Book Reviews

ANTHROPOLOGY & ARCHEOLOGY

THE REAL EVE by Stephen Oppenheimer. New York: Carroll & Graf Publishers, 2003. 440 pages, appendices, notes, index. Hardcover; $25.00. ISBN: 0786711922.

Geneticist Stephen Oppenheimer is a member of Green College at Oxford. This is Oppenheimer's second book on human evolution and genetics. Its purpose is to illuminate the peopling of the world by anatomically modern humans (AMH) through the mtDNA and Y-chromosome lineages. The seven chapters start with explaining the Out-of-Africa Theory and then move through the change from archaic hominids to moderns, the first steps into Asia and Australia and the peopling of the Americas.

Oppenheimer presents a great argument against the view common among Christian apologists that intelligent, rational humans arose suddenly within the past 60,000 years in Europe, where there was a flowering of art and Upper Paleolithic tools. If this had happened, then everyone on earth who can speak, draw, or write must have descended from the Europeans. Not only is this a terribly Eurocentric idea, it is also impossible based upon the genetic evidence. MtDNA and Y-chromosome trees are rooted in Africa, not Europe. Besides, art first appears on earth, not in Europe but in Australia. Oppenheimer argues that those humans who left Africa 100,000 years ago were speaking. Thus all of their descendants—those of us alive on earth now—could speak as well.

When it comes to the peopling of the New World, Oppenheimer presents some interesting ideas for explaining the genetic distribution and variations seen among Native Americans. Americans in the north, where they were supposed to have lived the longest, have the least genetic diversity. Americans living farther south have much greater genetic diversity. Oppenheimer explains this by suggesting that the last glaciation forced people south and then after the glaciation, limited groups with limited diversity moved back north.

Other interesting ideas in the book are that language existed 2.5 million years ago, and existed in two different genera—*Homo* and *Paranthropus*. Oppenheimer vigorously defends the concept that the human intellect did not suddenly flower 35,000 years ago. He also chides anthropologists for engaging in that time-honored human tradition of finding one group and denigrating them. In this case, it is the Neanderthals whom Oppenheimer says were basically like us. He also demonstrates a huge mtDNA genetic divide between peoples west of India from those farther east. He ascribes this divide to the eruption of Toba, which was the largest volcanic explosion in the past 100,000 years. It turned India into a wasteland of ash, dividing the peoples.

One weakness of the book is that Oppenheimer tries to follow too many genetic lineages. Trying to follow a logical argument with sentences like, "As I mentioned in Chapter 5, A, C and Z are characteristic of North Asia …" is very difficult. One must have the memory of an elephant to follow such an argument. And it does not end there. Each Y-chromosome and mtDNA lineage is given the name of a mythical person and that does not seem to help either.

Oppenheimer is a committed Out-of-Africa proponent although initially he does not sound like one. Early on, he reminds his readers that the vast bulk of our nuclear genes come to us from hominids on earth long before anatomically modern humans appeared. He then notes (p. 49) that it is very difficult to construct genetic trees from nuclear DNA so evidence of AMH and archaic hominid interbreeding could be found. This clearly sounds like the words of a multiregionalist, an anthropologist who believes that there was gene flow between the ancients and AMH. But then, inconsistently with his own words, Oppenheimer proceeds to discount any possibility of archaic genes and interbreeding, stating over and over that the archaics went extinct without passing on any of their genes to us. This is a disappointment because it is so illogical and this illogic is so foundational to the book.

The book is worth having if only as a reference for following the mtDNA lineages. It would have been better had the discussion of those lineages been clearer.

Reviewed by Glenn R. Morton, 10131 Cairn Meadows Dr., Spring, TX 77379.

ADAM, EVE, AND THE GENOME by Susan Brooks Thistlethwaite, ed. Minneapolis, MN: Fortress Press, 2003. 193 pages. Paperback; $20.00. ISBN: 0800636147.

Thistlethwaite is the president of Chicago Theological Seminary (CTS). She has co-authored several books including *Casting Stones: Prostitution and Liberation in Asia and the US,* and *Lift Every Voice,* and *Sex, Race and God.* This book is the outcome of a class at CTS on the intersection of the Human Genome Project (HGP) and theology. Eight authors cover the history of science, Mendelian genetics, post Mendelian genetics, theological anthropology, the implications of the HGP to Adam and Eve, racism in American culture, the search for the violence gene, and the Chemistry of Community.

There is no coherent theme through the book. The authors return many times to similar topics. Thistlethwaite notes that humans have 99.9% identical DNA and that this is what unites humanity. Theodore Jennings then goes one step further proclaiming that the redemption depends upon our genetic unity as a species. And this, of course, raises the question, at least in my mind, about why 99.9% unity allows redemption but 98% similarity with the chimps does not include them. It seems a bit odd to define redemption based upon DNA similarity. Is 1.9% theologically significant?

The most interesting issues are those involving ethics. Do we have an obligation to give a kidney to a brother simply because he will tolerate our organ? What are we to do with knowledge derived from genetic testing which tells

us information about others? If we find we have a single copy of a gene for a genetic disease which had to come from our parents, what do we owe to those more distantly related whom we have never met? If we are tested in an attempt to donate blood or an organ to a friend, and then many years later we find that our blood or organ is needed by a stranger in another land, what is our moral obligation? How much danger should we be required to expose ourselves to?

One interesting discussion concerns the image of God. Most argued that the classic idea that the image of God is somehow related to reason is wrong. Thistlethwaite said that this is a way to subjugate those judged as being inferior. Jennings notes that we are who we are because of our DNA and our bodies and that we cannot separate the image of God from our bodies.

There are discussions of the dangers of modern genetic knowledge. Ken Stone notes the ambivalence among the gay community for finding a "gay gene." Fears that a fetus carrying such a gene would be aborted are held by about half of the gay community. One wonders what happened to a woman's choice when Thistlethwaite decries the use of modern genetic knowledge to choose the sex of children in China, which has led to 50 million missing women! Jennings notes the Eurocentric nature of the HGP since the sequenced genome was taken from European employees of the NIH, implying that all other sequences are deviations from the norm. There is some truth in this claim.

The article on "African American Skepticism" by Lee Butler, was mostly a history of the atrocious mistreatment of Blacks in the past. Butler hardly discussed the HGP and how it shows we are closely related to each other. He also missed an opportunity to discuss from his viewpoint the misuses of the data coming out of the HGP. Such a discussion would have been welcome and interesting but as it was, I felt this chapter was out of place.

There are some strange (at least to this non-theologian) claims in the book. Liberation theology runs through the book. Jennings (p. 109) seems to claim that capitalism is the original sin. Thistlethwaite suggests that original sin is the societal structures in which we find ourselves embedded (pp. 156–7).

This book is an attempt to construct a dialogue about the implications of the HGP to theology. It suffers from the weakness of addressing these issues from only one side of the theological spectrum. It would have been interesting to hear the views of a broader range of theological positions on this very important topic.

Reviewed by Glenn R. Morton, 10131 Cairn Meadows Dr., Spring, TX 77379.

ETHICS

CAN WE BE GOOD WITHOUT GOD? Biology, Behavior, and the Need to Believe by Robert Bruckman. Amherst, NY: Prometheus Books, 2002. 278 pages. Hardcover; $22.00. ISBN: 1573929743.

Bruckman is a cancer specialist and a professor in the department of medicine at the University of Toronto. He was the president of the Humanist Association of Canada when this book was published and he co-authored another book entitled *Magic or Medicine?* He has also hosted his own television program on medical subjects in Canada and England. In the next to the last chapter of this book, Bruckman describes his Jewish upbringing and his subsequent rejection of theism. He also explains his two main reasons for rejecting theism. One reason revolves around his difficulty in reconciling a view of the world in which a god controls all human events, with the apparent arbitrariness and randomness of real human life. The second reason, which is his main reason for writing the book, is that belief in God is often closely associated with destructive acts and the slaughter of fellow human beings (the events of September 11, 2001 are cited in the preface).

The book is divided into three main sections. Part one, entitled "To Believe is Human," describes the evolutionary development of religious belief, the problems associated with interpreting communal myths and legends as revealed truths, and the neurology behind religious belief. In the chapter on the neurology of religious belief, Bruckman argues that "the structure of the human brain is such that experiences of God and heaven are hardwired into it" (p. 107). Part two, entitled "Belief and Behavior," includes an extensive explanation of the behavior of groups in chapter five. This is followed by two chapters which survey the constructive and destructive effects of communal religious belief. Part three consists of a single chapter in which "alternative gold standards" for human behavior are proposed. These ten core principles summarize the nontheist or atheist basis for trying to maintain "good" behavior.

