



HEAT: How to Stop the Planet from Burning by George Monbiot. Cambridge, MA: South End Press, 2007. xx + 278 pages, index. Hardcover; \$22.00. ISBN: 9780896087798.

Published a year earlier in the UK, this book now appears in a US edition ("printed and bound in Canada, by union workers"), with a new foreword, and a 3-page list of American "organizational resources addressing the impact of climate change" that includes a few interfaith groups (but not the Au Sable Institute of Environmental Studies). The cover image by E. Burtynsky shows a river glowing fiery red against the blackened landscape of Sudbury, Ontario. The author (born 1963) read zoology at Brasenose College, Oxford; did investigative journalism in Indonesia, Brazil, and Africa; and has written several books on environmental and political causes. He is Visiting Professor of Planning at Oxford Brookes University, UK. Here in *Heat* his thesis is that catastrophic climate change can only be averted by reducing greenhouse gas emissions by 90%, a reduction that can nevertheless be accomplished.

The foreword, introduction, and first three chapters (with 2 graphs) set out the problem. Fossil fuels have enabled the industrialized countries to raise their standard of living enormously, but at the price of a looming change in climate comparable to that at the time of the Permian mass extinction. Politicians have failed to act, because of ignorance, or disinformation from "the denial industry" (chapter 2). The large cost of effective actions, not overwhelming compared to expenditures such as subsidies or warfare, would amount to postponing the next level of prosperity by only a few years in growing economies. A rationing scheme is feasible: individuals get units of entitlement to emit carbon, to be exchanged, together with the payment in money, when they buy electricity or fuel.

In the next seven chapters (not illustrated), details are worked out on how to accomplish the 90% reduction: in home heating; in electricity production from fossil and nuclear fuels, and from micro-generation; in transport, urban and regional, and trans- and intercontinental; and in retailing and cement manufacture. The final chapter "Apocalypse Postponed" urges readers to press politicians from talking about the problem to taking effective action. Combining information from a variety of reliable sources with his own insights, Monbiot argues convincingly that these big reductions are feasible technically and economically, yet the political will is essential. At the back of the book are the 1,011 notes the text refers to, which cite mostly internet sources, with a few books and articles in peer-reviewed scientific journals. The index fills 6½ pages.

Monbiot has a forceful style that keeps the reader's interest in the quite technical subject matter. However, some expected references do not appear, for example, John T. Houghton, *Global Warming: The Complete Briefing*, 3rd ed. (Cambridge, UK: Cambridge University Press, 2004). Nor does S. Pacala and R. Socolow, "Stabilization Wedges: Solving the Climate Problem for the Next Fifty Years with Current Technologies," *Science* 305 (2004): 968-72, which identifies essentially the same ways as *Heat*, but with more emphasis on changes in agriculture and for-

estry, which Monbiot rather belittles. Somewhat credible arguments of academics who dispute the link between carbon dioxide and climate change, like Richard Lindzen of MIT, are not discussed and refuted. (See Royal Society at <http://royalsociety.org/page.asp?id=6229>). The detailed chapters focus on the United Kingdom, with British words unfamiliar to Americans. Poorly lagged [insulated] houses are less an issue in America, where air conditioning is a greater concern. Crossing the country by coach on motorways [by bus on freeways] is more feasible in Britain than in the United States and Canada.

The author maintains a high moral tone, with a real concern for the plight of the disadvantaged in the wealthy countries and particularly in the poor ones. Organized religion and the church are ignored in the text, with belief not being regarded positively: "A faith in miracles grades seamlessly into excuses for inaction." One author in "the denial industry," Arthur B. Robinson, is identified as a "Christian fundamentalist." The inspirational text undergirding the writing is Christopher Marlowe, *Doctor Faustus* (1604). An evangelical treatment of this subject, also oriented toward Britain, is given by Nick Spencer and Robert White in *Christianity, Climate Change and Sustainable Living* (London: SPCK, 2007). Nevertheless, by reading Monbiot's *Heat*, anyone wanting good environmental stewardship will benefit, because this book shows the way to a definite goal for carbon reductions to control global heating.

Reviewed by Charles E. Chaffey, Adjunct Professor of Natural Science, Tyndale University College, Toronto, ON, Canada M2M 4B3.

EXPOSED: The Toxic Chemistry of Everyday Products and What's at Stake for American Power by Mark Schapiro. White River Junction, VT: Chelsea Green Publishing Company, 2007. 224 pages. Hardcover; \$22.95. ISBN: 978193392158.

Mark Schapiro, editorial director of the Center for Investigative Reporting, has written extensively on foreign affairs. His work has appeared in *Harper's*, *The Nation*, *The Atlantic Monthly*, *The New York Times Magazine*, and other publications. He has been a correspondent for Frontline/WORLD, NOW with Bill Moyers, and public radio's Marketplace. The publisher of this book is dedicated to expanding the politics and practice of sustainability. Schapiro's book is definitely written with this goal in mind.

The main premise of the book, which is summarized in chapter one, is that the United States is no longer the worldwide leader in environmental protection. In the 1970s and 1980s, an American mix of scientific rigor and legal muscle gave birth to a body of environmental regulation that was seen as a model for the rest of the world. Back then, America wrote the rules and the rest of the world followed. But leadership in the arena of environmental protection has switched in recent years. It is the European Union that is asserting new priorities that are far more protective of citizens' health and the environment than those in the United States. The European approach is based upon what is called the precautionary principle, and the result is that many substances that are in wide use in the United States are now banned in Europe. Not only are American citizens less protected from toxic substances than Europeans, this difference in perspective is also placing the American economy at risk. Regional economic

powers such as China, India, and Brazil are now looking to Brussels rather than to Washington for new alliances, trade agreements, and sources of environmental inspiration. This shift in power will, according to the author, most likely have long-term effects on America's global competitive edge. Specific examples of "the toxic chemistry of everyday products" are presented throughout the rest of the book.

In chapter two, the toxic chemistry behind the American cosmetic industry is discussed. Schapiro cites several reports which suggest that common substances in cosmetics are potential carcinogens, endocrine-disrupting chemicals, mutagens, and reproductive toxins. Compounding the risk for the American consumer is the fact that the Food and Drug Administration has no authority to regulate the ingredients in cosmetics. The cosmetic companies, not the FDA, are responsible for monitoring the safety of their products, but according to the author, "89 percent of cosmetics on the market today contain ingredients that have not been assessed for safety either by the FDA or by the industry" (p. 30). Much of the world is now departing from the American laissez-faire approach to potential cosmetic hazards and is instead turning to Europe's more rigorous way of assessing product safety.

The potential health hazards of a family of polyvinylchloride plastic softeners called phthalates are presented in chapter three. While phthalates have been banned from toys in Europe, they are still present in many toys and other plastic products purchased by American consumers. The failure of the United States to ratify a global treaty called the Stockholm Convention on Persistent Organic Pollutants is lamented in chapter four. Genetically modified American crops, that are not welcome in Europe for a variety of reasons, are the subject of chapter five. Chapter six exposes the opposition of US industry to end-of-life product principles that are presently being implemented in Europe. Other examples of America's failure to provide leadership in the arena of consumer and environmental protection, including the Bush administration's refusal to sign the Kyoto Protocol, are cited and discussed in chapters seven through nine.

While the major premise of Schapiro's book is certainly valid, the accuracy of some of his specific claims may be called into question. Several relatively minor inaccuracies make this reviewer wonder if other, more major, misrepresentations may have been included. For example, on page 106, the author states that "the Illinois river flows past the historic city of Springfield, Illinois, birthplace of Abraham Lincoln." In this one statement Schapiro is wrong on two counts: Springfield is at least forty miles from the Illinois River and although Lincoln lived in Springfield, he was born in Kentucky! In the same chapter, when discussing corn cross-pollination, he states that "seeds can fly from the tassels, borne by the wind, from as far as six miles away" (p. 93). Anyone with even a little botanical knowledge should know that pollen flies from the tassels, not seeds. To be fair to the author, the copy of the book received for review was an "uncorrected proof," so hopefully these and other inaccuracies were corrected prior to publication.

One other concern is that most of the endnotes included at the end of the book are citations of conversations the author had with various individuals. Very few

scientific publications are cited in support of the author's claims. In spite of these shortcomings, the overall message that Schapiro is declaring is a message that American lawmakers, governmental officials, and citizens need to hear.

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ETHICS

THE STEM CELL DEBATE by Ted Peters. Minneapolis: Fortress Press, 2007. 122 pages, notes. Paperback; \$7.00. ISBN: 9780800662295.

The Stem Cell Debate shows one of the risks and many of the fruits of writing bioethics. In the first seventeen pages, Peters orients the ethical discussion with the basic science of stem cell research. The description is well informed with the caveat that whatever is well informed today can be quickly dated. Peters was aware that induced pluripotent stem cells (iPS) were being pursued from adult cells but states that they are not possible, a reasonable assessment at the time of the book's printing in early 2007. Since then Kazutoshi Takahashi et al. has published in the November 2007 issue of *Cell* (pp. 861-72) his team's remarkable success with iPS. Induced pluripotent stem cells from adult cells seem to be viable after all. This does not render Peters' thoughtful book irrelevant. While embryo sacrifice may not be the only source of human stem cells, there are still many other current and projected practices that sacrifice embryos. The book remains a helpful guide for a whole series of questions that remain for how Christians should treat embryos in research, in pre-natal genetic diagnosis, and in a myriad of other developing technologies.

Peters helpfully describes the status of embryos according to three major theological perspectives. One emphasizes embryo protection, a second the protection of nature, and a third the duty to help fellow human beings medically. He explains each view with care and offers a fair statement of challenges for each. At times he does lump evangelicals under one version of the first perspective: that from fertilization every human embryo is already a fellow human being. Actually, despite repeated attempts by a number of evangelical organizations and presses to enforce one position on this topic, there are many evangelicals that have remained convinced of the historic Christian view, that a fellow human being is not present until a point further along in pregnancy than fertilization. On the second framework, protecting nature, Peters describes President Bush's Council on Bioethics as the most influential source. That view is championed by Leon Kass with the "wisdom of repugnance" as the crucial guide. Then Peters examines the third framework, which makes a theological case for an obligation to develop technology that heals.

Peters finds the third view the most persuasive as he works consistently out of his proleptic theology. For Peters, the key to understanding human beings is not what we have been, but what God plans for us to be. The standard is not Garden of Eden; it is, rather, the new heaven and the new earth that God promises in the Revelation to John. Our essence as human beings is not in

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where we started, but in where God is taking us. Christ takes precedence over Adam, grace over sin, the new world over the old one. "Jesus rose with scars in his hands and his side, memories of his previous finite experience with human fallenness. Yet these scars were healed. Resurrection heals ... Science itself is not salvific, to be sure; but by relieving human suffering and enhancing human flowering, medical science fragmentarily incarnates ahead the grand healing that is God's eschatological promise" (pp. 98-9).

