is very controversial and is not accepted by most physicists. In any case, Overman's use of quantum mechanics, as well as his discussion of morality, seems to explain the controversial by invoking the more controversial. That does not make for a good explanatory argument.

I have noted two philosophically problematic areas in Overman's argument. To be sure, however, my criticism goes to particular components of his argument. On identifying affirmative evidence for which theism gives a cogent explanation, and conversely, on identifying the problem areas for alternative, nontheistic worldviews, he is spot on.

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DIVINE GRACE AND EMERGING CREATION: Wesleyan Forays in Science and Theology of Creation by Thomas J. Oord, ed. Eugene, OR: Pickwick Publications, 2009. 229 pages. Paperback; \$27.00. ISBN: 9781606082874.

THE SPIRIT RENEWS THE FACE OF THE EARTH: Pentecostal Forays in Science and Theology of Creation by Amos Yong, ed. Eugene, OR: Pickwick Publications, 2009. 246 pages. Paperback; \$30.00. ISBN: 9781606081969.

Nearly every paper in these twin volumes emerged from the joint meeting (2008) of the *Wesleyan Theological Society* and the *Society for Pentecostal Studies*. Themed "Sighs, Signs, and Significance: Pentecostal and Wesleyan Explorations of Science and Creation," the conference was held at Duke University and was co-chaired by the editors Thomas Oord and Amos Yong. Each volume is the first of its kind, and deserves to be evaluated individually for the degree to which it constructively contributes to the intellectual and spiritual enrichment of church, academy, and society. Yet in light of their common origin, it also makes sense to assess the books side-by-side. This review provides a summary and appraisal of the works, considered both separately and together.

We begin with the Oord volume. The ten papers are varied in aim and scope, treating at various points history, philosophy, ecology, hermeneutics, archeology, evolutionary theory, intelligent design, psychoanalytic theory, and neuroscience. In chapter 1, Randy L. Maddox states that the overarching goal of his own essay is to "increase our awareness of the range of options available" for relating theology and science (p. 16). This well-articulated objective may be translated into an overarching evaluative query for the entire volume: How exactly does a distinctively Wesleyan perspective "increase our awareness of the range of options available" for theology-and-science undertakings? We may point to two distinct "options" for theology-and-science engagement that the essays (taken on the whole) appear to signal.

The first option concerns the manner in which trans-disciplinary ventures develop. Many of the authors highlight the fact that Wesley, in his own significant engagement with the natural philosophies of his day, stands apart from many eighteenth-century English Christian intellectuals in his espousal of a markedly non-incendiary tone and agenda. As Laura Bartels Felleman carefully shows, Wesley, in his *Survey of the Wisdom of God in Creation* (1763), intentionally distances himself from those Christian intellectuals who suffused their natural philosophies with rancorous apologetic language directed at atheists. A Wesleyan approach to science would appear

to tend toward rhetorical modesty and epistemic nuance, rather than polemical posturing and apologetically motivated antagonism toward non-Christians.

The second option concerns the underlying objectives and ultimate goals of transdisciplinary work. In their essay "Mystery and Humility in John Wesley's Narrative Ecology," Marc Otto and Michael Lodahl convincingly demonstrate that Wesley's overall goal in his *Survey* was more evocative than it was provocative; Wesley tried to invite readers to worship God, as they consider the littleness of human knowledge and the unfathomable excess of divine wisdom and providential care as seen in nature. A Wesleyan lens seems to raise the question of the potential liturgical value in theology-and-science endeavors.

Thus the book succeeds in beginning to limn the contours of a uniquely Wesleyan approach to contemporary theology-and-science dialogues. In addition to this overall accomplishment, several chapters deserve to be highlighted for the strength or uniqueness of their contribution. Jürgen Moltmann—though not coming from a specifically Wesleyan viewpoint—offers a tantalizing (if undeveloped) "hermeneutics of nature," in which nature's "inner meaning" is interpreted theologically in light of the fullness of God's arrived and arriving Kingdom. In chapter 8, ASA Fellow Rebecca J. Flietstra—professor of mammalian physiology at Point Loma Nazarene University—outlines the five basic components of Darwinian evolutionary theory and argues that all of them may be considered consonant with a Christian understanding of divine grace in creation. Finally, ASA member W. Christopher Stewart thematizes the goals of the intelligent design (ID) movement; implicitly questions the secular legitimacy of those goals by showing ways in which science and philosophy can relatively easily "give them [ID theorists] what they want" in accordance with those goals; and explicitly questions the theological legitimacy of said goals by showing ways in which they fail to resonate with core Wesleyan intuitions regarding the nature of faith and the transformation of society.