Bruckman states in the first sentence of the first chapter that "this book is not a debate about the existence of God." Yet throughout the book, theistic beliefs are attacked and maligned while nontheistic explanations are preferred. While various concepts of God are presented in the introductory chapter, it is the image of God as an "architect and controller" that is the main target of Bruckman's attack. Many theists also reject this image of a God who micromanages the events of human history as well as the lives of individual human beings. It is unfortunate that other, less controlling images of God are not even considered as viable options to the "Divine Regulator" model that Bruckman so vehemently rejects.

Another problem with the book is the author's use of evidence to support his conclusions in the chapter on the neurology of belief. He concludes chapter four with the following statement: "It has been demonstrated, unequivocally and unambiguously, that the experience of God is built into the human mind. The God of mind is undeniable; the mind of God will forever remain a matter of personal belief" (p. 109). However, when discussing the research that leads to this conclusion, statements like "much of what follows is conjecture," "this is an area of very active research and some controversy," and "this is of course science in its infancy" makes the reader wonder if the statement at the end of the chapter can be adequately supported.

Similar statements pervade the following chapter on the behavior of groups. While Bruckman warns that "the leap from animal behavior to human conduct is fraught with speculations" (p. 126), much of the evidence used

to explain human group behavior is extrapolated from research with animals. While arguing that pheromones are responsible for certain aspects of human crowd behavior, statements like "this area of human biology is still in its infancy" and "there are large gaps in our understanding of how precisely this works" make one wonder if any of the author's conclusions are valid.

ASA members and other Christians will find little that is helpful in this book. Even the chapter on the constructive effects of religious belief is designed to undermine theism. The author argues that belief in an external deity is simply a coping strategy that is a fundamental component of the human psyche. The concept of God is described as nothing more than a human creation, developed during our evolutionary past to help humans deal with their fear of the unknown. While acknowledging that religious beliefs can provide certain social and psychological benefits, these benefits are compared to the various objects (teddy bears, security blankets, etc.) that bring temporary comfort to children. Just as these transitional objects are abandoned as children mature, adults should also learn to abandon the concept of God, as believing in God is comparable to the function of these transitional objects in the lives of children.

What is the answer to the question that is raised in the title of the book? Can we really be good without God? According to the author, all we need is a little bit of psychotherapy. We first need to be aware of the psychological forces that shape our behavior and then be aware of the consequences of our behavior. If we can identify our emotions, recognize their causes, and make an "empathic" response, then we can be "good" without God. We need to move toward moral codes that are "based firmly on rational thought than on religious belief and revelations, which are neurologically closer to limbic drives" (p. 264). It is these instinctive limbic drives, which are so closely associated with destructive religious beliefs, that we need to overcome. While psychotherapists, humanists, and atheists will enjoy reading this book and agree with these conclusions, Christians and other theists certainly will not.

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FAITH & SCIENCE

THE MIRACLES OF EXODUS: A Scientist's Discovery of the Extraordinary Natural Causes of the Biblical Stories by Colin J. Humphreys. San Francisco: Harper-Collins Publishers Inc, 2003. 362 pages. Hardcover; $24.95. ISBN: 0060514043.

The Miracles of Exodus is the decade-long culmination of a scientist's search to understand the details of how Moses led the Israelites out of Egypt and on to Mount Sinai. Humphreys is a professor of material science who uses a combination of logic, biblical exposition, and science—primarily geology, biology, and archeology—to suggest scientific mechanisms for the Exodus miracles. The detective writing style reveals an amateur investigator visiting ruins and dusty library shelves to scour out details that shed light on one of the most significant people movements in history.

The Miracles of Exodus is a curious collection of ideas. Humphreys' premise appears to be that armed with a resourceful set of commentaries, Hebrew dictionaries, an atlas or two, and the occasional wisdom of a tour guide, anyone can unravel the biblical discrepancies of the Exodus which have plagued theologians for centuries. A few of the arguments are well constructed and make for interesting reading despite being frustratingly repetitive. For example, in "Crossing the River Jordan" (chap. 2), Humphreys locates an earthquake fault running near the town Adam, where the Jordan was blocked while the Israelites crossed the river (Josh. 3:15–16), and suggests the providential timing of an earthquake-induced mudslide at Adam, as has been recorded "… in 1906, 1834, 1546, 1534, 1267, and 1160" (p. 21). This is the essence of the eleven-page chapter which would have been significantly improved at half the length.

Humphreys moves on to reveal "… what really happened …," —another repetitious phrase (pp. 15, 24, 27 …)— at the burning bush, during the Egyptian plagues, during the Exodus, and in locating Mount Sinai. Critical to understanding the book is Humphreys' conception of what constitutes a miracle. He states: "In this book I've suggested that the miracles of the Exodus were natural events but nevertheless still miracles because of timing" (p. 271). Consequently the miracles of Humphreys' God are constrained to common experience, leading to some remarkable explanations such as volcanic activity at Midian for releasing "gas coming up from the ground under the burning bush to keep it burning, rather like the natural gas that keeps my coal effect gas fire burning" (p. 73). Moses would have been best to keep his shoes on if he were truly standing on top of an active volcano!

Another miracle is Humphreys' proposition that manna is tree gum exuded in the regions where the Israelites camped (p. 290), although Humphreys does not calculate how many trees would be required to continually feed 20,000 people and why the trees fail to leach syrup on Sundays. In contrast, Humphreys' following explanation for the Israelites' feast of quail based on an exhausting migration using current flight patterns is interesting. Discontinuities continue to appear in other theories, such as the suggestion that the pillar of cloud and fire that the Israelites followed through the wilderness was actually a volcano, Mount Sinai, although there is no discussion of how the volcano moves from being in front of the Israelites on their escape to the Red Sea, to being behind the Israelites, in forming a screen from the pursuing Egyptians (Exod. 14:19–24).

Similarly disturbing is the circular logic, such as during the placing of Etham. "In fact, all the major biblical scholars regard the location of Etham as unknown" (p. 207). Humphreys equates Etham with Shur by comparing lists of stopping places in Exodus (12:37–15:27) with those in Numbers (33:3–9) and then reasoning that since Shur means wall, and high mountains rise up like a wall around Shur, and geological rifts cause high mountains, "[t]hus, using the insights of science, in particular geology, we can say that the third mentioned place on the Exodus route, Shur, if the name means natural wall, is probably located on a rift valley" (p. 218). Incidentally, the *Zondervan Pictorial Bible Dictionary* locates Etham in the same region as Humphreys, although admittedly coming to the same con-

clusion in only one short paragraph rather than eighteen pages.

Humphreys has obviously enjoyed compiling *The Miracles of Exodus*. Unfortunately the few interesting ideas are too heavily buried among repetitious dross, limiting the audience to those few wanting to hone their skills in hunting for a few gems among many grey stones.

Reviewed by Fraser F. Fleming, Associate Professor of Chemistry, Duquesne University, Pittsburgh, PA 15282.

RE-ORDERING NATURE: Theology, Society and the New Genetics by Celia Deane-Drummond, Bronislaw Szerszynski, and Robin Grove-White, eds. New York: T & T Clark, 2003. 368 pages, index. Hardcover; $100.00. ISBN: 0567088960. Paperback; $29.95. ISBN: 0567088782.

Numerous books have appeared over the past few years dealing with Christian attitudes to emergent technologies and their applications in the biosciences. These issues are discussed in this well-ordered series of essays by leading experts from England and Scotland across a range of disciplines. The first four chapters feature essays and responses from a colloquium on "Re-ordering Nature: Theology and the New Genetics" held at Lancaster University in 2000. The remaining eleven chapters, with one exception, are entirely new essays produced for this volume. The fifteen contributors include well-known participants in science and theology dialogue, philosophers, theologians, historians, scientists, sociologists, and others. The eclectic mix, sometimes represented well in a single individual, makes for a very stimulating set of papers covering such topics as genetically modified organisms, risk, wisdom ethics, just experimentation, and the responses of youth to these issues.

The book starts with the widespread angst and skepticism of the public in Britain toward genetically modified organisms in particular and biotechnology in general. It affirms the need for scientists and theologians to recognize core issues that animate public perception and calls for a conscious descent from the lofty, self-created perch of the experts to engage with clear public concerns. The book challenges experts to understand the content and source of concerns and to address them in a serious and publicly engaged, rather than dismissive, manner.

At the same time, the book also performs a very important task by showing explicitly how theological resources drawn from within the Christian tradition can provide means to reframe and reinvigorate public debate about these emerging biotechnologies and their import. The authors collectively criticize the common tendency for theology to takes its cues from the sciences in how to frame public policy issues and suggest that the metaphysics that underlie scientific endeavors may prove inadequate to challenge the interface of science and society. Cost-benefit analysis and its stepchildren should not be the only criterion by which bioscience applications should be measured and decisions rendered.