Peters also develops an argument that human dignity depends on our relationship with God and one another and hence starts at implantation. It is at that point that beginning human community establishes human dignity.

The book is direct, lively, and fair to differing views on a topic easily obfuscated. Further, it is remarkably concise for what it covers, just 122 pages in a small-dimension format. It would be an excellent choice for a church discussion group or other lay audience, as well as for professionals getting oriented to the discussion.

Reviewed by James C. Peterson, R. A. Hope Professor of Theology, Ethics, and Worldview, McMaster University Divinity College and Faculty of Health Sciences, Hamilton, ON L9G 4C3.



GENERAL SCIENCES

MIND, LIFE, AND UNIVERSE: Conversations with Great Scientists of Our Time by Lynn Margulis and Eduardo Punset, eds. White River Junction, VT: Chelsea Green Publishing Company, 2007. 352 pages, indices. Paperback; \$21.95. ISBN: 978193392431.

Thirty-six scientists across a wide range of disciplines are interviewed by three notables: (1) Lynn Margulis, noted biologist of the University of Massachusetts at Amherst; (2) Eduardo Punset, host of the Spanish TV popular science program *Redes*; and (3) David Suzuki, the well-known Canadian scientist, environmentalist, and media personality. In each case, the interviewers seek to have scientists explore those aspects of their scientific works that they find most interesting. The result is a set of highly readable, engaging, and thought-provoking essays on a wide array of topics that are still not well understood. For example, five scientists (Nicholas Mackintosh, Robert Sapolsky, Jane Goodall, Jordi Sabater Pi, and Edward O. Wilson) talk about culture before humans existed based on their research with ants, bees, termites, and chimps. They also study the nature of intelligence and cognitive processes in humans and other animals.

A fascinating set of three interviews explores the measurement of beauty, the science of happiness, and the etiology of psychopaths. Other topics in this well-chosen and tightly edited set of interviews include music, dreaming, genetics, the body-mind problem, immortality, biospheres, evolution, bacteria, amoebae, and matters at both subatomic scale and cosmic scale.

Quite a few of the interviewees are asked to speculate about matters that one could class as transcendent, and the answers are revealing about human nature and human knowledge. Responses include those hostile to purpose or meaning in the world such as the late Stephen J. Gould,

Richard Dawkins, Daniel Dennett, and Lisa Randall. Also interviewed are scientists who accept the possibility of transcendence including Paul Davies and Jane Goodall. What is highly evident throughout the volume is the supreme confidence that these scientists have in science itself and its ability to unravel the mysteries of life and the cosmos.

Several scientists advance the view that a final theory that explains everything will one day be found, surely a faith statement if there ever was one. In this sense, we are all deeply metaphysical beings. The book makes for interesting reading about a wide range of topics; it provides background for how and why scientists investigate certain questions using scientific methods.

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HEALTH & MEDICINE

THE SPIRITUAL BRAIN: A Neuroscientist's Case for the Existence of the Soul by Mario Beauregard and Denyse O'Leary. New York: HarperCollins, 2007. 368 pages, index. Hardcover; \$25.95. ISBN: 0060858834.

Mario Beauregard is one of the few scholars in neurology who is not a reductive materialist, meaning that he does not reduce all experiences to their underlying material construction and constituents. Beauregard contends that reductive materialists, such as Richard Dawkins and Daniel Dennett, to name two more-outspoken representatives, are mistaken to view the mind as reducible to the brain. He has studied and researched neurology for many years, and is convinced that counter to current opinion, a mystical state of consciousness truly exists. He has written this book in tandem with journalist Denyse O'Leary in order to discuss the significance of his research findings on mystical experiences and their irreducibility. Beauregard attempts to demonstrate that the materialist nondistinction between mind and brain is in error, and instead asserts strongly that they are two distinct entities. Mind truly exists, and so does the brain. Beauregard could be construed as arguing that the mind is indeed dependent upon the brain, but is also emergent from it. Emergence from the brain, in this sense, entails that the mind has qualities that are not reducible to its substrate (i.e., the brain) alone.

Beauregard seeks to establish three main ideas: (1) that the nonmaterialist approach to the human mind contains more explanatory power than does the reductive materialist one; (2) that nonmaterialist approaches to the human mind are more productive in terms of practical benefits than are reductive materialist ones; and (3) that there exists the potential for spiritual experiences which can radically transform lives via contact with a reality outside of material forces. In his argument Beauregard notes that neural synapses within the brain operate according to quantum physics, and not according to classical (Newtonian) physics, and that therefore materialist accounts of the mind and brain are out of step with current physics and thus do not advance research. Moreover, Beauregard posits that materialism leads to hypotheses that can never be tested, and thereby undermines scientific neural research.

The second chapter addresses why it is nonsensical, scientifically, to speak of a “God gene” as directing perceived spiritual sensations. Chapter three disputes the notion that there is a “God module” within the brain that accounts for religious visions, sensations of ecstasy, and related phenomena. Chapter four critically engages the not-so established scientific work of Michael Persinger, who attempted to demonstrate that spirituality could be induced by a “God helmet” which specifically stimulated the temporal lobe in differential increments causing quasi-spiritual sensations. Chapter five is probably the strongest one in which Beaugard expounds upon what, exactly, the “mind” is. The other chapters develop notions of how the mind acts upon the brain, as supported by Beaugard’s own research.

It should be noted forthrightly that the intention of this book is *not* to argue that evolution did *not* occur. Rather, Beaugard intends to raise questions regarding whether a fully reductive, naturalistic process of human evolution is tenable without invoking meaning, purpose, direction, or design. This Beaugard does by analyzing the seemingly inherent spirituality within humans. Beaugard notes that while the logical extrapolations of Charles Darwin’s metascientific evolutionary paradigm temporarily displaced the special status of human beings within the cosmos, modern biology and neuroscience seem to be restoring humans to a semblance of their former lofty position. Beaugard advocates that the only strong argument against purpose and design being present within the evolutionary epic of the cosmos is the advancement of the hypothesis that our universe is an accidental success amid a proverbial limitless number of other failed universes. This position currently has little scientific support.

Beaugard concludes with the contention that though studying what occurs within people’s brains cannot directly prove or disprove spiritual experiences (or, for that matter, the realities that said experiences point to), they nonetheless can give credence to such extrapolations. I heartily advocate the purchase of this book.

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OUR DAY TO END POVERTY: 24 Ways You Can Make a Difference by Shannon Daley-Harris and Jeffrey Keenan. San Francisco, CA: Berrett-Koehler Publishers, 2007. 216 pages, index. Paperback; \$14.95. ISBN: 9781576754467.

This book is for those who are interested in making a difference in ending extreme poverty in our world. The authors’ goal is very practical and is described in their introduction:

This book doesn’t give extended analyses or mountains of data relating to all the complex issues surrounding poverty. We expect that you already know enough that you too find it intolerable. What you will find here is what you can do, starting today, to help end the long night of extreme poverty that more than a billion people in the world now endure.

The two main authors have experience in dealing with poverty-related issues. Shannon Daley-Harris has worked for the Children’s Defense Fund and the National Council of Churches on issues related to poverty and children. Jeffrey Keenan is a strategic initiatives manager with

Adobe Systems and looks at these issues from the perspective of someone trained in business.

The topics are based on the United Nations Millennium Development Goals. Each of the twenty-four chapters is related to one or more of these goals. Much attention is paid to Goal 1 (eradication of extreme poverty), Goal 2 (universal primary education), Goals 5 and 6 (health issues), and Goal 7 (ensuring environmental sustainability).

Each chapter is short, about six to ten pages, and deals with a single topic. The chapters are organized by the issues a reader might face as he or she goes through a typical day. For example, the section on morning starts with breakfast and discusses hunger issues. It then moves on to getting the kids to school and discusses primary education. Each chapter starts with a general background discussion of the topic which is followed by four sections of recommended actions: (1) lists things that can be done to learn more about the topic; (2) shows how the reader can contribute (both time and money) to groups working on this problem; (3) discusses how to serve others in helping to solve the problem; and (4) describes how to live on a day-to-day basis while helping in this area.

The authors show real creativity in their suggestions. Many groups have suggested that we conserve water. If you do so, one of the results will be a lower water bill. They suggest you keep track of how much you save on water and give this amount to a nonprofit agency that is working in the water conservation/purification area. These sorts of creative suggestions are what set this book apart from many others. For example, while it is good for this reviewer to conserve water at his home in Texas, it is hard to see how this directly helps someone in North Africa. However, by giving the money I save while also saving water, I can help poor villagers in North Africa get access to better and cleaner water.

This book is not written to be read at one sitting. It should be read one chapter a day, so that the reader can think about the suggestions. There are more than four hundred specific recommended actions, and the authors do not expect anyone to try to do them all. Although this book is not written from an explicitly Christian perspective, it is Christian friendly. A number of the suggestions are for the reader to involve his or her worship community in doing a particular action. Given the politically charged nature of poverty and environmental issues, most readers (like this reviewer) will disagree with some of the recommendations. On the other hand, this book has so many very good recommendations, it is worth reading. The authors have clearly met their goal of providing many suggested actions that the reader can take to help fight poverty.

This book is not aimed directly at scientists and engineers. It will appeal to Christians from any background who are interested in making a difference in helping poor people. However, some of the things we can do to help eradicate poverty do have scientific or engineering implications. The chapters on health, housing, water, transportation, and energy all contain suggestions that could probably best be implemented by people who have a technological background.

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MATHEMATICS

THE ARCHIMEDES CODEX: How a Medieval Prayer Book Is Revealing the True Genius of Antiquity's Greatest Scientist by Reviel Netz and William Noel. Philadelphia: Da Capo Press, 2007. 313 pages. Hardcover; \$27.50. ISBN: 030681580X.

Of the Palm Sunday triumphal entry of Jesus into Jerusalem, Scripture says that had the people remained silent, the very rocks would acclaim the King of kings. What a description! Beyond poetry, is such a thing possible? William Noel, a museum curator, and Reviel Netz, a mathematical historian, describe a singular instance of this phenomenon, albeit with respect to Archimedes rather than with respect to the Messiah. Rather than rocks crying out, the mildewed parchment pages of an old prayer book—which the scribe, John Myronas, finished copying in Jerusalem, upon recycled pages of an older manuscript, on the day before Easter 1229—cry out the ideas of and give praise to the old Greek master geometer. How so?

Noel and Netz write alternating chapters in a detective style about the story behind an old book bought at auction by a reclusive patron of the arts for \$2 million in 1998. Noel documents the book's physical transformation through time. Netz itemizes the book's mathematical significance, ultimately concluding that Archimedes may be the father of combinatorics—as well as being an even greater giant than we had previously imagined—upon whose shoulders Newton and Leibniz were able to discover the calculus.