We turn next to the Yong volume. In the Introduction, Yong helpfully contextualizes the project by situating it within the undeveloped, yet steadily burgeoning, world of Pentecostal scholarship. He makes clear that while the book's primary intended audience is Pentecostals seeking a "more integrated theological world- and life-view that includes the sciences," it is also hoped that the text may prove illuminative for scholars involved in broader religion-and-science conversations (xxii).

On the whole, the twelve essays in the book (which cover biblical, historical, theological, and contextual/applicational themes) succeed in compellingly addressing the primary audience, but have little to offer the secondary audience. As only a few of the essays engage science directly (and many not at all), Yong's summative comment that "the essays in this volume represent nascent efforts of Pentecostal scholars to come to grips with science, and much of this is grappled with at the level of theology of creation rather than at the level of science specifically" rings quite true, implying that the book is perhaps best used as a ground-clearing tool for future, more substantive, Pentecostal transdisciplinary forays.

In a number of the essays, this preparation consists of the message that if Pentecostal theology is to enter into serious dialogue with the sciences, it must first radically re-envision some of its most foundational theological categories. Eschatology, for example, stands out as a category especially in need of bold and creative re-imagining. Here we may point to Robby Waddell's essay that seeks to show that the current Pentecostal notion of heaven as the "wild blue yonder" is based largely on scriptural misunderstandings of John's Apocalypse and an outdated cosmology. On exegetical grounds, Waddell argues for a view of the new creation as relational, dynamic, and renewed, rather than obliterated at the eschaton. Additionally, in their similarly provocative and nuanced essays on Pentecostal theology and the environment, Shane Clifton and Matthew Tallman each critically question pre-millennial Pentecostal eschatological paradigms in which, at the end of the age, the saints are raptured and the earth is destroyed. For all three of these authors, a more faithful, transformative, and pneumatologically robust Pentecostal theology of creation necessitates an eschatological vision in which our hopeful anticipation of future renewed life is worked out through our *present* participation in the Spirit's transformative work. Such a re-imagined eschatology opens the way for a deeper engagement with the ecological sciences, and a more responsible "earthkeeping praxis" (Clifton).

The volume also points to the need to move beyond anthropocentric models of salvation and healing, in which the Spirit's transformative work is more or less limited to redeeming individual human souls and righting individual human bodies. In his essay "Created for Shalom," R. Jerome Boone concludes, "The transforming work of the Spirit enables people to return to the role of God's partner in the maintenance of well-being in the world. The task is to recover shalom for all things" (p. 29). For Shane Clifton—whose overall goal is to reinterpret Pentecostal symbols in light of environmental concerns—salvation means that Jesus is liberator and renewer of all humanity and creation; Spirit-baptism includes empowerment to participate "with the Spirit in breathing life to the earth" (p. 131); and the church's healing ministry is extended to encompass "healing of the sick and dying environment" (p. 131).

While some of the essays in the Yong volume help prepare the way for further transdisciplinary work in Pentecostal theology-and-science, others fail to do so because they lack clarity, logic, and/or relevance. Perhaps it goes without saying that a paper published in an edited volume in the humanities ought to have, minimally, (1) a clear, substantive, concisely-stated thesis; (2) a coherent argument that spells out the thesis; and (3) some attempt to relate the argument to the overall question that orients the collection. Disappointingly, a number of essays in the Yong volume do not meet these minimal standards; thus, the value of the work is diminished due to that poor quality of writing and argumentation.

Together, the Oord and Yong volumes represent a significant step forward on the part of conservative Protestants in their attempt to grapple theologically with the natural sciences. To date, much of the interaction between conservative-leaning Protestant Christians and the scientific establishment has been framed by rancorous creation-

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versus-evolution debates. These volumes provide new conceptual and attitudinal frameworks for the dialogue by (1) opening up more hermeneutically nuanced and scientifically amenable readings of the Genesis creation accounts (in Oord's words, "The Bible tells us how to find abundant life, not the details of how life became abundant"); (2) presenting expanded views of creation's meaning (e.g., as ongoing); (3) offering some resourceful, imaginative, and practical options for reconciling Christian theologies of creation with Darwinian evolutionary theory.

On the downside, the volumes reflect the disproportionately male-dominated worlds of both theological scholarship and the natural sciences. There are only three female authors in the Oord volume, and in the Yong volume there are none. This imbalance perhaps contributes to some substantial scholarly negligence. For instance, while many essays in both volumes call for nondualistic and nonanthropocentric theological frameworks, there is barely any reference made to the vast body of feminist and ecofeminist theological literature, which, for approximately thirty years, has led the way in these two inter-related calls for doctrinal reform.