Important issues raised include the ways the new biosciences will challenge traditional theological, religious, and societal conceptions about what it means to be a person; what it means for something to be "natural"; what limits, if any, should be imposed on advancing technologies; and how limits of any kind might be justified. While these essays will not be the final word on the subject, they raise many important issues for consideration by thinking Christians across the sciences, humanities, and theology. The paucity of attention to these issues within standard systematic theologies, for example, results in a failure to equip future leaders in Christian circles from engaging effectively with issues that are paramount within the wider culture. The authors are to be congratulated for raising a clear set of issues in a compelling and focused manner. University classes across a range of disciplines could fruitfully engage with these essays as part of their curriculum and thinking Christians everywhere will benefit from careful reading and consideration of the arguments presented here.

Reviewed by Dennis W. Cheek, Vice President for Venture Philanthropy Innovation, John Templeton Foundation, Radnor, PA 19087.

THINGS A COMPUTER SCIENTIST RARELY TALKS ABOUT: Interactions Between Faith and Computer Science by Donald E. Knuth. Stanford, CA: CSLI Publications, 2001. 230 pages, index, notes. Hardcover; $35.00. ISBN: 1575863278.

On October 6, 1999, Knuth, professor emeritus of the Art of Computer Programming at Stanford University, "The Father of Computer Science," stood before a critical audience at the Massachusetts Institute of Technology (MIT). He began a series of six lectures on how his Lutheran viewpoints on God and his devotion to his craft had intersected in his life, in particular when he composed a devotional book titled simply *3:16* (1990).

This book is written from his lecture transcripts, including the question/answer sessions which took place after his prepared remarks. It also contains an excellent Foreword by Anne Foerst of the MIT Artificial Intelligence Laboratory and an edited transcript of a panel discussion between Knuth and four other computer scientists (Harry Lewis of Harvard, Guy Steele Jr. of Sun Microsystems, Manuela Velosa of Carnegie Mellon, and Mitch Kapor, founder of Lotus Development Corporation). The subject of the panel discussion was "Creativity, Spirituality, and Computer Science."

Computer science, with mathematics, stands in a way outside other sciences, which deal with causality in the material world. The artifacts of computer science are all manmade, and the outsider might well think of the discipline as only another branch of engineering. After reading this fine volume, I think most people will be persuaded otherwise. Knuth explores the faith/vocation interface, and how a career in computer science led to both a unique and a deeper understanding of God. The "3:16 Project," a labor of love, led Knuth into a study of aesthetics, language translation, and theological history. His journey is told in gripping terms; one quickly senses a deeply humanistic and religious man as the story unfolds.

Two quotations serve to illustrate Knuth's thinking: (1) "… I learned that the policy of continually asking and trying to answer the difficult and unanswerable questions is far better, from God's point of view, than the alternative

of ignoring those questions" (p. 146); and (2) "The important thing to me … is not the destination, but the journey. … the real purpose of playing golf is not to put the ball in the hole" (p. 148).

This book is "required reading" for those who are both curious and serious about their faith, particularly those who see in the discipline of computer science more than just another "gee whiz" technology. It is a great book, written by a great person, written from his heart. Please do not miss it.

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SCIENCE AND CHRISTIANITY: Conflict or Coherence? by Henry F. Schaefer III. Watkinsville, GA: Apollos Trust, 2003. 202 pages, index. Paperback; $15.00. ISBN: 097429750X.

In a sense, this book took twenty years to write. In 1984 Schaefer mentioned in passing in a UC Berkeley lecture that he had been in church the previous Sunday. Surprised students asked him why a chemistry professor believed in God, and ever since he has built an expanding roster of lectures answering that query from various angles.

Schaefer is an ASA Fellow who has been nominated several times for a Nobel Prize (*U.S. News*, December 23, 1991), has published more than 900 technical papers and has lectured widely on campuses worldwide. He writes authoritatively, yet accessibly and with enough humor to hold even a sleepy reader's interest. This book is ideal for curricular or extra-curricular reading by students at graduate or undergraduate levels, yet with content deep enough that even seasoned ASA veterans can learn from it.

Chapters include:

- "Scientists and Their Gods." This chapter counters Andrew Dixon White's *The History of the Warfare of Science with Theology* by pointing out that many pioneering scientists were Christians, and quoting an array of contemporary scientists. One of the many citations he uses in debunking the common idea that science forces one to atheism is Richard Feynman's statement, "Many scientists do believe in both science and God, the God of revelation, in a perfectly consistent way."
- "The Non-Debate with Steven Weinberg." This section recounts Schaefer's public exchange of views with the Nobel physicist at Baylor in 2000. Schaefer points out that several of Weinberg's writings seem to hint at cracks in his atheistic profession.
- "The Big Bang, Stephen Hawking, and God."
- "Climbing Mount Improbable: Evolutionary Science or Wishful Thinking." This chapter debunks the common impression that young-earth creationism and atheistic evolution are the only alternatives. He introduces readers to the mediating positions of progressive creationism and theistic evolution, and points out that his wife's and his differing opinions have not marred the happiness of their thirty-seven years of marriage.
- "Quantum Mechanics and Postmodernism." This chapter points out that Heisenberg's Uncertainty Principle does not justify the claim that truth is unknowable, or excuse a student for getting lost on a freeway en route to class!
- "C.S. Lewis on Science and Scientism."
- "The Ten Questions Intellectuals Ask about Christianity."
- "From Berkeley Professor to Christian." This section focuses on his own spiritual pilgrimage, demonstrating ways professors and pastors had moved him patiently and incrementally from skepticism to salvation.
- "The Way of Discovery." This gentle, concluding chapter nudges a seeker of truth to "seriously consider" four questions that the late Francis Schaeffer asked of visitors to L'Abri.

In covering this wide range of subject matter, Schaefer avoids the pedantic polysyllables to which some professors are prone. This is one of those rare books that combines solid substance with understandable style, spiced with humor. I read some books for amusement, others to stretch my mind. This book does both.

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SCIENCE AND CHRISTIANITY: Conflict or Coherence? by Henry F. Schaefer III. Watkinsville, GA: Apollos Trust, 2003. 202 pages, index. Paperback; $15.00. ISBN: 097429750X.

Over the past twenty years, Schaefer, an ASA fellow, has been traveling the university circuit delivering public lectures on science and religion. These lectures, defending the reasonableness of being a scientist and a Christian, have been captured in print to form a very readable book. The scientific topics range from evolution to the big bang. Included is a chapter of responses to questions that have repeatedly been asked after his lectures and personal testimony. Schaefer has an impeccable record as a physical chemist, specializing in computational quantum chemistry, and has been recognized with numerous awards and is speculated to be "a five-time nominee for the Nobel Prize."

The book is a good primer for college students struggling with the truth claims of Christianity or the popular notion of science being antagonistic to Christianity. A glance at Schaefer's smiling picture on the back cover, and diving into the book, one can almost hear the chapters being delivered from a stage. The style is light, but engaging, and peppered with snippets from the many influential scientists, primarily chemists and physicists, that Schaefer has interacted with. As a series of transcribed lectures many ideas are simply stated without elaboration or references, but for those who might read the book before passing it on to a young acquaintance, the reward will be in the several excellent quotes for science and religion courses.

Schaefer has striven to show the reasonableness of being a Christian and a scientist, in part by showing that "many distinguished contemporary scientists have found the truth claims of Jesus Christ to be intellectually compelling" (p. 136). The engaging, humorous style makes the book ideal for undergraduates, Christian and otherwise, who are wrestling through the integration of science with Christianity.

Reviewed by Fraser F. Fleming, Associate Professor of Chemistry, Duquesne University, Pittsburgh, PA 15282.

LIGHT FROM THE EAST: Theology, Science, and the Eastern Orthodox Tradition by Alexei V. Nesteruk. Minneapolis, MN: Fortress Press, 2003. 287 pages, bibliography. Paperback; $22.00. ISBN: 0800634993.

Apart from some who are drawn to notions of top-down causality, it is fair to say that the overwhelming majority of scholars working in the field of science and religion adopt a bottom-up approach. It is not co-incidental that one of the towering figures in the field, John Polkinghorne, subtitled his 1993–94 Gifford Lectures *Reflections of a Bottom-Up Thinker*. The prevailing mindset in today's academy certainly favors approaches that, in Polkinghorne's words, "move from the particularities of experience to the generalities of understanding."

What would a discussion of science and religion look like from the top-down, Christian Platonistic perspective of Eastern Orthodoxy? Unfortunately, the literature dealing with science and theology from the Orthodox perspective is very slim, reflecting the fact that there is nothing comparable to the extensive engagement between science and Western theology in the Orthodox context. Obviously, a single book cannot correct the imbalance, but with *Light from the East* quantum physicist and cosmologist Alexei Nesteruk has done a remarkable job of exploring how Orthodox theology can uniquely inform our understanding of the scientific enterprise.