The book begins with the story of Archimedes writing letters on papyrus scrolls to several natural philosophers, describing solutions to a variety of geometrical conundrums. Over the years, copies of these letters were made, ultimately onto the new medium of sheaves of bound parchment, which in turn were copied according to demand, resources, and need. In time, all but one of these was lost. This last copy somehow survived the 1204 Crusader sack of Constantinople. A few years later, it too was seemingly destroyed. Its binding was undone, its pages scraped of words and figures. Then its pages were cut in half and stacked, to be used as smaller-sized pages of new books. One of them was Myronas' prayer book, which was used in services for three centuries.

In 1906, a philologist stumbled upon the prayer book and recognized the faint writings of Archimedes beneath the prayer script. He carefully photographed pertinent pages and translated what he could. Thereafter the book disappeared again, and ultimately wound up on the auction block. By this time, the book was in extremely poor condition. The new owner had it restored and studied with today's technology. If you wish to learn first-hand the details of this codex, this is the book to read, for the authors are the team leaders who restored and translated this manuscript—or palimpsest, as it is called.

The authors narrate their discoveries in a lively style. For example, Noel describes his initial feelings about working on the codex as those of "a nervous puppy trying to come to grips with the biggest fish of my little career"

(p. 12). Netz describes his feelings while first reading through an especially clever argument of Archimedes: "'By God' you exclaim, 'he is actually going to prove this precisely, no fudges made!'" (p. 47). The book includes copious exchanges of e-mail during the discovery process. For my taste, the authors could safely prune some of these personal insights without lessening the impact and flow of their story to the reader.

If you want a clear, first exposure to Archimedes' mathematics, I recommend Stein's introduction.¹ Next read this book. Archimedes, like Newton, is notoriously cryptic. Indeed, as Netz points out on page 237, Arab translators of Archimedes rewrote his works for increased clarity. Yet Netz—as he should, in the context of his chapters of discovery—takes us through the cryptic parts. Sometimes the reader can be overwhelmed by the underlying mathematical arguments cloaked in old Greek archaic conventions. Such style is the two-edged strength and weakness of the mathematical historian.

As I read this book and wondered how to review it, I realized that the book is a review of Archimedes' work. From the experience of reading critics of his own works, C. S. Lewis, in an essay "On Criticism," admonishes any reviewer including Noel and Netz (and me, too):

Nearly all critics are prone to imagine that they know a great many facts relevant to a book which in reality they don't know. The chances of their being right are low, even when they are made along sensible lines.²

At times, out of enthusiasm, Netz seems to jump to conclusions too quickly. For example, on the basis of the names Pheidias (Archimedes' father) and Archimedes, he concludes that Archimedes' father was an astronomer, and his grandfather was an artist (pp. 36–7). Why not phrase the conclusion as a whimsical guess instead? On page 147, he says that Archimedes codified the dictum that the universe could be understood by modeling it through mathematics. Yet Aristotle championed this idea long before Archimedes.³ Netz concludes: "Archimedes is the most important scientist who ever lived" (pp. 29, 284). Wait a minute! Natural philosophers are not baseball players. There is no home-run king among those who study the universe. It is enough to say that Archimedes was great.

Finally, this book celebrates ten years of work and is a charming tale of goodness. Experts in old manuscripts and imagery analysis gave freely of their time on this project. The thrill of working on revealing some of the lost works of Archimedes was reward enough for their labor—a telling tribute to the enduring genius of Archimedes. For whom else would people give like service?

Notes

¹Sherman Stein, *Archimedes: What Did He Do Besides Cry Eureka?* (Washington, DC: The Mathematical Association of America, 1999).

²C. S. Lewis, *On Stories and Other Essays on Literature*, ed. Walter Hooper (Orlando, FL: Harcourt Brace Jovanovich, 1982), 132–3.

³Aristotle, *On the Heavens*, trans. W. K. C. Guthrie (Cambridge, MA: Harvard University Press, 1958), Book I, Chapter I, p. 263.

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EQUATIONS FROM GOD: Pure Mathematics and Victorian Faith by Daniel J. Cohen. Baltimore, MD: The Johns Hopkins University Press, 2007. 242 pages, notes, bibliography, index. Hardcover; \$50.00. ISBN: 0801885531.

Crediting religious faith and ecclesiastical affiliation as significant motivating and contextualizing factors has become commonplace in the history of science. It is still a relative novelty in the history of mathematics. The 2005 book *Mathematics and the Divine: A Historical Study* (see www.maa.org/reviews/MathDivine.html), consisting of thirty-five diverse articles on the relation of religion and mathematics, is a substantial exception. The book we are now considering is another. It is a revision of the author's prize-winning 1999 PhD dissertation written at Yale University under historian of Victorian science Frank Turner.

Daniel Cohen's training is in history of religion and history of science, with a particular focus on aspects of nineteenth-century British and American mathematics. This book kicks off a new series, the Johns Hopkins Studies in the History of Mathematics. While it fails to engage secondary literature published since 1999, it nevertheless draws upon and analyzes a wealth of Victorian primary source material—books, articles, personal correspondence, and sermons. Cohen breaks new ground in his treatment of nineteenth-century English-speaking mathematicians, bringing it more in line with what is typically done in history of science.

Cohen's main thesis is that pure mathematics in mid-nineteenth-century England and America (primarily mathematical logic, along with some work on algebra and number systems) owes its origin to neo-Platonic, Kantian, and transcendental philosophies of mathematics as well as to religious idealism seeking to promote toleration. Only later in the century, as professionalization became a greater concern, did British mathematicians officially begin to distance themselves from their earlier grand philosophical and theological positions. Taking a more modest and secular approach to mathematics, the door was left open to anti-religious agendas for symbolic logic that went far beyond merely bypassing theological justification and approbation for mathematical truths.

After an opening introduction that nicely summarizes the aims and outline of the work, Cohen devotes five chapters to developing his book's thesis. The first chapter sketches some historical sources and precursors for the early Victorian perspective on mathematics, chapters two through four discuss the work and outlook of three pivotal mathematicians (Benjamin Peirce, United States; George Boole, Ireland; and Augustus De Morgan, England), and the final chapter argues that the trend toward professionalization redirected the British outlook on mathematics during the last half of the century.

Cohen points out that many early-Victorian thinkers succumbed to an almost giddy neo-Platonic vision of mathematics. Chapter Two, "God and Math at Harvard: Benjamin Peirce and the Divinity of Mathematics," makes this abundantly clear. Pure mathematics transcends the mundane world of sensory experience, rising to sublime heights of spiritual truth in its equations and abstract mathematical patterns. Mathematicians grasp and formulate the most intimate divine truths in a way that cannot be matched by the divisive dogmas of sectarian theologies.

At his funeral in 1880, Benjamin Peirce was eulogized by a Harvard colleague as one who, being a first-rate mathematician, knew "more about the realm of spiritual being than anyone else who ever trod the earth, that he beheld God, entered into the Divine mind, drank in truth from its living and eternal fountain, as no other human being ever did" (pp. 42–3). Quite a claim, considering the potential merits of other candidates one might propose, such as Moses or St. Paul or St. Augustine! Peirce's vocation and faith were essentially one; mathematics is a religion in its own right. "His theology deemphasized the core dogmas of Christianity and indeed the figure of Christ himself, settling instead on a broad monotheistic faith in which the quest for mathematical truth and the quest to know God were identical. Benjamin Peirce saw his work with equations as a way to access the heavenly realm, and would occasionally add the exclamation 'Gentlemen, there must be a God' to his mathematical demonstrations" (p. 43). For Peirce, enthralled by the divine character of mathematics, there was "little need for the intermediary of Christ. God would be revealed through equations" (p. 75).

The centerpiece of Cohen's book is the genesis of mathematical logic. Cohen claims to have uncovered the "hidden story" behind the origin and rise of symbolic logic in Great Britain in the religious motivation of its creators. Boole and De Morgan, he notes, did not share the secular agenda of twentieth-century logical positivists who used symbolic logic to demolish various metaphysical and religious perspectives as meaningless. Instead, logic was a tool they could use to rise above rigid orthodoxy and sectarian conflict by challenging certain dogmatic claims. Logical activity was to be pursued in the service of true ecumenical religion rather than as a way to undermine all religion.

Cohen's treatment of Boole and De Morgan gives the reader a broad and detailed intellectual context in which to place their work, and it helps one understand what religious ideas may have motivated each logician to develop and apply his mathematical ideas. Cohen is not the first to point out this aspect of the history. MacHale's 1985 biography *George Boole: His Life and Work*, for instance, does something similar, and at times is more nuanced and cautious in its use of questionable source material. Yet Cohen's presentation gives us a more full-blooded picture of the overall context in which Boole and De Morgan actually worked than that provided by the typical history of mathematics narrative. Such works tend to concentrate so heavily on technical details that the reader often loses track of the country and century in which the ideas arose. An internalist approach gives us too little history, is often anachronistic, and is usually out of touch with current trends in historiography, where context is more than window-dressing.

Cohen's monograph, by contrast, tells a well-written and interesting story about the mathematics as part of a bigger whole. Yet I should note there is something missing here that was present in the narrower narratives. One reads Cohen's book in vain to learn about the trends in mathematics or logic that fed into the new developments undertaken by Boole and De Morgan. This seems very peculiar to me. Why is there no discussion of the revival of deductive logic set in motion by the work of Richard Whately, William Hamilton, and others as a backdrop to

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that of Boole and De Morgan? Why is there no discussion of the rise of a more formal analytic approach to mathematics and algebra promoted by members of the Cambridge Analytical Society and others prior to the 1847 publications by Boole and De Morgan on symbolic logic? These antecedent trends provide the specific logical and mathematical contexts for evaluating their work and are just as relevant as the religious and philosophical and educational contexts that Cohen so artfully discusses. Cohen seems to think the broader epi-mathematical context explains everything of historical importance for the mathematics that ensues, so he can afford to neglect the ways these new developments are situated within the mathematics and the logic of the time. He writes as if Boole's and De Morgan's desire to rise above sectarian squabbles and promote a more tolerant attitude toward religion is motivation enough to explain their logical discoveries. This surely overstates the case; much more is needed to flesh out the full picture and demonstrate just why their innovations are so important. Perhaps technical mathematics and logic lie outside Cohen's particular expertise, but then he should indicate just what he is bracketing out and not leave the impression that what remains is a full analysis of all relevant factors. I am not requesting a return to old-fashioned history of mathematics, just more attention to the mathematics and logic involved. In fact, I would even welcome Cohen's approach applied to the technical trends themselves: identify the underlying worldviews and philosophical outlooks that drive and give them meaning, too.

Aside from this criticism of the book's scope and intent, I found this a well-researched and engaging book, one that breaks through the traditional mold for writing history of mathematics. It conveys a wealth of information about some well-known mathematicians, and it challenges modern stereotypes about the relation between mathematics and religion. Not all readers will agree, but I find it also contains an instructive cautionary tale about the dangers of Christian Platonism, which still attracts many mathematicians today: taking mathematical ideas to be divine may have a pious motivation, but such a viewpoint has within it the seeds of a full-fledged anti-Christian religion stemming from its pagan pedigree.