While the volumes are to be applauded for being unique and valuable contributions to Wesleyan and Pentecostal Christian thought and practice, they have limited usefulness beyond the bounds of those (or similarly minded) churches and seminaries. On the whole, the essays in the Oord volume intimate that theological engagement with science is for the purpose of strengthening Christian faith, and the essays in the Yong volume hew closely to Pentecostal theological concerns, barely touching science at all. If, as David Tracy argues, theologians have a responsibility to engage in authentically "public" discourse at the level of the broader society, then it is incumbent upon conservative Protestant theologians to find ways to break through in-group insularism without falling into out-group polemicism. Indeed, this remains a challenge not only for Oord, Yong, and their contributors, but for all Christian theologians seeking to interpret the implications of science for the Gospel and of the Gospel for science.

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DEEPEST DIFFERENCES: A Christian-Atheist Dialogue by James W. Sire and Carl Peraino. Downers Grove, IL: InterVarsity Press, 2009. 203 pages. Paperback; \$15.00. ISBN: 9780830833580.

Deepest Differences: A Christian-Atheist Dialogue is a collected email dialogue on matters of faith and truth between a noted Christian thinker and an atheist scientist. And, sadly, the atheist eats the Christian for lunch.

This surprised me. The book is published by InterVarsity Press, a respected evangelical publisher. And one of the authors is ASA member Jim Sire, of *The Universe Next Door*, a comparative study on world views that helped frame the intellects of thousands of undergraduates in Christian universities over the past thirty years.

So as I picked up this volume, I assumed that if Sire and InterVarsity have attached their names to this volume, then the debate between Sire and Carl Peraino would move the conversation forward in a positive direction. It does not.

And so much the pity, because such conversations are indeed needed at this time, with a resurgent atheism in the USA and with expressions of religious fervor worldwide increasingly identified with fundamentalist rhetoric and violence. There is opportunity in this climate to present a different kind of apologetic. The authors are obviously good men and deep thinkers, who have pondered these topics long and hard and who are obviously trying their best to engage in a meaningful, even courteous, dialogue. But the frustrations surface easily and quickly, as they talk past each other, as they make generalized assumptions about the other's positions, as they conclude early on that no one's mind will be changed, and then as they quit the dialogue in some exasperation over the futility of it all.

Both men seem tied to the epistemologies and biases of their generation; they are having roughly the same debate in 2009 that they would have had in 1979, had they encountered each other then. But the arguments from rationality used by believers in the modernist era, never terribly persuasive to begin with, have lost most of their sticking power. Conversely, the arguments advanced by Peraino for atheism are also rather dated (his favorite authority is Bertrand Russell), and probably persuasive only to those already inclined to be persuaded.

Sire's initial and primary argument concerns the basis for morality. He keeps revisiting this one throughout the exchange of letters and is frustrated that it is entirely without effect. In an afterword, he reveals,

This is one of the great puzzles of our discourse. Why can't Carl see that explaining why we have moral notions is far from explaining what it means to have them? I say they need a foundation of something outside human opinion or human desire. He says no ... The notion of a transcendent foundation for both morality and rationality is so central to the Christian faith that without the one, we can scarcely have the other. (P. 177)

Sire keeps making the argument that, without such transcendence, there is no ultimate moral foundation and that such subjectivism will eventually collapse into either a Nietzschean will to power (a Spenserian survival of the fittest) or an amoral horror. I happen to agree with him. But it is a difficult premise on which to base an argument for the existence of God.

There are at least two problems with this argument for a transcendent moral foundation for apologetics. First, it is interpreted by Peraino as an argument for the moral superiority of believers, which he finds offensive, as other atheist writers of this decade have been wont to do (see, particularly, Christopher Hitchens' *God is Not Great*) and is thus, in response, fairly ruthless in his indictment of Christians for sins past and present. A second reason that the argument does not work well is that the God who emerges from it functions primarily as a cosmic police officer. One does not encounter in such an argument the God of grace who freely and joyfully loves his creation,

who enters into that creation and becomes incarnate within it, who gives of himself at great cost for its eternal redemption.

From this discussion of morality and theodicy, the authors veer into what appears to be safer territory: intelligent design. Unfortunately, they are in over their heads on this debate, although both are familiar with the major names and some of the ideas. Sire, a theologian, finds himself in the unenviable position of trying to persuade a distinguished biochemist that the scientific community is, or should be, keeping the debate open. Peraino will have none of it, and is fairly dismissive of Behe, Dembski, and Johnson and what he regards as their pretensions to scientific authority.

In the final section of the book, Sire finally takes the offensive by making an epistemological argument: pure rationalism is not sufficient for understanding truth. Peraino responds that he is advocating for the scientific method, which he perceives as a neutral, free of values, faith, or preconceived notions of truth. Sire demonstrates pretty convincingly that such a neutral notion of the scientific method is no longer intellectually viable. This, Peraino refuses to see or acknowledge, as he is wedded to that old ideal of the value-neutral “fact” that exists as an entity on its own until appropriated by a value-free mind.