This is an important addition to the literature of science and religion. *Light from the East* continues the trend of exploring the rich variety and complexity of interactions between science and religion in specific traditions, places, and times. And in that respect Nesteruk provides valuable insight into how the theology and dogma of Eastern Christianity led to a different approach to the natural sciences from that of the Latin Church. The Greek Fathers understood natural processes theologically in terms of Platonic regularities and symmetries (laws) rather than empirically. Whereas Western Christianity saw science as a handmaiden of theology largely devoid of deeper spiritual meaning, the Greek Fathers maintained a liturgical view of science. Nesteruk concedes that this essentially Platonistic approach to science stunted experimental methodology; nevertheless, he maintains that from the Orthodox perspective the scientific enterprise as a whole acquires a sacred quality that offers a more satisfactory understanding of creation in relationship to God.

It is impossible to summarize adequately this often very demanding book in a brief review. Nesteruk, who studied with Roger Penrose and Ilya Prigogine and is preparing for the Orthodox priesthood, ranges with confidence over some very steep intellectual terrain—from Greek Patristic thought, to Kantian philosophy, to highly technical aspects of quantum cosmology. But this book, despite its dense argumentation, is not just for specialists. It contains many insights and challenging notions that have the potential to enliven science and religion discussions, at least those centering on Christianity.

One of the most important and challenging aspects of Nesteruk's project is his bold questioning of the assumption of symmetry between science and theology. He observes that the experiential approach to theology—"theology as worship or liturgy, as participation in the mysteries of the church" (p. 57)—is missing from most discussions of science and religion. Nesteruk suggests that in order to put theology and science on the same level, the mystical dimensions of theology have been eliminated and discursive reason, detached from "the spiritual intellect," has assumed ascendance over both science and theology. While it facilitates comparative analysis, the assumption that science and theology are epistemologically and ontologically uniform is naive, at best. Discursive reasoning, Nesteruk argues, cannot grasp the inner essences of things or the Divine. The Greek Fathers knew this and stressed "natural contemplation" as a mode of spiritual knowledge, which leads to the domain of "learned ignorance." There is a profound apophaticism (theology of negations) at the heart of Orthodox theology: discursive reasoning can point to God's existence but cannot penetrate God's mystery.

Nesteruk's project—and there is no simple way to put this—is to illustrate how theological apophaticism can be combined with cataphatic affirmations in dialectical antinomial fashion to form the basis for a more satisfactory mediation between science and theology than that provided by discursive reasoning. There is insufficient space to do justice to Nesteruk's nuanced maneuver here, but it seems to work when the science under consideration is quantum cosmology or some other theoretical field where high-level mathematical modeling dominates. One does wonder, however, how well Nesteruk's approach translates to less abstract scientific inquiry.

It is refreshing to come across a book that looks at the field from a very different perspective. When that book combines impressive erudition with an unwillingness to kowtow to prevailing intellectual fashions, it is downright bracing. In bringing the outlook of Eastern Orthodoxy to the science and religion discussion, Nesteruk may not reorient the field, but he has produced a book that warrants careful consideration and certainly rewards the effort.

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General Science

TECHNOLOGY AND HUMAN BECOMING by Philip Hefner. Minneapolis: Fortress Press, 2003. xi + 97 pages. Paperback; $6.00. ISBN: 0800636082.

This brief book contains a series of addresses delivered at the 2001 conference of the Institute on Religion in an Age of Science. It begins with images of technology as alien to humanity and its role in the world, or as consistent with them. It ends with a series of proposals: that technology is a sacred space, a medium of divine action and one of the major places today where religion happens and where we wrestle with the God who comes to engage us. The argument along the way is stimulating but very optimistic about technology, sometimes even subjugating the notion of revelation by God to the notion of imaginative search by humans.

Reviewed by David T. Barnard, University of Regina, Regina, Canada.

ORIGINS & COSMOLOGY

GOD IN THE EQUATION: How Einstein Became the Prophet of the New Religious Era by Corey S. Powell. New York: The Free Press, 2002. 277 pages. Hardcover; $24.00. ISBN: 0684863480.

This could have been a good book. Powell, an editor at *Discover* and an adjunct professor of science writing at New York University, has material for a history of modern scientific cosmology with some insights that go beyond standard treatments. The ways in which developments in cosmology have influenced religious beliefs, with emphasis on the role of Einstein's distinctive pantheism, would have been an appropriate part of that discussion.

Unfortunately what Powell has produced is, on balance, a bad book. Its title and subtitle describe an overstated attempt to picture Einstein as a religious "prophet" with lambda, the cosmological constant, playing the role of "God."

What justification is there for such notions? Modern cosmology has influenced religious beliefs and thinking in important ways, and Einstein's own science and religion were inseparable because of his belief in Spinoza's pantheism. (The reference to "the deist god of Spinoza" on p. 44 is one of a number of errors.) While it was generally believed in 1917 that the universe was static, Einstein's acceptance of this idea, which required the use of a cosmological constant in his gravitational theory, may have been strengthened by identification of the universe with the immutable deity of Spinoza. But that hardly singles out the cosmological constant as "God."

Powell tries to give plausibility to his thesis by sprinkling the book with religious terminology like "apostles," "cardinals" and "promised land." The difference between the Einstein and de Sitter models was supposedly like the split between the Essenes and the Pharisees (p. 84), the Curtis-Shapley debate was the Diet of Worms of cosmology (p. 100), and Cecelia Payne-Gaposchkin was "a sort of Mary Magdalene" (p. 119). By giving its physics prize to Penzias and Wilson for their measurements of the microwave background radiation, the Nobel Committee "had now officially converted to the faith of sci/religion" (p. 181). Examples could be multiplied. The use of analogies and metaphors is fine, but these are forced and overdone to the point of absurdity.

But what is "the faith of sci/religion" supposed to be anyway? It is essentially science *as* religion which "blends elements of the experimental and the mystical" (p. 3). Certainly there is such a faith, but Einstein did not found it and the number of people, scientists or not, who accept his form of Spinozistic pantheism is relatively small. One does not convert to a "Church of Einstein" by appreciating the importance of the microwave background, and when astronomical discoveries evoke in Jewish or Christian scientists the kind of awe and wonder expressed in Psalm 8, they are not thereby abandoning biblical faith for something new.

The divinity of the cosmological constant is a lame rhetorical device. As Powell admits, Einstein himself rejected it. Cosmic expansion now does seem to be speeding up, something that can be explained with a positive value of lambda, but most cosmologists consider that a stop-gap and are looking for explanations in terms of dark energy.

Not surprisingly, Powell shows disdain for "old-time religion" which he thinks has been made obsolete. The Christianity of cosmologists like Lemaître and Milne is seen as a kind of embarrassment. He thinks (p. 207) that Augustine was speaking "evasively" in saying that before creation God was making hell for those who pry into mysteries. In reality the bishop was quoting a joke, and went on to give the serious answer that God created time—which Powell cites, apparently without understanding its significance.

The book of course describes the important developments in modern cosmology—the use of general relativity, the discovery of cosmic expansion, emergence of the big bang and steady state models, the microwave background, inflationary theories, and accelerating cosmic expansion. But there are better treatments that do not require the reader to wade through pseudo-theological jargon. Mark William Worthing's *God, Creation and Contemporary Physics* (Fortress, 1996) is a serious treatment of cosmology and theology, and Max Jammer's *Einstein and Religion* (Princeton, 1999) is an excellent treatment of the real "Church of Einstein" (if one must use that phrase). Leave *God in the Equation* aside.

Reviewed by George L. Murphy, St. Paul's Episcopal Church, 1361 W. Market St., Akron, OH 44313.

UNDERSTANDING THE PATTERN OF LIFE: Origin and Organization of the Species by Todd Charles Wood and Megan J. Murray. Nashville: Broadman and Holman Publishers, 2003. 256 pages, endnotes, glossary, bibliography, index. Paperback; $24.95. ISBN: 0805427147.

Wood is an assistant professor at the Center of Origins Research and Education at Bryan College in Dayton, Tennessee. Murray has worked in journalism and human resources and is currently pursuing her elementary teaching certification in Michigan. This book is a textbook intended for Christian colleges committed to a young-earth, six-calendar-day creationism (YEC). It is not an apologetic for YEC; that is an unquestionable given. Nor is it an anti-evolutionary book; evolution is ignored. What it is is an exposition of *baraminology*, a YEC approach to biosystematics.

Baraminology takes its name from the YEC concept of the *baramin*. Frank Lewis Marsh, a Seventh-Day Adventist professor of biology some fifty years ago, coined the word *baramin* by combining the Hebrew words for *create* and *kind*. Marsh believed that the Bible does not teach special creation, i.e., the direct creation of each extant and extinct species, but rather the creation of basic kinds (baramins) which have varied over the 6,000+ years since the creation of the world to produce species as we know them. A baramin might correspond to a family or genus in modern taxonomic terms.