Who would benefit from reading such a book? Certainly anyone interested in the topic of science and religion. Those of us with a special interest in history of mathematics will likely want our own copy of the book. It is one of the few examples we have of how mathematics and religion can be related in a scholarly work.

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ORIGINS & COSMOLOGY

ORIGINS: A Reformed Look at Creation, Design, and Evolution by Deborah B. Haarsma and Loren D. Haarsma. Grand Rapids, MI: Faith Alive, 2007. 255 pages. Paperback; \$13.25. ISBN: 978159252276.

Origins: A Reformed Look at Creation, Design and Evolution is a theological and scientific analysis of the variety of creation-views held by evangelical Christians. Examining these views from the cosmological, geological, and biological

perspectives, it provides a clear, concise introduction of the issues in a manner that is accessible (and of interest) even at the high school level. Its impact, however, will extend far beyond the high school level. This book provides such a clear and broad perspective on the various approaches that it will be of value even to those who have been thinking about origins for many years. Each chapter concludes with a fine set of discussion questions and several references. Interspersed throughout the narrative are text-boxes which refer the reader to the book's excellent website for a more in-depth analysis of a particular topic.

The book begins with an outstanding overview of the scientific process, how worldviews influence that process, and the harmony that ought to exist as we allow both God's Word and God's world to inform us about creation. The Creator speaks to us, the authors continually remind us, not just through the words of Scripture, but also through the "words" of creation itself. By using extensive scriptural references, and by writing in a tone that is truly worshipful, the narrative succeeds in fostering a sense of unity in the midst of Christian diversity. It is highly sensitive to, and deeply respectful of, the diverse viewpoints that exist within evangelical Christianity. Although written by physical scientists, the biological data are covered well and all of the data are continuously analyzed in light of theological considerations.

In order to put the many influences on the origins question into perspective, the book does a very fine job of comparing our current situation to the Galileo affair of four hundred years ago. The authors show that in Galileo's day scriptural proof-texting, political maneuvering, over-reliance on inadequate scientific and religious traditions, and super-egos, which obscured access to God's truth, all had an impact on the controversy. History, they aptly show, is repeating itself in today's world as well.

I especially appreciate their chapter on the scientific process. Here they clearly lay out the three different levels at which scientific data are interpreted: experimental, observational, and historical. Each, they show with very clear examples, is a valid way by which the scientific process enables us draw to conclusions about the natural world. They show that we cannot always do experiments, but that data based on other ways of knowing are equally valid.

Although the authors are very sensitive and highly respectful of diverse views, they nonetheless do not mince words when it is clear to them that certain approaches are inconsistent with scientific data and/or biblical interpretation. The earth is not young and life has been evolving, as they see it, for a very long time. Given the thorough nature of their analysis and the gentle way in which they explore the options, it is difficult to imagine anyone objecting to their style. So cautious are they in their desire to help the reader reach his or her own conclusions, it seems at times as though the book does not take a position on an issue. But it does, and they let the analysis speak for itself. This is writing at its best. I think this is especially true in their analysis of the Intelligent Design movement.

This book is an outstanding resource, especially for young people in high school and college who are trying to put their growing knowledge of science into the context of the traditional evangelical faith. Personally, I know of no book that does this better or that I would recommend more highly.

The one limitation of the book may well be its greatest strength. It is put out by the publishing arm of the Christian Reformed Church. The authors make it clear throughout that they are addressing the issues from within the Reformed tradition. Indeed, two of the three appendices are documents that are denominational position papers. As I see it, the fact that they were unabashedly writing from within a particular theological tradition allows them to explore issues in greater depth than they would be able to do if they were writing more generically. As a person highly influenced by a different theological tradition (Wesleyan/Arminian), there were times when I wished that those in my tradition had a book as powerful and carefully laid out as this one is. I imagine that there will be others from other traditions who will feel a need for their own special theological version of this wonderful book as well.

I have been waiting for a book like this for a long time. I have wanted a book that clearly lays out the options in a textbook-like fashion at the introductory level, one which allows the reader to come to his or her own conclusions without a sense of coercion, and one which provides a balance between theological and scientific considerations. This comes as close as any I have seen to being that book. I recommend it highly.

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PHILOSOPHY & THEOLOGY

SCIENCE'S BLIND SPOT: The Unseen Religion of Scientific Naturalism by Cornelius G. Hunter. Grand Rapids, MI: Brazos Press, 2007. Paperback; \$14.99. ISBN: 9781587431708.

This book aims to show that science cannot stop offering natural explanations when it encounters nonnatural phenomena. When problems arise such as the discovery of complex design, the assumption is that a natural explanation will be found. What might be a nonnatural phenomenon will be explained as natural (pp. 44-5) even if the explanation is fictional and does not correspond to a reality (pp. 46-8). The assumption is that there is a problem with the research, not with what Hunter calls the naturalistic paradigm.

Hunter uses the term "theological naturalism" for this naturalistic paradigm. He means that the historic reasons for believing that nature runs on its own and that natural phenomena must be explained accordingly, that is, as a result of natural causes using human reason, were theological. God does not act in nature, for instance, because God is too great or cannot be too close to the evil one finds in nature. Thus the term "theological naturalism" means that naturalism had a theological justification although the subtitle—*The Unseen Religion of Scientific Naturalism*—suggests that the author also sees naturalism functioning as a religion or as a theology.

The strategy is to show that the history of science is littered with failed explanations. For most working scientists, failure is a reason to find good natural explanations. But Hunter takes the failures as having reached the point

at which the paradigm of explanation in terms of natural causes needs to be questioned. For him the fact that this path is not taken shows that "the naturalistic paradigm" cannot be falsified. This allows him to level the playing field for the two explanatory alternatives. "[T]hose committed to naturalistic explanations, like those committed to supernaturalistic explanations, can always devise a theory to explain what we observe. Like supernaturalism, naturalism can never be judged a failure, for there is no test for failure" (p. 68).

The parade of failures is a mixed bag. In cosmology (chap. 4) he reviews explanations of the fact that the orbits of the then known planets were aligned roughly in one plane and that the planets including their known satellites orbited the sun in the same direction. The explanatory options considered at the time were divine design (Newton), one single cause (Laplace) and several independent causes (Bernoulli). Bernoulli calculated that the probability of independent causes resulting in the observed alignment was negligible. The requirement for natural causes ruled out Newton's explanation. Thus the rotating nebula was the only viable hypothesis left. But Hunter describes the situation as forcing "an either-or decision between independent causes (he calls this random chance) and a mechanistic process" (p. 56). It escapes me why he does not see both as mechanical explanations. He then reviews new problems in the recent history of the nebular hypothesis. While most practicing planetary scientists would take unsolved problems as characteristic for a science that deals with the *history* of the planetary system, Hunter counts it as evidence against the naturalistic paradigm—a failure to grasp the historical nature of planetary science and the role of interpretation in it. A more effective example is the fine tuning of the universe. Hunter points out that, while fine tuning could be explained in supernatural terms, only a naturalistic explanation in terms of many worlds is acceptable. The many-world hypothesis is a good example of science's blind spot: it not only commits science to anti-realism, but it is untestable in principle.

In reviewing evolutionary biology, the focus is on failed predictions rather than explanations. This issue arises because in chapter 5 Hunter introduces Popper's falsification view of scientific progress as the gold standard for science, and then spends chapters 5 and 6 listing failed predictions that should have led to falsification of the theory of evolution, but did not. Sometimes Hunter is on target: "Evolution is supposed to have produced a fine-tuned [molecular] machine that is, in turn, supposed to be the engine for evolution itself. This is circular, for without variation, natural selection is powerless to work" (p. 76). But he misses his target just as often. One prediction (chap. 6) is that species without a common ancestor cannot have similarities (no convergent evolution). Such species, however, do exist (pp. 84-5), and this is, according to Hunter, another falsification patched up with just-so stories. But on closer examination the similarities show many differences in detail. The differences in detail between the vertebrate eye and the squid eye are what make it possible to distinguish them from similarities due to common descent (homologies) in the first place. This applies to all convergencies such as those between marsupial and placental mammals as well as between African and American succulent plants. Thus common descent is not falsified and does not need to be patched up.

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It is unfortunate that the evidence for the failures of naturalism is a mixed bag because he does not need them to show that science is unable to establish its own limits. The limits of science are not subject to scientific problem-solving because these limits do not belong to the material world and are not subject to causation. They belong to the metaphysical context of science. Thus the boundaries of science depend on one's beliefs about the nature of reality. In the eyes of a theist, a metaphysical naturalist like E. O. Wilson will re-describe reality such that what others consider to be nonmaterial (e.g., moral standards) or supernatural (e.g., God) is reduced to material reality and thus subject to explanation in terms of natural causes. But such boundaries do not exist for a materialist.

The book fails on two other important points. First, the failed explanations of science are not failures of explanation in terms of natural causes. Rather they are the inevitable result of a process of trial and error by which we learn. They originate in human limitation. By ignoring the successes of explanation in terms of natural causes, Hunter fails to see that it works better than explanation in terms of supernatural or nonnatural causes. Take the history of twentieth-century embryology. Parts of many embryos can develop into complete and normal organisms. Initially this ability was seen as the effect of forces characterized variously as nonnatural, psychic or non-material. These explanations were replaced by accounts in terms analogous to a physical force field, the so-called embryonic field. In the late twentieth century, the material causes underlying this ability were identified as ribonucleic acids and proteins that could regulate the expression of genetic information. A natural reality replaced a supernatural reality.

Hunter also neglects the historical dimension of cosmology and biology. While the role of interpretation in historical biology is larger than in experimental biology, it can be tested. Take biogeography. The continents of Australia and South America were once connected via Antarctica. Pouched mammals are found alive in Australia as well as in South America. It was predicted that they had migrated from South America to Australia via the Antarctic continent. In 1981 a fossil pouched mammal was found on Seymour Island in the Antarctic (*Science* 218, no. 4569 [15 October 1982]: 284–6). Thus historical biology is not all interpretation and no prediction and testing. Moreover, in this example, we have consistency between two very different collections of evidence: geophysical and biogeographical observations and explanations match. In addition, each discipline accounts for its own distinct range of phenomena from global patterns of earthquakes and volcanism to the geography of plants and animals. With such a wide empirical scope, a theory has a large probability of being falsified. The fact that these two theories have not been falsified has turned them into strong accounts.