At the end, both agree to simply stop it. Peraino writes plaintively near the end, “Are you sure you want to continue these exchanges? I’m sure what I’ve said is as alien to you as what you’ve said is to me. When you talk about nonmaterial ways of understanding reality, we might as well be in different universes” (p. 171). The metaphor of “different universes” is ironic here, addressed as it is to the author of *The Universe Next Door*. Jim Sire, the expert on world views, is in dialogue with one “next door,” and finds it incomprehensible. And the representative of that viewpoint finds him equally so. And so, sadly, those of us who care about such matters should best read another book.

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RELIGION & BIBLICAL STUDIES

THE LOST WORLD OF GENESIS ONE: Ancient Cosmology and the Origins Debate by John H. Walton. Downers Grove, IL: IVP Academic, 2009. 192 pages. Paperback; \$16.00. ISBN: 0830837043.

The writings of Josephus are ubiquitous on clergy bookshelves because a thorough understanding of the culture of New Testament times can enlighten our interpretation of Scripture. Cultural awareness is also crucial to hermeneutics for the creation narrative (Gen. 1:1–2:3) in the Old Testament. ASA members are likely to be familiar with the works of Paul Seely, Carol Hill, Dick Fischer, and others who have written on this topic and even recently presented papers at the annual ASA meeting at Baylor University; they have worked tirelessly to try to incorporate a cultural understanding of the times into interpret-

ing the early chapters of Genesis. With his recent work, *The Lost World of Genesis One*, John H. Walton (professor of Old Testament at Wheaton College) adds his scholarly voice to this choir, bringing a fresh perspective that enlightens, enriches, and honors the biblical text.

This is actually Walton’s second book on the topic. His first book, *Ancient Near Eastern Thought and the Old Testament* (Grand Rapids, MI: Baker Academic, 2006), is intended for a scholarly audience, packed with references, factoids, and tending to be a bit dry to read. This new book, while still well documented, should appeal to a wide audience with its approachable writing style and appealing format. *Lost World* is divided into eighteen short segments (propositions) that allow the reader to absorb, pause, and reflect on what Walton is presenting. Indeed, it will be paradigm shifting for many. The writing is solid, easy-going, and suitable for individual study or group discussion.

The first ten propositions describe what Walton refers to as the “cosmic temple inauguration view” of the Genesis One creation narrative. He begins with a short discussion of one of the most difficult of all translation issues: translating the culture. Simply put, ancient cultures viewed the world through eyes different from ours, eyes that perceived the whole world as a supernatural place where the relationship of the deities to people was of the utmost importance. Given such a view, the ancient peoples were less interested in material issues (how, when, and of what was it made) and more interested in how the world functioned in relationship to deity (questions of purpose and authority). Next, Walton rigorously examines each use of the Hebrew verb *bara’* (translated, “to create”) in the Old Testament and concludes: “[N]o clear example occurs that demands a material perspective for the verb, though many are ambiguous. In contrast, a large percentage of the contexts require a functional understanding.” His case is made stronger by further scholarship as he notes, “It has long been observed that in the contexts of *bara’* no materials for the creative act are ever mentioned, and an investigation of all the passages mentioned above substantiate that claim.” Each day in the first creation narrative is then re-evaluated in light of a functional—rather than material—orientation. His discussion sheds considerable light upon the well-known parallel-triad literary structure of the first six days.¹

The first portion of the book concludes with a discussion of the importance of day seven in the narrative. Throughout the Old Testament, the earth is repeatedly referred to as the Lord’s temple. Again, cultural differences between our time and the ancient peoples obscure the deep meaning of the text. Walton tells us: “The difference is the piece of information that everyone knew in the ancient world and to which most modern readers are totally oblivious: Deity rests in a temple, and only in a temple. This is what the temples were built for.” Ancient readers would not have perceived God to have suddenly gone into autopilot or to have taken a well-deserved respite at the conclusion of the first six days. Instead, they would have interpreted day seven as follows: “When the deity rests in the temple it means that he is taking command, that he is mounting to his throne to assume his

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rightful place and his proper role.” To put it in theatrical analogy: the stage is set and the drama can now unfold. Walton further concludes that the first creation narrative is, in fact, a text of inauguration because, to the ancient peoples, temples required an inauguration ceremony in order to become fully functional under the deity’s direction; the Genesis text begins with a narrative celebrating God’s indwelling of, and ongoing sovereignty over, creation.

The remaining propositions in the book explore the implications of a functional, rather than material, view of this creation narrative. The topics covered are varied; here are a few: taking a “literal” view of the narrative, theological implications, the freedom to let science explore material origins, intelligent design, and public science education. These topics are covered briefly and would spawn a great deal of discussion.