Understanding the Pattern of Life surveys modern baraminology, a creationist biosystematics based on a refined

baramin concept. The chief contributors to the development of baraminology have been Walter ReMine and Kurt Wise. Wise, who did his doctoral work under the late Stephen Jay Gould, is a professor at Bryan College and the general editor of the series of books which includes this text. Modern baraminology seeks to determine on empirical grounds the relationships that exist or existed between species and so to reconstruct the original baramins. This book presents the concepts and methods of modern baraminology and then applies those concepts and methods to the questions of design in nature, biological imperfection, diversification since the Flood, and the geographical distribution of baramins.

Understanding the Pattern of Life contains some surprises for those who believe that all YECs are stuck in the past. We learn that baraminologists accept speciation and microevolution by natural selection; we also find that they accept stratigraphic evidence of ancestry (how they reconcile that with the Flood geology they also accept is not clear). They use homology, molecular homology, the loss of organs and structures, and genetic sequencing as evidence of relationship and degrees of relationship between modern and extinct species. Baraminology shows some affinities with modern cladistics in that it seeks to establish degrees of relationships between taxa without constructing family trees. It should be noted, however, that the authors reject cladistics as well as traditional systematics.

On the other hand, the reader should not be surprised to learn that baraminologists are willing to entertain the wildest speculations regarding earth history. They propose that the Flood was followed by great outpourings of lava beneath the sea, resulting in an increase in ocean temperature of 20° and the consequent formation of a giant hurricane over the north Atlantic which raged for decades. Then, as the oceans cooled, a single ice age resulted. Meanwhile, giant volcanoes erupted all over the world and profound climatic changes occurred. Great mats of vegetation floated on the surface of the oceans, eventually becoming beds of peat and coal. The authors also propose an accelerated version of plate tectonics, "catastropic plate tectonics." No empirical or scriptural evidence is offered in support of any of these speculations; the sole purpose for proposing them seems to be the desire to maintain the young earth hypothesis.

This book is enlightening regarding contemporary efforts of young-earth, six-calendar-day creationists to do justice both to their understanding of the Bible and the empirical evidence in an intellectually honest way. Still, only a reader with a prior commitment to YEC would find this book valuable.

Reviewed by Robert Rogland, Science Teacher, Covenant High School, Tacoma, WA 98465.

GOD AND DESIGN: The Teleological Argument and Modern Science by Neil A. Manson, ed. New York: Routledge. 376 pages, index. Paperback; $25.95. ISBN: 0415263431.

Manson is visiting assistant professor of philosophy at Virginia Commonwealth University in Richmond, and a former Gifford Fellow in Natural Theology. He has collected here nineteen essays dealing with various aspects of the arguments for and against the thesis that the universe in general, and this world in particular, are the products of design rather than chance. The list of contributors is impressive including Elliott Sober, John Leslie, Del Ratzsch, Paul Davies, William Lane Craig, Martin Rees, William Dembski, Michael Behe, Ken Miller, Michael Ruse, and Simon Conway Morris. It should be noted that of twenty-two contributors, fifteen are philosophers. The reader should be prepared for a lot more philosophy than science.

Manson has divided the essays into four categories: general considerations, physical cosmology, multiple universes, and biology. Since I find it impossible to summarize all nineteen essays in a review of less than one thousand words, I will make some general remarks and then comment on a few of the essays I consider particularly worth reading.

Only Craig is willing to assert that the arguments from "fine tuning" to the existence of a Creator are sound; most of the philosophers deny that any certain conclusion regarding the existence or non-existence of a designer can be inferred from the empirical data, even the data indicating fine tuning. None of the contributors denies outright that fine tuning is a characteristic of our universe. Most are unwilling to draw positive conclusions regarding the existence of a designer from the fact of fine tuning. Several of the philosophers present hard to follow logical and/or mathematical arguments for or against the probability of a designer (e.g., Sober, Craig, While). All seem to agree that the hypothesis that multiple universes may exist (1) has no empirical backing, but (2) is proposed primarily to get around the argument that the incredible fine tuning of the physical constants of the universe leads to the hypothesis that the universe was designed. And the majority seem to believe that if there is a Creator, he made a universe with a robust formational economy such that his will was accomplished through the operation of purely natural processes over the course of time. The majority of contributors reject the notion of divine intervention in either the universe as a whole or in the biosphere during the course of natural history.

Though a majority of the essays are philosophical, they may still be of interest to the Christian working in the sciences. I especially recommend the essay by Sober, "The Design Argument," in which he points out the important difference between *likelihood* arguments (which he finds promising though not logically compelling) and *probabilistic* arguments (which he finds inherently flawed). Those who write about the improbability of this or that biological structure or physical constant being what it is, unless it is the product of a creative mind, would do well to read this essay. Ratzsch's essay offers a refreshingly different perspective: Ratzsch maintains that in most cases design is immediately and innately perceived, not recognized as the logical inference to be drawn from the phenomena. Those who follow Ratzsch will find the work of Intelligent Design theorists unnecessary, though not necessarily unsound. D. H. Mellor presents a cogent critique of the multiple universes hypothesis, which should be read by all who are tempted to adopt it as an easy solution to the fine tuning argument for a designer. The essays by Behe, Miller, and Ruse, while cogent summaries of their previously stated views, break no new ground.

A few of the essays are disappointing and a few others are too turgid to be worth plowing through, but the majority of them are worth the read. The Christian who wants to know what contemporary philosophers (especially) and scientists think of the arguments for design would profit from reading this book.

Reviewed by Robert Rogland, Science Teacher, Covenant High School, Tacoma, WA 98465.

LIFE'S SOLUTION: Inevitable Humans in a Lonely Universe by Simon Conway Morris. Cambridge: Cambridge University Press, 2003. 464 pages, index. Hardcover, $29.95. ISBN: 0521827043.

Conway Morris is one of the world's leading experts on palaeobiology. He is also a Christian. His recent book is a remarkable synthesis in the area of evolutionary biology. In particular, it is perhaps the most thorough treatment ever given to the topic of biological convergence, the ability of life to chart a path around all of the obstacles that would bring it to an end or hamper its development and arrive at a solution. As if his synthesis were not grand enough, Conway Morris includes discussions of planetary development and the formation of the solar system to set the stage for a discussion of life on earth. This is scientific creativity at its finest in the hands of a first-rate practitioner and there is a great deal to be learned from such a work. In addition, the readers of this journal will find fascinating the way in which Conway Morris holds his faith in the course of the discussion.

Conway Morris is professor of evolutionary palaeobiology at Cambridge University (a position created for him in 1995). He has received an array of honors, medals and degrees from, among others, the National Academy of Sciences, the Paleontological Society of the United States, Yale University, the University of Uppsala, the European Union of Geosciences and the Geological Society of London. He was elected Fellow of the Royal Society in 1990 and has delivered a host of guest lectureships from The Selby Visiting Fellow for the Australian Academy of Sciences (1992) to The Royal Institution Christmas Lectures (1996) in London. His previous book, *The Crucible of Creation: The Burgess Shale and the Rise of Animals* (Oxford: University Press, 1998), established Conway Morris as a—perhaps the—leading authority on animal life in the Cambrian period.

In the first five of twelve chapters, Conway Morris probes the mystery of the improbability that biological life exists at all, given all of the conditions that have to be just right and all of the processes that must work just so. But, of course, life has done more than just survive; it has thrived and proliferated even in extreme conditions. This fact alone is noteworthy. But even more so, for Conway Morris, is that fact that, along the way, many divergent life forms have developed similar or identical survival strategies—and have done so independently, that is, by way of separate evolutionary paths.

The case Conway Morris makes is that the significance of convergent features is to infer "constraint." Evolution is not free to go in all the directions that more contingent views of the evolutionary process (such as are sometime attributed to S. J. Gould, among others) would have us believe. In chapters six through ten then, Conway Morris details an impressive set of examples that he believes would exhibit this idea of constraint or of convergence. As examples, he identifies chlorophyll and photosynthesis and suggests that replays of evolution (if they were possible) or life systems on another planet (if found) would almost certainly contain a remarkably similar if not identical set of molecules. To develop the case that convergence implies constraint, he pulls out all the stops, arguing that evolutionary convergence is an almost ubiquitous phenomenon. He illustrates with examples from vision, olfaction, echolocation, and intelligence, to name just a few.

What remains in chapter eleven is to ponder the significance of the phenomenon of convergence and to develop a "theology of evolution." He argues that for all of its theoretical improbability, in the actual working out of natural processes, the deck looks stacked: somehow, the evolutionary process seems to be driven inevitably toward only a small range of solutions. Though he offers little evidence beyond the observation of convergence and the implication of constraint, he concludes that these things suggest an underlying structure and purpose—something that is consistent with a creation.