The conclusions of the book are confusing. Hunter praises as well as condemns what he calls naturalistic explanation. It seems he wants to introduce explanation in terms of supernatural causes into the natural sciences, a conclusion he supports with the observation that good science was possible without full-blown naturalism (p. 103). But here he mixes two very different roles of religion in science. Ideas about how God may have created

the world have been fruitful as toeholds for research, regardless of whether they were justified theologically or were correct. But explaining natural phenomena as the result of divine action is a science stopper. Not only do we not know why God made things the way they are so that predictions might be made, but it is also impossible to manipulate God as a variable in a scientific experiment. I leave aside that going in this direction would be spiritually inappropriate and also that it is theologically questionable to assume that God's action in the world can be conceived in terms of causal action.

The author is not familiar with common philosophical terminology: scientific deduction is said to be based on empirical observation (pp. 59, 111). There are category mistakes: panspermia is classified together with special creation as a supernatural alternative to naturalistic explanation (p. 144). The science is not reliable. Altogether, this does not inspire confidence in the reliability of the book. Not recommended.

Reviewed by Jitse M. Van der Meer, Professor of Biology and History and Philosophy of Science, Redeemer University College, Ancaster, ON, Canada.

PERSON, GRACE, AND GOD by Philip A. Rolnick. Grand Rapids, MI: Eerdmans, 2007. 280 pages, index. Paperback; \$28.00. ISBN: 9780802840431.

Person, Grace, and God is another volume in Eerdmans' *Sacra Doctrina* series, which attempts to articulate "Christian theology for a postmodern age." It should not surprise the reader, then, that Philip A. Rolnick, professor of theology at the University of St. Thomas (Minnesota), critically engages both ancient and contemporary thinkers in this fascinating study of the human. It is common in such reviews to utilize adjectives such as "wide-ranging"; in this case, such a word would fail to communicate the breadth of Rolnick's engagement. He discusses—with intimate and authoritative knowledge—thinkers as diverse as Boethius and W. D. Hamilton, Hans Urs von Balthasar and Richard of St. Victor, Immanuel Levinas and Jean-Pierre Changeux, among many others. The volume is rich and deep, occasionally dense, more often eloquent, and seldom without value.

Rolnick is in search of the human person, perhaps in a search-and-rescue mission of sorts, to deliver the idea of personality from the neo-Darwinists, postmodernists, and monist neuroscientists who would obliterate the concept in the name of nature, language, or physicalism. Tellingly, he begins his anthropology with theology ("the question about humanity is necessarily a question about God," p. 208), providing a historical sketch of the Trinitarian and Christological controversies of the early centuries of the Church with a particular focus on how the concept of a divine "person" emerged as a means of uniting the church's commitment to divine simplicity (monotheism) with a Trinitarian understanding of God (as well as to the dual human/divine nature of Christ). His historical narrative ends with Aquinas, which is disappointing. One wonders if his study of the person could have been better informed by, for instance, Jonathan Edwards' reflections on "religious affections" and the role of will in human action.

The centrality of Aquinas eventually becomes clear, however, as Rolnick borrows Aquinas's understanding of relation as a means of understanding the Trinitarian paradox: "Uniquely, in God the real relations among Father, Son, and Spirit are a 'between' that is also an 'in.' The real relations are *between* the persons *in* the absolutely shared and common divine nature" (p. 195, emphasis in the original). Recognizing the uniqueness of the Trinitarian dynamic, Rolnick nevertheless draws from Aquinas this relational understanding of the human person. He locates the person in the gift of God, defined as grace, both the grace of life received from God and the specific soteriological grace of Christ. "Because we are recipients of creation and 'capable of *receiving* relation,' person and gift are mutually constitutive. If we think through the logic of creation, we cannot think our own existence without *gift* as its *raison d'être*" (p. 168, emphasis in the original).

For the readers of this journal, Rolnick's chapters on neo-Darwinist understandings of the person and the questions about human soul and mind raised by modern neurology may be of most interest. He is particularly interested in how the neo-Darwinists interpret altruism, which, unless redefined or explained in consequentialist terms, provides a powerful argument against Dawkins' "selfish gene" argument. Here he attempts to recover the notion of transcendence, linking human goodness to ideals of love, goodness, and beauty that serve ultimately as the basis for defining personality. "Incommunicability" is Rolnick's means of expressing the uniqueness of the human person, in contrast to those aspects of nature shared by all persons or material entities. Repeatedly, he finds such transcendent ideals located in God's activity toward humans and in the corresponding relations between humans.

If there is a criticism of this volume, it may be that Rolnick has attempted too much. There is room for a book-length critique of the more radical postmodernist deconstructions of the person; there is also need for an extended dialogue with the neo-Darwinists and with those who would assert a purely physical or monistic understanding of the human; there may also be opportunity for a fuller discussion of how Christian theologians have defined the human in their quest to better understand the divine. Each of these has its literature and language and few are sufficiently familiar with all of them to fully appreciate the thread Rolnick weaves through them. Nevertheless, he contributes something of value to each of these conversations and, as such, deserves a wide and appreciative audience.

Reviewed by Anthony L. Blair, Dean of Academic Affairs, Eastern University, St. Davids, PA 19087.

THERE IS A GOD: How the World's Most Notorious Atheist Changed His Mind by Antony Flew (with Roy Abraham Varghese). New York: HarperOne, 2007. 222 pages. Hardcover; \$24.95. ISBN: 0061335290.

This is an intriguing and controversial book. Taken at face value, it is a lively, almost chatty narrative of a prominent British philosopher's intellectual pilgrimage from atheistic humanism to deism and perhaps more. A distinguished analytical philosopher of religion and Gifford lecturer, Antony Flew, over the course of his long career, wrote a number of influential essays and books arguing against

theism. Part I of *There Is a God*, "My Denial of the Divine," provides a highly readable summary of Flew's atheism. To put it far too briefly, Flew argued that since religious statements, especially about the existence of God, are incoherent and require endless qualification to become meaningful, the burden of proof rests with theism. For over half a century, Flew concluded that theism has failed to provide it.

For some time, especially since 2001, there have been rumors that Flew's commitment to atheism might be wavering. Then in December 2004, the Associated Press—followed by many major broadcast, print, and online outlets—reported that scientific evidence had now convinced one of the world's leading atheists to believe in God, albeit a God of the philosophers (particularly Aristotle), not of revealed religion. Only some kind of super-intelligence, the 81-year-old Flew now maintained, could account for the origin of life and sheer complexity of the natural order. Predictably, while Christian apologists and intelligent design advocates celebrated Flew's change of mind, atheists downplayed the significance of the defection.

Part II, "My Discovery of the Divine," briefly summarizes the reasoning behind Flew's conversion to deism, again in very accessible prose. Modern science, he argues, poses three questions that now point him to God: (1) How did the laws of nature come to be? (2) How did life emerge from nonlife? and (3) How do we account for the very existence of nature? Citing a variety of scientific and philosophical arguments from scholars familiar to readers of this journal—people such as Paul Davies, John Barrow, Richard Swinburne, John Leslie, Thomas Tracy, and Brian Leftow—Flew concludes that these questions are best answered by assuming "an Intelligence that explains both its own existence and that of the world[:] ... a self-existent, immutable, immaterial, omnipotent, and omniscient Being" (p. 155). While there is little new here for those well versed in the recent literature of science and religion, the account of Flew's engagement with this material is riveting. In some respects it represents an executive summary of an important part of the contemporary science-and-religion conversation.

Publication of the book and Mark Oppenheimer's *New York Times Magazine* piece, "The Turning of an Atheist" (November 4, 2007), has created a firestorm of controversy, especially in the blogosphere. The major bone of contention is whether Varghese and others manipulated the aging Flew into accepting arguments he would have readily denied when he was more mentally agile. Flew apparently reviewed and signed off on multiple drafts of a manuscript Varghese composed from interviews, correspondence, and the philosopher's writings. The final version was then copy edited and rendered more "user friendly" by evangelical author Bob Hostetler. Troubled by Oppenheimer's account of its allegedly questionable origins, critics have charged that *There Is a God* is a "bogus book" and that Christian apologists have shamelessly exploited "a confused, elderly man in a state of cognitive decline." Offended by such charges, Varghese has responded that Oppenheimer's piece is clearly slanted; that there was nothing untoward in the writing process; and that it is insulting to portray Flew as just "a senescent scholar." In a statement released by HarperOne, Flew himself stated: "I may be old but it is hard to manipulate me. This is my book and it represents my thinking."

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What to make of this intellectual conversion of the “world’s most notorious atheist”—as the unfortunate subtitle labels Flew? The book’s breezy style does fuel doubts about the degree to which Flew’s best thinking is on display. Apart from the state of Flew’s mind—whatever that may be—and the prose employed in the book, however, his gradual conversion to deism is believable on many counts, not the least being the force of the actual arguments advanced in the book. To be sure, *There Is a God* is not cutting-edge philosophy of religion, as theistic philosopher John Haldane concedes. It is not that kind of book. But it does put forth in shorthand some very important arguments.

Reviewed by Donald A. Yerxa, editor of *Historically Speaking*, *The Historical Society*, Boston, MA 02215-2010; Professor of History, Eastern Nazarene College, Quincy, MA 02170.

ANTICIPATING OMEGA: Science, Faith and Our Ultimate Future by Ted Peters. Göttingen: Vandenhoeck and Ruprecht, 2006. 221 pages. Hardcover; \$61.30. ISBN: 9783525569788.

“Begin at the beginning and go on till you come to the end: then stop,” Lewis Carroll’s King told the White Rabbit. It is a profoundly commonsense procedure and has been followed by, among others, theologians. They have usually begun their treatment of the God-world relationship with creation “in the beginning” and moved on through various loci to conclude with eschatology, the teaching about “the last things.” “Of course,” we are tempted to say. “How else would you proceed?”

Ted Peters suggests the reverse order in *Anticipating Omega*. He proposes a “retroactive ontology” (p. 11). The first of nine theses that he sets out in the first chapter of the book is unambiguous: “God creates from the future, not the past.”

In recent decades, a good deal of theology has been oriented to the future. Teilhard’s emphasis on an Omega Point, the theology of hope associated with Moltmann, and Pannenberg’s memorable claim that “If Jesus has been raised, then the end of the world has begun” have been significant. Peters, a theologian at Pacific Lutheran Theological Seminary who has been heavily involved in science-theology dialogue, took the step in his systematic theology text, *God—The World’s Future* (Fortress, 2000), of organizing his theology around the theme of prolepsis, “the invasion of the present by the power of what is yet to come.” Now in *Anticipating Omega* he develops the implications of this idea with special emphasis on relationships between faith and science.

Peters’ introductory theses encompass traditional ideas as well as hot topics in recent science-theology discussions. *Creatio continua* is emphasized along with *creatio ex nihilo*, and God is seen as primary cause acting through secondary causes. Evolutionary continuity with the natural world is emphasized. The Genesis creation stories are not neglected but they can be read eschatologically—Sabbath does not just lie in the past.

The key to all of this is the resurrection of Jesus as prolepsis of God’s final future, a resurrection which is to be understood as a historical happening—and more.