The book, in this reviewer’s opinion, has two minor flaws. First, the topics in the second half of the book are covered very superficially; readers familiar with origins debate issues would certainly crave a deeper analysis of the implications of the cosmic temple inauguration view. It is, however, understandable—and forgivable—that there are space limitations, and an analysis that was too deep might turn away readers new to the origins debate. Second, while the author makes a very concise and lucid point about the difficulties of culture in translation, the author misses the mark slightly on explaining why historical/cultural scholarship is important in this area. Readers new to topics in the origins debate, and quite possibly skeptical of any new interpretation of the first creation narrative, need to be put at ease with the technique; an illustration or two from some noncontroversial passage of Scripture that has been illuminated by a proper historical/cultural understanding would have been helpful.

The book’s strengths are many. The author makes his case for the cosmic temple inauguration view in a lucid and convincing way. His scholarship and depth of knowledge regarding the relevant archaeological data are obvious, yet he does not overwhelm the reader with so many details that the novice would get lost. There are numerous endnotes provided for those readers who want more. Groups choosing to study this book together will find helpful its organization by brief proposition. Also useful is the fact that the author included a brief summary for each proposition, and these summaries provide a transition into the next proposition, contributing to the transparency of the author’s line of reasoning.

This reviewer tremendously enjoyed reading the book and found it thought provoking and paradigm shifting. Naturally, not all will embrace the book’s thesis. Some on the one side, who may have embraced a view that this opening scriptural narrative is merely plagiarized fiction, may not fully appreciate the point. They should know that Walton has a very high view of Scripture and is unwilling to dismiss it as merely ancient storytelling; the narrative is significant, and we must not abandon attempts to deeply understand it. Those on the other side, who may seek to force the text into a set of historical events that occurred during six twenty-four-hour periods, may not readily accept the functional perspective presented. Again, Walton’s high view of Scripture applies

here; he desires to read the text literally, and a true literal reading of the text should be from a functional perspective—that is, after all, how the patriarchs and Israelites would have understood it. For those who wish to translate *yom* (day) as a long period of time, Walton points out that such an interpretation is inconsistent with good translation principles and is unnecessary.

As the author discusses in the latter half of the book, the thesis has tremendous potential to reshape much of the “science-religion” debate. He explains, “Though the Bible upholds the idea that God is *responsible* for all origins (functional, material or otherwise), if the Bible does not offer an *account* of material origins we are free to consider contemporary explanations of origins on their own merits, as long as God is seen as ultimately responsible.” Neo-Darwinism and big bang cosmology may ultimately be replaced by better scientific theories, yet we need not reshape our understanding of Scripture to match the scientific theory *du jour*. Conversely, we need not shape our understanding of science around something that the Bible does not, in fact, specify.

I recommend the book to anyone interested in the origins question and look forward to seeing how these ideas shape origins discussions of the future.

Note

¹Day one pairs with day four (light and lights), day two pairs with day five (heavens/waters and birds/fish), and day three pairs with day six (land and land animals).

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RELIGION & SCIENCE

BUDDHISM AND SCIENCE: A Guide for the Perplexed by Donald S. Lopez. Chicago, IL: University of Chicago Press, 2008. 264 + xiii pages, notes, index. Hardcover; \$25.00. ISBN: 9780226493121.

Popular myths often persist because we ignore the complexities of history. One such myth that has persisted for the past 150 years is the idea that Buddhism and modern science are, without question, fundamentally compatible. In *Buddhism and Science*, Donald Lopez, distinguished professor of Buddhist and Tibetan studies, explores the legitimacy of this view. Lopez rightly points out that the claim for compatibility rests on one of two assumptions. Either Buddhism lacks an essence, in which case it can be interpreted in any way that it might need to be in order to be compatible with science, or Buddhism is very narrowly defined, in which case the narrowly defined version of Buddhism can be shown to be compatible with science.

Against the latter claim, Lopez demonstrates that the historic evolution of Buddhism itself is far too complex to warrant an overly narrow understanding of Buddhism itself. Thus, claims for the compatibility of modern science with say, Zen Buddhism (principally a Japanese tradition), overlook the rich traditions of Buddhism in India, China, Sri Lanka, or Tibet. Taking one strand of the tradition to be

representative of the whole is, for Lopez, unstable ground for drawing decisive conclusions about the compatibility of Buddhism and modern science. At the same time, Lopez recognizes that Buddhism is not infinitely malleable. Thus, while it is unacceptable to understand Buddhism in an overly narrow way, it is equally unacceptable to understand Buddhism in whatever way one wishes. The anti-essentialist view runs “the risk of allowing Buddhism to be everything and nothing.” Says Lopez, “It is neither” (p. 216).