Conway Morris intended this work to challenge several aspects of evolutionary theory. On his Cambridge University web page he says: "It is anticipated that this book will make a considerable impact, as it throws severe doubt on a number of fashionable presuppositions in evolution." The title he originally proposed for the work also focuses on his critique of evolutionary theory: "The Paradoxes of Evolution: Inevitable Humans in a Lonely Universe." But it must be very clear that Conway Morris is no fundamentalist. He has as little patience for anything that smacks of "creation science" as he does for Stephen J. Gould and his notion that if you could roll back evolution and play it again, the outcome would be entirely different. For all of his critique, Conway Morris offers a constructive message and one that is breathtakingly courageous given his context. He asserts that we need to "reunify the scientific world-view with the religious instinct." To do so, he says, "will be our lifeline" (p. 328).

Whether you find yourself agreeing with the overall argument or not, *Life's Solution* is a magnificent work and bound to stimulate scientist and theologian alike.

Reviewed by Steve Delamarter, Professor of Old Testament, George Fox Evangelical Seminary, Portland, OR 97223 and Paul Brown, Asst. Professor (Environmental Studies – Chemistry and Biology), Trinity Western University, Langley, BC, Canada, V2Y 1Y1.

THE COSMOS IN THE LIGHT OF THE CROSS by George L. Murphy. Harrisburg, PA: Trinity Press International, 2003. 213 pages, bibliography, index. Hardcover; $45.00. ISBN: 1563384175.

I have come to believe that theological issues are more important than scientific ones in today's science/faith controversies. Discussions tend to focus on scientific questions (or on biblical interpretation, which at least gets closer to the root problems) while underlying theological issues are ignored. Murphy's *The Cosmos in the Light of the Cross* is therefore a welcome contribution.

Murphy, a physicist, Lutheran pastor and ASA fellow, offers a theological understanding of God's work in the world that science describes. His framework is the "theology of the cross" that was advocated by Luther (and, one could argue, by the Apostle Paul). Rather than starting with human ideas of how we think God should be (which results in idolatry), the theology of the cross looks to God's self-revelation in Jesus Christ, especially the humiliation in which God, in Bonhoeffer's words, "lets himself be pushed out of the world on to the cross." As Paul pointed out, this is scandalous to human preconceptions about God, but it is consistent with the humble, self-sacrificing love revealed in Christ.

With a theology of the cross, we could expect God's action in nature to be masked, so that we need not invoke God to plug explanatory gaps in natural science. This contrasts with a "theology of glory" that expects God to leave "fingerprints all over the evidence." Natural theology is a false theology of glory if it tries to find God by studying nature independently of his self-revelation, but a dependent view, in which what Christ reveals about God provides the context for reading the "book of nature," may be fruitful.

In addition to applying the theology of the cross to understanding God's hiddenness in his creation, Murphy offers insight on the suffering and death that some object to in evolution (and that most of us find objectionable in our own lives). While he does not claim to offer a solution to the "problem of evil," the cross is where theodicy must start, and it is a helpful insight that God confounds human expectations by working his will and ultimately triumphing through suffering and death, both in Christ and in creation.

Later chapters insightfully apply the theology of the cross to ethics and environmental stewardship, particularly as they relate to science and technology. I was less moved by the final chapters on eschatology and worship.

The book is well written, with thoughtful, biblically based theology and scientific insight. Sometimes these are cleverly combined, as when Lamarckian evolution is described as "a kind of biological works righteousness." While the book does not require advanced scientific or theological expertise of the reader, it does require a willingness to give mature and careful thought to the issues and arguments. Those looking for a more introductory book (perhaps for a college student first considering science/faith issues) could turn to Murphy's earlier *Toward a Christian View of a Scientific World*.

A possible deficiency is that the book does not fully address issues of Adam and the Fall, which for some are big obstacles to accepting evolution as God's means of creation. This omission may leave more conservative Protestant readers dissatisfied. Such readers may also be turned off by citations of Old Testament apocrypha and Lutheran and Roman Catholic liturgies. I would encourage my conservative friends to read the book anyway, and not let these items distract them from the biblically sound insights about how Christ and his cross reveal God's nature. This moderate Presbyterian found it very worthwhile.

While some participants in modern science/faith discussions are especially notorious for dodging theological issues, all of us could benefit from deeper theological grounding. *The Cosmos in the Light of the Cross* offers a promising framework for viewing God's work in nature. Its arguments deserve consideration even by those who disagree with Murphy, and I highly recommend the book to anyone who desires to think more deeply and clearly about these issues.

Reviewed by Allan H. Harvey, 1575 Bradley Dr., Boulder, CO 80305.

PHILOSOPHY & THEOLOGY

THE ADVANCEMENT: Keeping Faith in An Evolutionary Age by L. Russ Bush. Nashville, TN: Broadman & Holman, 2003. 142 pages. Paperback; $19.99. ISBN: 0805430342.

Bush is academic dean and professor of Christian Philosophy at Southeastern Baptist Theological Seminary. He holds a Ph.D. from Southwestern Baptist Theological Seminary, has authored two books, and is past president of the Evangelical Philosophical Society and the Evangelical Theological Society. Thus, he has the credentials to address this subject.

The book's title requires a little explanation. The last two hundred years of philosophical writings have been referred to as "modern" and more recently as "postmodern." The author contends that the era of the twenty-first century is ripe for a new descriptive word. He thinks "modern" seems strangely old-fashioned and "postmodern" is surely a temporary name. Perhaps the era through which we are passing could be dubbed the "advancement." Whether this name will be accepted by twenty-first century philosophers remains to be seen. Bush assures us the conflict between the naturalistic world view and the Christian theistic world view will continue.

One feature of this book I especially appreciate is the endnotes (38 pages). Bush makes extensive comments in this portion, and I learned almost as much from them as from the main text. A sample of the chapter headings will give an idea of how thoroughly Bush has prepared for this book: The Rise of Advancement Science; The Theory of Knowledge; Keeping Faith in an Evolutionary Age; and Modern Theistic Alternatives.

Bush concludes the book with a statement of three fundamental truths (speaking from a Christian theistic world view): (1) God exists; (2) the world exists (world = universe); and (3) Jesus, the God-man, exists and is Lord. I found this summarizing statement to be very striking:

> Atheistic philosophy always tends toward relativism, and absolutes are lost in every aspect of intellectual life. Without God as the purposeful Creator of the human mind, that perceptive ability which humans have is itself only a fortuitous result of natural processes. As a product exclusively of natural cause and effect processes, the human mind cannot be free to make an objective value judgment of any kind. Writings by perceptive thinkers such as Camus and Sartre illustrate this point. There is no exit if there is no God. The naturalistic room is sealed without a seam.

Small wonder that postmodern writers tend to believe there is no such thing as absolute truth.

Bush's writing style is concise, clear, and easy to follow. He has extensive knowledge of the main themes he treats. I enjoyed reading the book, and enthusiastically recommend the book to all ASA members.

Reviewed by O. C. Karkalits, McNeese State University, Lake Charles, LA 70609.

DARWIN'S CATHEDRAL: Evolution, Religion, and the Nature of Society by David Sloan Wilson. Chicago, IL: The University of Chicago Press, 2002. 233 pages, notes, bibliography, index. Paperback; $14.00. ISBN: 0226901351.

Over one hundred years ago, psychologist William James delivered his Edinburgh Gifford Lectures on "The Variety of Religious Experience" (TVORE). A committed empiricist, James respectfully examined a wide variety of individual experiences, remaining agnostic (see lecture XX, [New York: Random House, 1929], 509), if not atheistic. It was not until six years later, in his book *A Pluralistic Universe*, that he came to a different stance, as William Dean describes in chapter 4 of his recent book, *The American Spiritual Culture*. (See my review of Dean's book in *PSCF* 55, no. 3 [September 2003]: 207.)

Wilson, professor of biology and anthropology at Binghamton University, offers a companion book to James, investigating religion using the tools of evolutionary biology. Seeing all culture as an organism, he argues that individual religious bodies within it are best analyzed as adaptive groups. (Four other competing models are discussed and rejected). Claiming that symbolic thought is what separates humanity from the animal kingdom, he differentiates between two types of realism, factual and practical. Science, he argues, has chosen factual realism as its "god," but evolution indicates that following practical realism, even though it may not be based on "facts," is often a superior course of action.