Following the argument of Robert John Russell, Easter is to be seen as “the first instantiation of a new law of nature” (p. 40). That idea clearly opens fresh possibilities for reflection on relationships between Christian hope and scientific predictions about the distant future.

Insistence upon taking science seriously in this enterprise means that one must also take seriously doubts about faith, and the doubt within faith (p. 57), which science may provoke. Chapter 3 deals with the “Barriers to Grace in a Scientific Era.” The next two chapters address specific areas of science which have been the subjects of theological controversy, genetics, and evolution.

Evolution, and especially the role of chance in the process, continues to be the most neuralgic area in many science-religion discussions. The randomness of evolution, and the apparent lack of purpose which this suggests, is especially disturbing to many Christians. Here a retroactive ontology, seeing things from the standpoint of the future while not neglecting the past, may be the new idea that is needed to shake discussions loose from old dead ends which they reached long ago. The role of chance is, Peters agrees, “the knottiest challenge of the Darwinian model of evolutionary biology.” But he can respond to this challenge by arguing that “purpose comes from God’s future”—it does not have to be built in at the start (p. 104).

New biomedical technologies allow us to go beyond the mere study of human evolution and introduce the possibility of trying to influence the course of evolution. Peters distinguishes three general uses of technology in this regard—for therapy, for enhancement, or to accomplish aims of transhumanism. Therapeutic aims are generally unproblematic, and he sees no fundamental objection to enhancement as long as its purpose is not to enable some humans to benefit at the expense of others. Transhumanism, on the other hand, is far more questionable. Belief that our ultimate hope is participation in the resurrection of Jesus will lead us to be very skeptical about such speculations as the downloading of our minds into computers.

Something that is lacking in many theology-science discussions is supplied here in chapter 8 with a treatment of “Science in Pastoral Ministry.” Some guidance is given for relating scientific and theological worldviews with the aim of enhancing proclamation of the gospel and for dealing with a few of the issues that clergy are likely to encounter in their work.

Finally we come to the last chapter, which is the only place where eschatology, teaching concerning “the last things,” would be dealt with in traditional dogmatics. In this work, however, there has been an eschatological emphasis all the way through. The fact that this chapter is titled “Proleptic Dignity, Proleptic Ecology, and Proleptic Politics” indicates that our understanding of God’s final future is to influence thought and action in the present.

Anticipating Omega provides helpful approaches to a number of controversial topics, including some that I have not had space to discuss here. But readers need not limit their consideration to the ideas treated explicitly in this volume. The idea of retroactive ontology almost begs to be connected with suggestions about the sending of signals back in time which have been discussed by

physicists. It should provide some insights on ways in which Christians are to read the Old Testament in light of the New. Other lines of investigation will undoubtedly emerge in the course of study. We have here not just the conclusions of one theologian but a work which I strongly recommend as a starting point for promising research.

This is the seventh volume in Vandenhoeck and Ruprecht's "Religion, Theology and Natural Science" series. It is encouraging to see a major publisher making available solid work in the science-theology field.

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RELIGION & BIBLICAL STUDIES

HAVE A NICE DOOMSDAY: Why Millions of Americans Are Looking Forward to the End of the World by Nicholas Guyatt. New York: HarperCollins Publishers, 2007. 288 pages. Paperback; \$13.95. ISBN: 9780061152245.

Matthew 24:42 (NIV): "Therefore keep watch, because you do not know on what day your Lord will come." -Jesus

About fifty million Americans seem to believe, often fervently, that the apocalypse (Christ's Second Coming) will take place in the very near future (2002 CNN poll). Englishman Nicolas Guyatt, a "lapsed Catholic" professor of history at Simon Fraser University in British Columbia, investigates this phenomenon—to his mind, entirely irrational. He does so in a gentlemanly manner, interviewing several of the "prophecy superstars," Tim LaHaye, John Hagee, Todd Strandberg (founder of www.RaptureReady.com), Dave Reagan, Jack Kinsella (Hal Lindsey's assistant), Joel Rosenberg, and others.

Guyatt begins with questions that bothered him: "Why would apocalyptic Christians ... want to get involved in politics? ... If God is in charge, what's the point of electing a Republican Congress? ... Why do so many Americans believe that the world is about to end? And should the rest of us be worried ...?" (p. 8).

Most of the book covers the several interviews the author had with the players mentioned above. LaHaye's 1970s work with Henry Morris in the founding of the Institute for Creation Research and his continuing search for the Ark is covered briefly. LaHaye calculates that the Ark construction could have taken as few as eighty-one years. He is quite convinced that it will be found during the Tribulation. Hagee's unique perspectives on Israel are discussed in depth, probably more than they deserve.

Two messages come out of this fascinating volume. The first is that the Religious Right is severely fractured; not only do they not "speak with one voice" on many matters, they feud with each other. Second, and more disturbing, is that many of the leaders not only preach about their understanding of biblical prophecy, but move beyond it to political activism, appearing as "experts" on talk shows, advising some politicians, and acquiring, in Guyatt's words, "... a disquieting influence in Washington" (p. 267).

The fact remains, however, Guyatt argues, that the prophecy gurus have yet to make even one single definite prediction. Most of their warnings are vague; when they make specific ones (Guyatt gives examples), they are embarrassingly incorrect. And so, new editions of their writings appear, the gaffes erased as if they never existed.

I very much recommend this book for its unique perspective on our faith. As one who holds basic Christian beliefs, including one in Christ's Second Coming, it is instructive to see how an outsider views those of our company who have taken biblical prophecy perhaps a little too far.

Reviewed by John W. Burgeson, 8119 Bideford Ln., Houston, TX 77070.

THE JESUS LEGEND: A Case for the Historical Reliability of the Synoptic Jesus Tradition by Paul Rhodes Eddy and Gregory A. Boyd. Grand Rapids: Baker Academic, 2007. 479 pages, scripture index, general index. Paperback; \$24.99. ISBN 9780801031144.

In focused detail and in broad scope, with grand themes and precise formulation, *The Jesus Legend: A Case for the Historical Reliability of the Synoptic Jesus Tradition* sets a high standard for thoughtful consideration of the titled question. Eddy and Boyd work step by step through the disciplines and perspectives that seek to discern whether the synoptic gospels are accurate in their account of Jesus of Nazareth. The authors begin by considering, first, epistemologically based skepticism about miracles, and then, the claims of literary parallels of divine men from Judaism and pagan literature. Challenges are explained with copious footnote references to the most compelling primary sources for each argument. Then the arguments are carefully evaluated. The authors continue this clear and fair process as they further consider scholarly interpretations of both ancient non-Christian sources and those of Paul on the historical Jesus.

Turning their investigation to ancient oral cultures, the authors argue that early oral recounting of Jesus has shaped the gospel genre. The synoptic gospels convey the actual life and teachings of Jesus, but not by means of modern historiography. What the gospels carry is the voice of Jesus, even if the exact words are only recorded when the Greek text occasionally breaks into Aramaic. The church from the beginning translates what Jesus says into Greek, so that his message can be heard by the widest audience.

The authors conclude that the portrait of Jesus drawn from Matthew, Mark, and Luke is the most historically probable representation of the actual Jesus of history. In particular, the idea that the Jesus stories are legend neglects the findings of contemporary interdisciplinary studies of orally oriented ancient cultures. The synoptic gospels bear significant marks of being trustworthy history.

In 479 pages, Eddy and Boyd build a methodical and documented case that warrants the best attention of the interested scholar or serious student.

Reviewed by James C. Peterson, R. A. Hope Professor of Theology, Ethics, and Worldview, McMaster University Divinity College and Faculty of Health Sciences, Hamilton, ON L9G 4C3.



QUANTUM PHYSICS AND THEOLOGY: An Unexpected Kinship by John Polkinghorne. New Haven: Yale University Press, 2007. 128 pages, index. Hardcover; \$26.00. ISBN: 9780300121155.

When John Polkinghorne writes on the intersection of science and religion, one pays attention. Polkinghorne is one of the few individuals with credentials in both science and theology who is saying new things about arguments well worn. A former physicist, turned Anglican priest, Polkinghorne writes sympathetically from within both camps rather than from one to the other. He writes with humility and confidence, extending an open invitation to his readers to hear, appreciate, engage, and walk with him.

This, however, is not the book that one might expect from its title. One anticipates yet another plea that science and religion are complementary enterprises utilizing different methodologies to seek truth, and that the truth one finds through revelation is of a kind different from what one discovers through empiricism. This is not to say that Polkinghorne has not engaged in that discussion. But this is not the text to which one should turn for such matters. His concern here is epistemological, not metaphysical, and his method is analogy, not integration.

Looking specifically at quantum physics as a sub-discipline, he delineates how conclusions have been reached in that enterprise, and then compares that process to what he has encountered among theologians. His argument is that quantum physicists and theologians use much the same reasoning to arrive at their conclusions. His concern is that the practitioners of these respective enterprises are largely unaware of the analogical patterns he identifies. His hope is that, having become aware, they will be more sympathetic to each other.

Thus, the language of kinship pervades this volume. He notes in the Preface that “there are significant degrees of cousinly relationship between the ways in which science and theology conduct their truth-seeking enquiries into the nature of reality” (p. x). To make his case, however, Polkinghorne must attempt an epistemological *coup d'état*; he must convince modernists and postmodernists in both camps to forsake their more radical, oppositional epistemologies for “critical realism,” a middle-of-the-road approach originally proposed by Michael Polanyi, the Hungarian scientist-turned-philosopher who penned *Personal Knowledge* in 1958. It is left unclear, however, to what extent his argument is dependent on this epistemology.

The primary question emerging from a reading of this work is whether argument by analogy really works. While there are obvious similarities between the way that scientists and theologians process information to arrive at conclusions, do similar-sounding debates truly reflect a shared commitment to inquiry? Do they simply reflect that all academic disciplines utilize similar cognitive processes in their enterprises? And, if not, is there something unique about the realm of quantum physics, with its toleration for counter-intuitive judgments, that is not the norm in terms of scientific inquiry? If so, the argument from analogy would be so localized as to be helpful only to those working within this particular sub-discipline.

Also, some of the comparisons are a bit stretched. For instance, Polkinghorne argues that miracles are “windows opening up a more profound perspective into divine reality than that which can be glimpsed in the course of everyday experience, just as superconductivity opened up a window into the behavior of electrons in metals” (p. 36). As an apologetic (and this text is an apologetic, of sorts), this analogy would leave something to be desired. Likewise, Polkinghorne includes several pages on the resurrection of Christ, drawing from N.T. Wright’s argument for its validity as history, comparing this conclusion to the discovery of the particle nature of radiation (Compton scattering) by Arthur Compton in 1923. The correlation is not immediately obvious to the reader. In short, the argument from analogy is probably most persuasive to those already persuaded, although the comparisons are certainly intriguing and enjoyable to read.