In unpacking these claims, Lopez spends the bulk of his book writing about the rich and complex history of Buddhism—focusing on key encounters between Buddhism and science. The result is that this book is primarily about the history of Buddhism, with a tip of the hat to a smattering of important scientific ideas. Still, the book is a fascinating study in the complexities of the relationship between religion and science generally, and of Buddhism’s ongoing efforts to come to terms with the deliverance of modern science in particular.

Lopez traces this complex history over the past 150 years by focusing on five pivotal historical moments in the encounter between Buddhism and modern science. First, in chapter one, Lopez explores the compatibility of Buddhist cosmology and geography with modern science through the lens of a debate about the existence of Mount Meru—a centerpiece of Buddhist cosmology. The public debate between a Buddhist monk and a Sinhalese convert to Christianity took place in Sri Lanka in 1873. While the debate was thought to be a victory for Buddhism, Lopez explores how the ensuing history is marked by increasing ambiguity—with some Buddhist strands viewing the actual existence of Mount Meru as inessential to Buddhism itself. Second, chapter two treats the historical interaction between Buddhism and the “science of race.” Third, in chapter three, Lopez focuses narrowly on the work of two Tibetan Buddhist monks: Gendun Chopel and the Dalai Lama. In painstaking detail, Lopez analyzes the writings of both to bring out the manner in which the largely isolated Tibetan Buddhists grappled with their encounter with the modern world. Finally, after a chapter on the western, historical study of Buddhism itself (chapter four), Lopez rounds out his study with a brief chapter (five) on recent neurophysiological studies of Buddhist meditation. Given the volume of attention that the latter has received in recent years, this chapter is regrettably brief—focusing largely on the practice of meditation from the Buddhist perspective.

As a work of historical scholarship, Lopez’s book is remarkable. It is dense and detailed. And for a reader who is not acquainted with the intricacies of Buddhism, the details are often excruciatingly complex. In that respect, this book may serve more to induce perplexity than to guide one through it. However, for those with an interest in the relationship between religion and science, or for those who wish to dispel the popular myth that all things scientific have been anticipated by the Buddha, Lopez’s *Buddhism and Science* is a welcome resource.

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GLOBAL PERSPECTIVES ON SCIENCE AND SPIRITUALITY by Pranab Das, ed. West Conshohocken, PA: Templeton Press, 2009. 224 pages, index. Paperback; \$29.95. ISBN: 9781599473390.

In an era of globalization, it is increasingly important that we listen to one another. This is the spirit of the Global Perspectives on Science and Spirituality (GPSS) Program, of which the editor of this book is the leader. In recent years he has worked with scholars from around the world to bring their insights on issues relating to science and spirituality to a Western audience. This book contains twelve of the award-winning essays selected from among 150 applicants from over twenty countries.

This book is extremely broad. Authors from Poland, Russia, America, Hungary, China, Korea, Germany, Czech Republic, India, Japan and Slovakia contribute chapters. Chapters are presented from the positions of Christianity, Daoism, Buddhism, psychology, Indian spirituality, process philosophy, and mathematics. The editor has succeeded in bringing a variety of voices to the Western reader, but I am not sure how many readers are conversant or interested enough in this breadth of ideologies and cultural perspectives to remain interested throughout. Each chapter is quite demanding in its complexity.

The book is unique in bringing together scholars from many countries and persuasions. This open approach is a challenge to many Christians who are often guarded in what resources they will draw on in formulating their position. It made me ask to what extent ASA writings might more creatively explore new territory while holding to fundamental truths. I leave it to other readers to decide if the premise of the GPSS is an avenue of new thinking for us evangelical Christians, or not.

The essays in this book lack a unifying position. Most books I have read on science and faith have defended an authentic Christian approach to the issues. This book is open, and advances no particular religion. That is both a strength and a weakness. The strength is that it expands the limits of what can be considered. Furthermore, the breadth of religious perspectives presented reminds us of the complexity of the issues from a global perspective. The weakness is that the book lacks a foundation or guiding approach. After completing the book I was still unclear what the editor hopes to accomplish. I am accustomed to using accepted methods of Scriptural exegesis in doing theology and the scientific method in doing science, and then seeking for positions acceptable to both disciplines as I consider issues of science and faith. The essays in this book rely on such a disparate set of epistemological methods that it is hard to read them critically.

Even though many countries and ideologies are represented, the book is not contextual enough. In these essays, the scholars spend more time wrestling with Western paradigms and their cultural or religious reaction to them than clearly presenting an indigenous position on science and faith. For example, they wrestle with the positions of scholars like Foucault, Barbour, and Freud. Most of the references are to Western authors and in English. This compromises the book’s true globalism. It also feels as if these authors are academics and not sincere adherents of the positions they are presenting. It reminded me

Book Reviews

what a treasure the ASA is with excellent scholars and sincere adherents.