This book is heavy reading (as is James' TVORE), but it is well worth studying. One need not agree with Wilson's assessment of the gospels as "poor history" to gain the same kind of understanding of religious organizations as James provided of religious experiences. Wilson's conclusions appear on page 228:

> Those who regard themselves as nonreligious often scorn the other-worldliness of religion as a form of mental weakness. … This stance can itself be criticized for misconstruing and cheapening a set of issues that deserves our most serious attention …
>
> In the first place, much religious belief is not detached from reality … Rather, it is intimately connected to reality by motivating behaviors that are adaptive in the real world … It is true that many religious beliefs are false as literal descriptions of the real world, but this merely forces us to recognize two forms of realism: a factual realism based on literal correspondence and a practical realism based on behavioral adaptedness. An atheist historian who understood the real life of Jesus but whose own life was a mess as a result of his beliefs would be factually attached to and practically detached from reality.
>
> In the second place, much religious belief does not represent a form of mental weakness but rather the healthy functioning of the biologically and culturally well-adapted human mind. Rationality is not the gold standard against which all other forms of thought are to be judged. Adaptation is the gold standard against which rationality must be judged, along with all other forms of thought. Evolutionary biologists should be especially quick to grasp this point because they appreciate that the well-adapted mind is ultimately an organ of survival and reproduction. If there is a trade-off between the two forms of realism, such that our beliefs can become more adaptive only by becoming factually less true, then factual realism will be the loser every time (Wilson 1990). To paraphrase evolutionary psychologists, factual realists detached from practical reality were not among our ancestors. It is the person who elevates factual truth above practical truth who must be accused of mental weakness from an evolutionary perspective.
>
> In the third place, disparaging the otherworldly nature of religion presumes that nonreligious belief systems are more factually realistic. It is true that nonreligious belief systems manage without the gods, but they might still distort the facts of the real world … We know that this is the case for patriotic versions of history, which are as silly and weak-minded for people of other nations as a given religion for people of other faiths.

In Wilson's analysis, there is much of value. I recommend this book highly; it is another "keeper." Unlike James, Wilson did not include comments on his own religious beliefs. I wish he had done so. Such a practice was more acceptable in years past, but in this case the reader must speculate on his own.

Reviewed by John W. Burgeson, 1114 East 4th Ave., Durango, CO 81301.

CONTEMPORARY DEBATES IN PHILOSOPHY OF RELIGION by Michael L. Peterson and Raymond J. Vanarragon, eds. Williston, VT: Blackwell Publishing, 2004. 353 pages. Paperback; $34.95. ISBN: 0631200436.

If you like debates, if you like pros and cons, if you like trenchant reasoning, and if you like rebuttals, this book is for you. Don't let the word "philosophy" in the title put you off, because the topics explored are germane to *PSCF* readers since they are very much related to science and Christian faith.

The twelve topics explored are divided into three main divisions. There are helpful footnotes, notes on contributors, and an index but no bibliography. Each debate topic is presented from two sides with follow-up replies to each presentation. This makes for especially interesting and satisfying reading since controversial points are challenged rather than left dangling.

I will mention just three topics discussed in this book, one from each of the three divisions, although all of the book's topics are relevant, well chosen, and skillfully debated. From division one ("Attacks on Religious Belief"), the age-old Achilles' heel of theism is explored,

namely, "Is Evil Evidence Against Belief in God?" William L. Rowe, philosophy professor at Purdue University, says yes; Daniel Howard-Snyder, philosophy associate professor at Western Washington University, and Michael Bergmann, philosophy assistant professor at Purdue University, say no.

From division two ("Arguments for Religious Belief"), the cosmogonic question is discussed, i.e., "Is God's Existence the Best Explanation of the Universe?" Bruce R. Reichenbach, philosophy professor at Augsburg College affirms; Richard M. Gale, philosophy professor at the University of Pittsburgh, denies.

Division three ("Issues Within Religion") considers the conundrum "Does God Take Risks in Governing the World?" William Hasker, philosophy emeritus professor at Huntington College says "yes," to the question which he forms this way: "God takes risks if he makes decisions that depend for their outcomes on the responses of free creatures in which the decisions themselves are not informed by knowledge of the outcomes" (p. 219). "God Does Not Take Risks" writes Paul Helm, theology and philosophy professor at Regent College.

I will mention three more debate topics that you may find appealing. John Worrall thinks "Science Discredits Religion." Del Ratzsch doesn't think so in his "The Demise of Religion: Greatly Exaggerated Reports from the Science/ Religion Wars." Stephen Davis argues it is rational for Christians to believe in the resurrection; no, it isn't says Michael Martin. Dean W. Zimmerman contends "Christians Should Affirm Mind-Body Dualism"; "Christians Should Reject Mind-Body Dualism" responds Lynne Rudder Baker.

The arguments presented are sometimes quite detailed, finely nuanced, and very difficult to follow. In the end, neither side can claim victory since no conclusions are reached within the book. However, whatever your position on these issues, to explore them with curiosity and an open mind will substantially reward you. I recommend this book to all those interested in exploring philosophy, science, theology, and questions which have confronted humanity from antiquity.

Reviewed by Richard Ruble, John Brown University, Siloam Springs, AR 72761.

A PHILOSOPHICAL, SCIENTIFIC, AND THEOLOGICAL DEFENSE FOR THE NOTION THAT A GOD EXISTS by Hal Flemings. Lanham, MD: University Press of America, 2003. 136 pages. Paperback; $28.00. ISBN: 0761826475.

Flemings formerly taught Hebrew at Foundation College in Dan Diego. He now teaches insurance and securities at the Pioneer School of Insurance. His religious journey extends from being a "'Born Again' Baptist, then to a skeptic, and finally to one of Jehovah's Witnesses" (p. x). Flemings writes this book from an overtly theistic viewpoint: "Make no mistake, I am a Christian theist" (p. 55).

This book presents a parsimonious history of the debate/question on whether God exists. In doing this, Flemings defines "God," presents options offered by theists, pantheists, atheists, and agnostics, gives a history of the debate from ancient to modern times, distills the negative and positive arguments, gives answers to objections raised by atheists and agnostics, deals with the problem of evil, presents a non-circular argument for God's existence, and argues for the uniqueness of the Bible in deciding the question.

The book has eleven relatively short chapters with name and subject indices. Some flaws mar the book. The page numbers in the index are incorrect. For example, "Upanishads" is referenced to page 181, but there are only 136 pages in the book. An antecedent is missing for "they reject theology" (p. 18). "Soon" (p. 19) should be "some" and "if" (p. 90) should be "is." Despite the publisher's contention, Flemings does not present the problem of evil from a new perspective.

The problem of evil and/or suffering is often considered the Achilles heel of theism. Flemings states it this way: "How can a loving and all-powerful God tolerate evil?" (p. 89). His answer will not satisfy some readers. Many evangelicals will object to Flemings' position which denies God's omniscience, omnipresence, and eternal punishment of the wicked (pp. 93–6). Atheists will accuse him of retreating to the "God in the gaps" position of "we don't know the reason why God doesn't stop the suffering in the world, but he must have one."

Flemings' book has many good features. For one, it is concise. He gets to the point quickly and with trenchant quotes. For another, he fairly presents other viewpoints: "in this work, I do not wish to muffle the voices of those at odds with me" (p. 55). And he doesn't. He allows them to present their positions, often in their own words. Finally, in presenting his convictions, Flemings' rhetoric is irenic and non-inflammatory.

Overall, I liked the book. Flemings' arguments are easy to follow, and he includes some terrific quotes. This book has something to offer to both the neophyte and scholar. With the considerations in this review in mind, I am pleased to recommend it.

Reviewed by Richard Ruble, John Brown University, Siloam Springs, AR 72761.

Religion and Christian Faith

DOUBT: A History by Jennifer Michael Hecht. San Francisco, CA: Harper Collins Publishers, 2003. 551 pages. Hardcover; $27.95. ISBN: 0060097728.

A philosopher wrote that if he could say one thing to God (god), it would be: "Not enough evidence." Hecht echoes this sentiment when she writes that "there is no universally compelling, empirical, or philosophical evidence for the existence of God, a purposeful universe, or life after death" (p. xi). Thus, the ambiguity of the evidence provides fodder for this book's theme, namely, doubt versus faith. Friedrich Heinrich Jacobi expressed this inner conflict when he stated his own view: "I … am a heathen in my reason and a Christian with my whole heart."

Hecht traces doubt from antiquity to modern times. Thus she includes, among many others, Confucius,

Socrates, Wang Ch'ung, Hypatia, Marie Curie, Ludwig Wittgenstein, Margaret Sanger, and Frank Zappa. The subtitle of the book is "the great doubters and their legacy of innovation from Socrates and Jesus to Jefferson and Wittgenstein." She even includes "The Scale of Doubt Quiz" to allow readers to determine where they might fall on the scale of hard-core atheist, rationalist materialist, agnostic, or believer.

Is a book review on "doubt" appropriate for a journal with the word "faith" in its title? Yes, because doubt is merely the mirror reflection of faith. (It is sometimes contended that despair is the opposite of belief, but do most atheists exhibit despair?) Or to put it another way, faith is the other side of the same coin. Doubt is a somewhat more subtle expression of faith, i.e., doubt requires faith that what you doubt is erroneous. Hecht's book could just as accurately be titled "Faith." In order to have doubt, there must be something to question. The Skeptics would have had no ammunition for doubt if not for the Epicurean, Stoics and Neo-Platonists. Further support that faith is always at play in doubt is Hecht's inclusion of Jesus, Paul, and Augustine as examples of doubters. The Skeptics considered those who held other viewpoints "dogmatists," a sure indication that faith was in play on both sides.