However, it should be noted that Polkinghorne has captured a helpful metaphor or two. It indeed may be helpful to think of scientific inquiry and theological inquiry as related, cousinly endeavors. And it may be equally beneficial for relationships on both sides were theologians and scientists to acknowledge the similarities inherent in their activities, even if they were occasionally at odds regarding the import of their conclusions. That encouragement alone makes this a worthwhile volume for both groups.

Reviewed by Anthony L. Blair, Dean of Academic Affairs, Eastern University, St. Davids, PA 19087.

SAVING DARWIN: How to Be a Christian and Believe in Evolution by Karl W. Giberson. New York: HarperOne, 2008. 256 pages, index. Paperback; \$24.95. ISBN: 9780061228780.

Physicist and ASA member Karl Giberson offers an easy-to-read book that nicely combines a historical analysis of the creation/evolution controversy with an advocacy for evolutionary theory. Giberson begins the book by describing his own journey from a fundamentalist creationism to an acceptance of evolution. He shares his story with a gentle touch of humor, maintaining a respect for the fundamentalists he once identified with. Throughout the book, Giberson examines both the scientific and cultural aspects of evolutionary theory, noting that “The creation-evolution controversy is only, in the most trivial sense, a scientific dispute. It is, instead, a culture war, fought with culture-war weapons by culture warriors.”

After tracing his personal history, Giberson traces the history of evolutionary theory, beginning with a discussion of Charles Darwin. Here we learn of “three Darwins” – Lady Hope’s “deathbed convert,” the “sinister” Darwin who devised evolution out of a desire to undermine faith, and the “actual” Darwin. This third Darwin was thoroughly a Victorian, a fairly ordinary Christian who considered the ministry, but then fell away as he struggled with the various cruelties he saw in nature – particularly the cruelty that claimed the life of his beloved 11-year-old daughter Annie. His loss of faith did not lead him to evolution; evolution and loss brought him to agnosticism. Giberson stresses this point as an argument against the second, “sinister” Darwin. At the same time,

Giberson recognizes that many fundamentalists will still see the devil's influence in the "actual" Darwin's story:

His spiritual journey was at odds with fundamentalism, which holds that true seekers will inevitably find their version of faith. To fail to find this faith can only mean that one is not truly seeking; to *abandon* faith is simply perverted; and to create a theory that might compel people to reject faith is simply evil.

Darwin was also Victorian in that he believed in progress. Even as he promoted a theory that depends, in part, on randomness, he did expect that life would be propelled forward.

Darwin's tendencies have solidified over time as Darwinism has been used to support both atheism and Social Darwinism. Giberson first critiques Richard Dawkins and other well-known atheists—drawing on some of the work he did recently with Mariano Artigas, *The Oracles of Science: Celebrity Scientists versus God and Religion* (2007). As part of his analysis, Giberson argues that biblical criticism was initially much more problematic for Christians—even fundamentalists—than evolutionary theory. Giberson then ventures where very few evolutionary scientists dare to go: into an examination of Social Darwinism. In a solid, well-written book, the chapter on "Darwin's Dark Companions" stands out; this chapter alone makes the book worth buying. Here Giberson admits that Social Darwinism and its resulting eugenics programs have not been "a historical aberration," but a logical (although not inevitable) conclusion of natural selection. He argues that by ignoring or denying this connection, evolutionists have only made it easier for creationists to reject evolutionary theory.

Social Darwinism certainly was a major concern of William Jennings Bryan, prosecutor in the Scopes trial. Giberson thus transitions into a series of chapters on the various evolution/creation trials, stretching from Scopes to more recent Intelligent Design cases. He credibly assesses the arguments and explains why creationists and ID advocates cannot win these cases.

Giberson concludes *Saving Darwin* with a comparison of physics and its grand theories with biology and evolutionary theory. Unlike many physicists, Giberson demonstrates a deep respect for the "otherness" of biology. He observes that

Evolution is a solid and robust scientific theory, because it explains things about the world and relates countless otherwise disconnected facts to each other. It is *not* a science because it resembles physics.

Evolutionary theory certainly has contained some mistakes (which Giberson briefly examines) and is underdetermined, but it still has incredible scientific support and explanatory power.

Saving Darwin offers a powerful analysis of evolution's scientific and cultural impacts. Despite this book's gentle tone, however, it probably would not be a convincing text for an ardent creationist, and may even be threatening for many young students who have not yet questioned creationism's claims. Instead, this book should be a useful guide for the student who has already started to examine his or her creationist beliefs, and who is seeking a way to re-think and reconcile his or her faith with modern

biology. Giberson's book will also be a useful resource for anyone interested in the science-religion dialogue.

Reviewed by Rebecca J. Flietstra, Professor of Biology, Point Loma Nazarene University, San Diego, CA 92106.

TOWARD A THEOLOGY OF SCIENTIFIC ENDEAVOR: The Descent of Science by Christopher B. Kaiser. Burlington, VT: Ashgate Publishing Company, 2007. 260 pages, bibliography, indexes. Paperback; \$29.95. ISBN: 9780754641605.

Christopher Kaiser is professor of historical and systematic theology at the Western Theological Seminary. With doctorates in astro-geophysics and Christian dogmatics and divinity, it is natural for his writing to involve both science and theology. His 1991 book, *Creation and the History of Science*, won a John Templeton Prize for Outstanding Books in Science and Religion. His new book reflects his belief that science and theology should not be viewed as two unrelated disciplines, and that it would be desirable for theology to address questions that are also related to other disciplines.

The author endeavors to go beyond the questions that science normally asks and examine the foundations that have made the current state of science possible. The foundations of scientific endeavor that he discusses are the existence of a special kind of universe, a special form of human intelligence, a historically conditioned culture of belief, and an industrial infrastructure. Following an introductory chapter, there are chapters devoted to each of these four foundations, explaining the question and then showing how there is a theological perspective on it. A final chapter summarizes the author's conclusions.

The first chapter notes that the universe is subject to laws. Science requires a lawful universe in order to study it. But why should a universe (or a multiverse, if it exists) be lawful? A Cosmic Lawgiver can be posited to resolve this issue, and the author argues that this lawgiver need not be impersonal and removed from nature and history but can be the God of the prophets.

The second chapter deals with an anthropological foundation. It concerns the genetic basis for human intelligence capable of doing science. Just as there are people today whose brains are capable of the type of reasoning necessary for advanced scientific research, there must have been people in the paleolithic age with the same genes as produced these modern brains. Can natural selection account for this sort of intelligence? If so, what were these mental capabilities used for? The suggested solution that the author describes relates to religion (shamanism) in the paleolithic. Cave paintings have been interpreted as giving evidence of belief in soul journey, travel to and from a spirit world. Mental processes are suggested that may be involved both in such religious practice and in scientific research.

In the third chapter, the question is raised as to why people want to do science. The author recounts the history of science-fostering beliefs from ancient Babylon and Egypt to modern scientists. He sees a continuous theological tradition in which the world is governed by mathematical laws and humans can discern and describe these laws. He sees this as countering the widespread notion that religious faith and scientific research are entirely separate.

Book Reviews

The fourth of the foundations of scientific endeavor is societal. Our present advanced state of science has been made possible by the availability of the necessary technologies, and the industries that produce them are driven by economic factors. The author gives examples of recent major scientific discoveries that would not have been possible without new technological advances. However, he sees market-driven concerns as secularizing the technical professions. Thus the needed specialization requires the de facto separation of science and spirituality, a contradiction of the results of the analyses in the previous three chapters. He concludes that this paradox calls for a theology of history and an eschatology of scientific endeavor.

In the summary chapter Kaiser outlines his ideas as to how theological discourse can recover something of the wholeness that characterized theology in pre-industrial times.

This is a scholarly work appropriate for the author's peers in academia but would also appeal to anyone who is interested in science and likes to ponder deep philosophical or religious questions. The interested reader is likely to agree that the author has correctly identified the foundations of scientific endeavor and is also likely to be prompted to give deep thought to questions suggested in the book and whether he might be able to expand on the author's answers.

Reviewed by Gordon Brown, 1220 NW State St. #28, Pullman, WA 99163.



SOCIAL SCIENCE

CULTURE MATTERS: A Call for Consensus on Christian Cultural Engagement by T. M. Moore. Grand Rapids, MI: Brazos Press, 2007. 172 pages, notes, study questions. Paperback; \$16.99. ISBN: 1587431874.

Does culture matter? Author T. M. Moore has set out to argue that it matters very much. Moore is dean of the Centurions Program of the Wilberforce Forum, which exists to train Christian leaders to effectively analyze, critique and engage the culture around them from a Christian perspective. Moore is eminently qualified to speak to the issue of culture and faith. He is the author or editor of twenty books and has essays, reviews, articles, papers, and poetry in dozens of highly regarded journals and websites.

In this book, the author is looking for principles from history to inform an authentic contemporary Christian cultural consensus. Although he has written convincingly that culture does in fact matter, he has not accomplished the goal implied by his subtitle, to create a consensus on Christian cultural engagement. The consensus contained in the last chapter is vague and theoretical, with much to ponder from a theoretical perspective but little of substance for how my life and profession might better engage culture.

Moore has used an interesting approach, each chapter being a historical look at a person or event that is a good example of the gospel engaging and transforming culture, followed by a modern example of a person, work, or trend that resembles it. For example, he links Augustine's

The City of God to the journal *First Things*, and the Celtic approach to Christian art to the work of guitarist Phil Keaggy. John Calvin's approach to Christian education and Dutch statesman Abraham Kuyper's role in politics make for fascinating reading on effective cultural contributions in previous generations. He also highlights the work of musician David Wilcox and poet Czeslaw Milosz as modern examples of cultural engagement. Interesting questions for study or discussion follow each chapter.

I agree with Moore that many Christians are escaping culture and creating safe enclaves, and need to reconsider how to truly be salt and light in the world. However, I am not convinced that cultural engagement is as central to the Christian life as he would make it. For example, he makes the statement that "... the followers of Christ today are not becoming any better equipped for the inescapable work of engaging and critiquing contemporary culture, or the glorious challenge of creating viable Christian cultural alternatives." Is "creating Christian cultural alternatives" really the goal of the gospel? The coming of the kingdom of God in Christ was not nearly so "culturally engaged" as it appears Moore would wish the church were today.

The book is something of a "Colson advertisement," which makes sense considering the author is dean of the Centurions Program of the Wilberforce Forum, connected to Colson's Prison Fellowship ministry. Simplistic conclusions such as "all the failing Christian education projects" were somewhat irritating, considering that those people conducting these "failing projects" are at least as committed to the cause as Moore and his Centurions Program.

As a person deeply committed to and involved in cultural engagement, I heartily agree with the gist of this book, in spite of my occasional frustrations. It makes for good reading and addresses a major challenge for the church. This book could well be used in a college course on faith and society, with many opportunities for further research on the people and events introduced in the book.

Reviewed by Mark A. Strand, Shanxi Evergreen Service, Yuci, Shanxi, China, 030600.