The chapters are short and challenging enough to open up interesting discussion in a graduate-level course on science and faith. The book might also alert readers to present but less publicized questions for science and faith research.

Reviewed by Mark A. Strand, China Director, Shanxi Evergreen Service, Shanxi Province, China.



SCIENCE EDUCATION

SCIENCE AND CHRISTIAN EDUCATORS VIDEO SERIES by Gordon J. Glover. Series may be accessed via the *Beyond the Firmament* website (www.blog.beyondthefirmament.com/video-presentations/science-and-christian-education/) or youtube (www.youtube.com/glovergj).

Educators who teach in a Christian setting often find themselves in a dilemma when tackling the integration of modern science and the biblical text. On the one side, there is the mounting scientific evidence for an ancient biosphere characterized by common ancestry, and on the other, there is the proposition that if the big bang and evolution are right, then the Bible is wrong—about everything. Into this milieu steps Gordon Glover, who presents a clarifying perspective on the historical, philosophical, and scientific underpinnings of the current controversies between science and theology. In his sixteen-part video series, *Science and Christian Education*, he promotes a harmonious position that respects both the authority of Scripture and the integrity of the scientific method.

The impetus behind the series began when Glover, the author of *Beyond the Firmament* (reviewed in *PSCF*, December 2008), was approached by some of the educators at the private Christian school where his children attended, with questions about how to teach the natural sciences in the context of Christian worldview education. Realizing the lack of suitable resources, he independently produced this series of ten-minute videos that are accessed via the Internet. Although the series is not particularly academic or scholarly, the tone is both instructive and engaging, and the technical aspects, including effective visual illustrations, are well done. The prospective viewers extend far beyond the intended audience of Christian educators to include high school and college students, pastors, laypersons, or anyone who recognizes that “all truth is God’s truth” and is seeking to integrate the discoveries of scientific investigations with the tenets of Christian orthodoxy.

The first four lessons provide the philosophical foundations that are crucial, yet often lacking, in science and faith discussions. In the first lesson, entitled *Through a Glass Darkly*, Glover deftly explains how the core of the perceived conflict between science and theology is the hermeneutical and epistemological limit of humankind’s understanding. In lesson two, he delves into a description of the defining qualities of legitimate science versus

pseudoscience and distinguishes between methodological naturalism and philosophical materialism. Through his discussion of ultimate and proximate causality in lesson three, Glover explains how the Bible’s timeless theological truths are maintained even as modern science continually updates the technical details of our scientific understanding. He challenges viewers to let go of the false notion that the findings of science diminish God, and to embrace scientific discovery as a means to increase their understanding of how God operates in the natural world. In his fourth lesson, Glover defines and provides examples of “folk science” and then admonishes the writers of current Christian science curricula for their abandonment of good scientific methodological instruction. His use of creation science and flood geology models as examples of this neglect is particularly thought provoking.

In lessons five through eight, Glover shifts his focus to the physical sciences, including cosmology, astronomy, physics, and geology. He contends that those who accept young earth creationism but reject geocentrism are actually rejecting the model with the stronger biblical case. He also questions the usefulness of the young-earth paradigm in evaluating astronomical and geological data, and addresses the inadequacy of the current flood geology model to either explain the record of fossil succession or to produce useful scientific data. Some viewers may find his strong criticism of the young-earth paradigm in these lessons to be disconcerting. In the ninth lesson, Glover addresses the fallacies of the appearance-of-age argument that continues to circulate as an alternative interpretive paradigm amongst some Christian believers.

In lessons ten through twelve, the life sciences are highlighted with an emphasis on universal common descent and biological systematics. Although his discussions of modern-day classification schemes and molecular genetics may confound some viewers, most should be able to grasp the strength of the converging lines of evidence that support the theory of common ancestry as the only valid paradigm for understanding the life sciences. He also issues a challenge to those who promote anti-evolution agendas to evaluate their motivation for doing so.

In lessons thirteen and fourteen, Glover categorizes the intelligent design movement as a modern version of folk science. Using pseudogenes and natural weather systems as examples, he acknowledges the truth of intelligent design in a theological sense, but asserts that the design inference is incapable of answering scientific questions, and actually runs the risk of prematurely halting scientific investigation. Using a courtroom as his visual backdrop, Glover puts forth the contentious proposal that intelligent design is not a philosophy of discovery, but is rather a philosophy of ignorance that fails in helping students understand the facts of nature.

In lessons fifteen and sixteen, the emphasis of the series shifts to the nature and scope of biblical authority, the real crux of the faith and science dilemma for many Christian believers. Glover challenges all creationist camps to step outside their own paradigms and to honestly approach Genesis from its original cultural context. He summarizes the ancient Near Eastern origin of the Genesis creation accounts and describes the pitfalls of concordism. In his discussion of the principle of accommodation, Glover

explains how both the authority of Scripture and the integrity of the scientific method can be maintained.

With accommodation, we simply accept that God never intended to reveal scientific truths in the Bible that transcend culture, but rather kept all revealed scientific knowledge within the context of cultural beliefs. Therefore, we shouldn't expect God to fill the Bible with scientifically relevant trivia so that every generation of man, regardless of his scientific progress, can perform some objective test that confirms the truth of Scripture. Instead, we believe that God naturally accommodates his revelation to the scientific worldview of the original audience.

As a biology professor teaching at a Christian university, I am often struck by how difficult it is to present current scientific models and theories while upholding biblical authority in a manner that is credible and does justice to both. I have successfully used these video lessons in my undergraduate biology courses to broaden my students' perspectives on both the nature of science and the various interpretations of the history of life as revealed through God's creation. Although some of the ideas and interpretations presented are controversial among Christian believers, I commend this series as a venue for those who are seeking to construct a framework for integrating modern science with a Christian worldview.

The series is available for download at www.beyondthefirmament.com/videos/Education/

To purchase DVDs of the series, contact Gordon Glover at contact@beyondthefirmament.com.

Reviewed by Jane Beers, Assistant Professor of Biology, John Brown University, Siloam Springs, AR 72761. ♦

Letters

Book Review Response Letter

I appreciated Rolf Bouma's willingness to review my book, *Dominion Over Wildlife? An Environmental-Theology of Human-Wildlife Relations* (Eugene, OR: Wipf and Stock, 2009) published in the March 2010 issue of *Perspectives on Science and Christian Faith* (p. 62). Reviews constitute a gift of time and as such are to be treated with respect.

By the same token, reviewers have a responsibility to be sure their comments are accurate and in accordance with the goals of the book under review. Unfortunately, some of Bouma's statements failed to inform readers of the contours of my argument as well as the volume of evidence presented in support of my view on human-wildlife relations. I will highlight a few examples. First, he insinuated that I was unfair by calling my description of the Christian animal rights position, a "caricature." That is quite a claim, given that I engaged the Christian animal rights activists' evidentiary appeal to three separate intellectual domains, namely, Scripture, ethics, and science. In which section(s) did I mischaracterize their

view? Unfortunately, Bouma did not say, nor did he provide one specific instance. Second, his assertion that I failed to appreciate Linzey's "the greater serves the lesser" argument completely missed the point of my findings (which involved a detailed analysis of his interpretation of Scripture), namely, that Scripture provides no support for such a position. In fact, I go to great lengths to show that Christ, the perfect example of what it means to be a godly and obedient human, never served animals in a manner Linzey suggests. Third, Bouma's final paragraph leaves the reader with the impression that my Shepherdist position does not countenance limits on the human use of animals (despite my previous statements affirming my support for the protection of species). Such is clearly not the case as anyone who reads the final chapter would understand (cf. p. 172). I contend that Christians are obligated to treat animals in a way appropriate to their owner, namely, Christ. Ultimately, Bouma's suggestion that I engage the thought of Rolston's theocentric view failed to consider that if my exegesis, ethical reasoning, and use of scientific evidence was correct, then obedience to God's will as revealed in Scripture and nature is about as theocentric a view as any Christian could hope to obtain.

Regrettably, Bouma seems to have been caught up in reacting to theological labels rather than in assessing my treatment of the biblical evidence, the only infallible source for Christian doctrine. Maybe that is why he considered my book more of an apologia rather than a theology. Apparently, he skipped chapter 1 (p. 14f), in which I explained why the book focused on the consumptive uses of wildlife: (a) it avoids anachronisms and speculation because the Bible speaks of these activities; and (b) if humanity's consumptive use of wildlife violates God's perfect will, as the Christian animal rights activists claim, then a whole host of human uses of animals are in danger of being immoral as well. To my knowledge, very few environmental theologies provide such a sustained review of the morality of a concrete, real-world practice (namely, hunting, trapping, and fishing) followed by suggestions on how Scripture's answer to consumptive use of wildlife may provide guidance on how humans should utilize the environment. Bouma certainly has a right to disagree with my evaluation of Scripture, ethics, and science (he offered no comment concerning the third); I just wish he had taken the time to provide some concrete examples of where he saw error.

Stephen M. Vantassel
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Humans: The Mean between Science and God

Mary L. VandenBerg, in "What General Revelation Does (and Does Not) Tell Us" (*PSCF* 62, no. 1 [2010]: 22), wrote,

The first issue mentioned was how much concordance there is between what the Bible and science tell us about the nature and operations of the physical world. The second issue, and the focus of this article, was how much concordance there might be between what the Bible and science tell us about God.