BEYOND RACIAL GRIDLOCK: Embracing Mutual Responsibility by George Yancey. Downers Grove, IL: InterVarsity Press, 2006. 197 pages. Paperback; \$15.00. ISBN: 0830833765.

George Yancey outlines clearly the positions of racism within the US today: colorblindness, "no judgments based on race because race will carry no social importance"; Anglo-conformity, "the real source of racial strife is economic disparity"; multiculturalism, "a society in which distinct racial and ethnic groups preserve their own identities"; and white responsibility, where "the dominant group creates problems of race and ethnicity."

Yancey outlines the strengths and weaknesses of each position by examining their history and how Christians have adapted to them. White responsibility, for example, identifies the power of sin in creating racial conflict, yet leaves out the important features of forgiveness and redemption. Multiculturalism recognizes the arrogance and selfishness that resides in each culture, yet implies that people of color are superior to the majority group. Yancey wisely concludes, "In an ideal world, multiculturalists would challenge European American culture

but not criticize it any more than they criticize other cultures" (p. 63).

Yancey suggests that the origin of the Anglo-conformity model can be found in a famous 1965 report by Daniel P. Moynihan, who proposed government programs for black families to "rescue black subculture from the lasting effects of racial oppression" (p. 43). Yancey, however, believes that the model insists that class issues outweigh race issues and thus fuels the "race versus class" debate.

The flaw of colorblindness is that it assumes that once race is unimportant, then racial inequalities will fade. But ignoring race leads to strife because it minimizes the pain of considering a particular race as inferior. The philosophy that underlies this perspective is one of a political ideology where the best person wins as people of other races compete against one another. Yancey concludes that such a model is built on individualistic ideas of sin and does not address the structural aspects of racism.

The second part of the book attempts to articulate a Christian approach to deal with racism by examining spiritual issues. Yancey describes a "mutual responsibility model" that will help bring about racial reconciliation. Because of our sinful nature and racial mistrust, we need to examine the results of historical and institutional racism. This will include how we have stolen Indian land, fled to the suburbs, and allocated money for education and crime prevention. What follows must be individual and corporate repentance where interracial friendships and racial healing take place. Corporate repentance will assure racial minorities that they will have help in their struggles.

Similarly, minorities must recognize the moral nature of attitudes and actions and not complain that tensions are the result of a power struggle. Yancey cautions minorities not to play the race card. He concludes that the "only way to break the cycle of abuse is to be ready to forgive one's former oppressors" (p. 109).

Jesus, of course, is the "ultimate reconciler" who not only prayed that Christians might be united, but demonstrated (for example, with the "woman at the well") that arrogance and paternalism were not the answers. Yancey reminds us that God has not given us a spirit of fear and yet fear is a powerful factor in race relations today.

Fear prevents European Americans from being willing to enter into genuine dialogue ... because they do not want to say something that will get them categorized as racist. People of color fear being ridiculed and labeled as troublemakers, so the fear of one group plays off the other and a cycle of dysfunctional race relations results.

So, how do we begin to solve the impasse? Yancey suggests that we focus on multiracial churches, social networks, political activism, and a revision of attitudes and practices at Christian academic institutions. If we can put aside group interests, are open to repenting and forgiving, are accountable to other races and have a teachable spirit, we can commence activities that imitate Jesus and make a difference in our own attitudes and ultimately in our society.

Reviewed by Karl J. Franklin, International Anthropology Consultant, SIL International, 7500 W. Camp Wisdom Road, Dallas, TX 75236. ♦



Letters

A Response to Paul Seely's Response to Carol Hill's Worldview Alternative

I am having a difficult time responding to Paul Seely's communication "Genesis 1-11 in the Light of Its Second Millennial Worldview: A Response to Carol Hill's Worldview Alternative" (*PSCF* 60, no. 1 [2008]: 44-7). I think that my difficulty must stem from a misunderstanding of what Seely means by "accommodation" and "concordism."

In my understanding, "creation science" tries to fit science with the Bible (that is, with one traditional interpretation of the Bible); "concordism," on the other hand, tries to fit the Bible with science. "Accommodation" is the idea that God accommodated his revelation to the knowledge of the biblical writers. Or, as stated by Seely in his Letter (*PSCF* 55, no. 2 [2003]: 138),

God has spoken in Scripture ... as a Father to his little children, as a tutor, accommodating his theological lessons to the mentality and preconceptions of his young children, aware that in time they will learn better of both history and science.

Seely states in his March 2008 communication (p. 46) that I am a concordist. I do not think that I am, and probably neither does Hugh Ross, who is a concordist (see the debate between Paul Seely and Hugh Ross in the March 2007 *PSCF*). For example, in my worldview alternative article that Seely critiques, I go into a lengthy discussion of how Chapter 1 of Genesis does *not* concord with the science of geology. To me, Genesis 1 is not concordist *or* accommodationist. The text merely copied the style in which people wrote such epic narratives in those days. It was in that format, and containing the pre-scientific notions of that day, that the revelation of God was written down. This may go against evangelical hermeneutics and the notion of inerrancy marked by concordism, but then I consider myself to be a "worldviewist," not a concordist.

What I am advocating is a different approach to biblical interpretation. Essentially, the main idea of the worldview approach is that God enters human history as it is being played out in real time and space, so that the "cultural trappings," or worldview, of the biblical authors get incorporated into the text alongside God's revelation. This involves no condescension or accommodation of God to the limited mentality of his children—attributes in my opinion that contradict God's omnipotent and unchanging nature. God simply gave his revelation to people in that age by his Holy Spirit, as he still does to us today. When we are given God's revelation, he does not reveal to us the science of the twenty-second century, and if we write down this revelation, errors in our scientific thinking will be incorporated into the text. Does this mean that God is accommodating our false way of thinking? I do not think so. *We* accommodate his revelation into our way of thinking; he does not accommodate our way of thinking into his.

Denis Lamoureux's article "Lessons from the Heavens: On Scripture, Science and Inerrancy" (*PSCF* 60, no. 1

[2008]: 4–15) offers an approach to inerrancy without concordism, and I think it is commendable that different approaches to biblical interpretation are being considered and discussed. I would encourage others in the ASA and elsewhere to enter into this discussion.

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Response to P. G. Nelson's "Numerology in Genesis"

This is in response to P. G. Nelson's letter to the editor entitled "Numerology in Genesis" (*PSCF* 60, no. 1 [2008]: 70–1). Since I am not a mathematician, I have sought the advice of Iain Strachan, a mathematician who works in statistical pattern recognition. I quote Iain (with his permission):

In the first of Nelson's objections, he assumes the formula you used was $5x + 7y$ —a formula that can represent any number greater than 23, given the correct choices of x and y . However, he does not seem to have taken on board the fact that the values of y in the actual data set are highly constrained. If the numbers (A , B , C) denote age at birth of son, years lived after, and age at death, then for the A and B values, the formula is only ever $5x$ or $5x + 7$; or in other words, y is only ever zero or one. This allows the possibility that for the C value which is always $A + B$, that one can have $5x + 14$, or a value of 2 for y . This means that all of the numbers can only end in 0, 2, 5, 7, or 9, with 9 only possible as the C value. Clearly, then, only half of the possible numbers can be represented, not all of them as Nelson claims. As regards the ages of Nahor, I think his point is irrelevant (that you can use multiples of 6×2 months to produce any age). He has failed to see that it is part of a constrained pattern involving the number 6.

Iain, however, does point out a mistake in my "Making Sense of the Numbers of Genesis" article (*PSCF* 55, no. 4 [2003]: 239–51, Table 2): my claiming odds of one in a billion for the patriarchal numbers before the Flood. These odds were based on 30 numbers (10 patriarchs, 3 ages for each) ending in only half the digits (no numbers end in 1, 3, 4, 6, or 8). Again, quoting Iain:

The third number of each triplet is entirely determined by the sum of the first two and hence can't be treated as independent. Thus, the truly independent calculation has 20 numbers that end in 0, 2, 5, 7, a probability of 1 in 0.4^{20} , which is around one in 90 million. Ninety million to one are also extremely long odds, and this does not affect the end conclusion.

The end conclusion of my Numbers article is that *it is inconceivable that these are real ages*. Surely, if all of the ages listed in Table 2 of my Numbers article are statistically random numbers, as should be expected for real ages, such numerical improbabilities would not exist. The patriarchal ages of Genesis are *not* real numerical ages. They are *sacred* numerological ages, the purpose of which was to impart a spiritual or historical truth to the text, one

that to the ancients surpassed the meaning of pure rational numbers. Thus, these ages cannot be used to construct a 6,000-year-old universe or planet Earth.

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Comments on Ackerman's and Swartzendruber's Articles

The articles by Ackerman and Swartzendruber (*PSCF* 59, no. 4 [2007]: 250–64; 265–7) address the issue of global warming and Christian responses to this subject. Ackerman first admits that controversy on this subject exists among evangelical Christians. Later he labels all who differ from his position on global warming with different names, but asserts that they are "opponents of the science of global warming." In fact, many evangelicals are scientists who are skeptics of the position adopted by Ackerman—for example, the Intergovernmental Panel on Climate Change (IPCC) position. Ackerman labels such people as "denialists," a term with negative associations ever since Ellen Goodman, a *Boston Globe* journalist, first coined the term "denier." She applied the term to global warming skeptics, with an analogy to the holocaust deniers. (This prompted some bloggers to propose Nürnberg-type trials and penalties for the leading deniers on global warming.)

Fair-minded Christians should refrain from such name-calling. Even the popular media and some who agree with the IPCC position have reflected this spirit in recent events. An international conference on climate change was held in New York City in March, resulting in a report of the views of skeptics on global warming—the Non-Governmental International Panel on Climate Change or NIPCC. The distinguished scientist, Frederick Seitz, wrote the foreword in the NIPCC report before he passed away. Obituaries, e.g., in the *Los Angeles Times* and the *Associated Press* described Seitz as a long-time "skeptical" on global warming and refrained from using terms such as "denialists."

The media also noted the participation in the NIPCC conference by celebrities like John Stossel of ABC-TV and Vaclav Klaus, President of the Czech Republic, without applying any labels like "denialist." In much the same spirit, the magazine *Skeptical Inquirer* (which is in general agreement with the views of Ackerman on global warming) moved away from name-calling by publishing an article by a prominent skeptic, Bjorn Lomborg, entitled "Let's Keep Our Cool about Global Warming" (vol. 37, no. 2 [Mar/Apr 2008]: 42–6).

The article by Swartzendruber is friendlier toward skeptics. His position is basically one of "better safe than sorry" (that is, described by the modern equivalent, the "Precautionary Principle"). Missing, however, is the recognition that overreaction via the precautionary principle to the global warming problem could consume resources better expended elsewhere for the benefit of the poor and underdeveloped countries in the world—compare the writings of Lomborg, for example.

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