Some of the conclusions Hecht documents, which other writers have trumpeted, are: (1) most people have always believed in god (gods); (2) many people have sought to placate god via worship and sacrifice; (3) the arguments used for theism and atheism are ancient; (4) Jews and Christians are the only people who have believed in a bodily resurrection; (5) doubters have often driven science (they seek sense via empiricism and not via religion or tradition); (6) humanity's origin, meaning, and destiny have always haunted thinkers; (7) religion often supports patriotism and public order; and (8) people experience pain by not being accorded significance: "The experience of feeling important but not being treated as important by the universe is the source of much woe" (p. 111).

Hecht is a historian and poet who teaches at Nassau Community College. Her other books include *The End of the Soul* and *The Next Ancient World*. In advance of its publication in November 2003, *Doubt* received many accolades including one from Lake Wobegon's Garrison Keillor who thinks the book is "a bold and brilliant work and highly readable … it's the world religions course you wish you'd had in college." This book will strike a chord for those who like to study theology, philosophy, science, and history. And if like Thomas, the reader has experienced both doubt and faith, this book may have an added attraction by providing insight and/or affirmation.

Reviewed by Richard Ruble, John Brown University, Siloam Springs, AR 72761.

LUTHER: Biography of a Reformer by Frederick Nohl. St. Louis, MO: Concordia Publishing House, 2003. 250 pages. Hardcover; $14.99. ISBN: 0758606516.

This is a book for those who want to brush up on the issues involved in the Protestant Reformation without an elongated treatment of subsidiary points. For example, how did Luther's movement come to be called the Protestant Reformation? This came about when the Edict of Worms required Catholic teachings in Lutheran states. The Lutheran princes demanded that Lutheran lands remain strictly Lutheran with the statement: "We *protest* before God and before men." From that time on Lutherans were known as the Protestors or Protestants.

One of the benefits of the Protestant Reformation was the liberating of the individual to pursue an individual faith based on conscience. This had obvious benefits to the scientific community which freed from dogma could pursue empiricism. Other Reformation dividends included worship services which use the vernacular (instead of Latin) presentation of the sacramental.

The Counter Reformation was an acknowledgment that a cleansing and reforming of the church was needed. The Protestant Reformation had a salutary effect on the sacraments including the eliminating of indulgences, the reinterpretation of the meaning of the Eucharist, and the provision of marriage for reformed priests. The church is the beneficiary of Luther's commentaries, hymns, catechisms, sermons, and courageous stands.

The publication of this book was timed to coincide with the release of a theatrical presentation of Luther. By the time this review sees print, the film will most likely be available on video which will visually dramatize some of this book's events. (The book includes some photographs from the film.) This biography provides enjoyable, interesting, relevant, and concise reading about a man who made an enormous impact on his time and ours.

Reviewed by Richard Ruble, John Brown University, Siloam Springs, AR 72761.

CELEBRATING BIBLICAL FEASTS by Martha Zimmerman. Minneapolis, MN: Bethany House, 2004. 191 pages. Paperback; $12.99. ISBN: 0764228978.

This is a neat little book than can provide help in celebrating the Christian faith. A paper completed for a seminary course eventually motivated Zimmerman to write this book. Her search for materials to use in educating her children led her to "the marvelous truths of the Old Testament with New Testament understanding" (p. 10).

In this book, Zimmerman gives advice on how to celebrate these Old Testament Jewish celebrations: Sabbath, Passover, the Omer, Shavouth, Rosh Hashanah, Yom Kippur, and Sukkoth. If you do not recognize the names or significance of these festivals, if you desire to educate yourself, if you desire to increase your celebratory experiences, this book could help. The author explains the meaning of each celebration, provides guidance in worship, and even includes food recipes and diagrams where appropriate.

To those who question the wisdom of observing or celebrating Jewish feasts, Zimmerman comments: "… celebrating the feasts are not to be a legalistic set of rules to earn God's favor but are to be used as teaching tools …" (p. 16). The Apostle Paul also spoke to this topic: "Some think that Christians should observe the Jewish holidays … but others say it is wrong … On questions of this kind everyone must decide for himself" (Romans 14, TLB).

Jewish scholar David H. Stern praises this book and perhaps best summarizes its thrust and appropriateness: "Why should we Jews have all the fun? This book shows Christians how to incorporate the joy, wisdom and human interrelating of biblical celebrations into their family and communal life" (p. 1). Good advice.

Reviewed by Richard Ruble, John Brown University, Siloam Springs, AR 72761.

Social Science

THE FRACTURE OF GOOD ORDER: Christian Antiliberalism and the Challenge to American Politics by Jason C. Bivins. Chapel Hill, NC: The University of North Carolina Press, 2003. 181 pages, notes, bibliography, index. Paperback; $18.95. ISBN: 0807854689.

This interesting book looks at a growing phenomenon in the USA, the rise of protest against the political order and civil authority of government by organized groups claiming Christian grounds for their actions. This is not a "right" vs. "left" set of issues, but one which transcends both. The term "antiliberalism" denotes a rebellion against the modern state, against the political tradition usually associated with John Locke, Adam Smith, John Stuart Mill, and others. Christian antiliberals are often greatly disparate from one another. Nevertheless, all share three convictions: (1) an aversion to the centralization of power; (2) a belief that politics is hostage to the elite; (3) and a conviction that the government is hostile to Christian morality.

Bivins, assistant professor of religious studies at North Carolina State University, closely examines three very different antiliberal groups: the Sojourners, whose cause is the poor; the New Christian Right, whose cause is individual ethics; and the Berrigans, whose cause is the making of war machines. Each of these, operating out of a sense of what they see as a particular Christian position, believe that society's trends in the past fifty years have made it very difficult to practice religion faithfully. Each group questions governmental legitimacy, arguing that the present political order lacks legitimacy on two counts: (1) a lack of moral authority; (2) and a lack of sufficient opportunity for citizen input.

What do these three groups have in common? In chapter 1, Bivins suggests that all three confront governmental power by the practices of disobedience, disruption, and conflict as public witness against what each sees as injustice. For them, "the terrain of the political is inseparable from the terrain of religion" (p. 34). They are "… particularly agonistic, directly confrontational, and willfully out of step with expectations about what it means to be religious" (p. 10). Bivins posits four defining antiliberal features: (1) "political illegibility," which simply means that the reigning paradigm of "right vs. left" is of no value in understanding them; (2) "the sacred register of politics," which observes that each group politicizes their own understanding of Christianity, generally claiming for themselves "a kind of religious righteousness" (p. 162); (3) "ritual protest," which draws on each group's power to perform religious rituals (group prayers, etc.) in the public places they feel are hostile to their understandings of Christian moral codes; and (4) "*koinonia*," their efforts to create communal places of refuge from what they see as an alien socio-political structure. Bivins examines each of these features in each of the groups in chapters 2, 3 and 4. Chapter 5 summarizes his findings.

What should our reaction be to an antiliberal group? Should we marginalize it by ignoring its message and refusing it a place at the political dialog table? Bivins argues that this is what is generally done (witness the courts' refusal to let the Berrigans state their grounds for their actions), and that such a course of action is precisely wrong. In modern culture, there are "… tacit assumptions about what constitute socially acceptable religion, assumptions that function to exclude certain forms of religion from the conversation" (p. 167). Bivins contends that the resulting animosity can be addressed, and at least partially overcome, by a fuller public engagement with antiliberal group spokespeople. At the very least, such actions would address a key antiliberal criticism against the political culture. Bivins draws on the writings of Stephen Carter for support. Both argue that religions ought not be dismissed as illegitimate participants in political discourse. He writes:

> Liberalism's goals are worth protecting, but the effort … has too often employed antidemocratic mechanisms that constrain participation … Liberalism can better survive … by welcoming multiple forms of action … Such an approach may actually better serve to protect individual liberty and public civility … (p. 174).

This book is not an easy read; it requires one to enter into the author's word definitions and think about society and politics from an unfamiliar stance. By selecting three very different groups to analyze, Bivins has successfully been able to go deep into the gut issues of Christian identity movements, focusing on their commonality. I recommend it highly.

Reviewed by John W. Burgeson, 1114 East 4th Ave, Durango, CO 81301.

THE BEETHOVEN FACTOR: The New Positive Psychology of Hardiness, Happiness, Healing, and Hope by Paul Pearsall. Charlottesville, VA: Hampton Roads Publishing Company, 2003. 258 pages. Hardcover; $22.95. ISBN: 1571743979.

Pearsall thinks that reflection on the good life should not be left to the philosophers, poets, and novelists. Positive psychology, which took root in Akumal, Mexico, in 1999, should have a role. A small group of psychologists wanted to emphasize what is "strong, right, and wonderful about the human spirit" (p. xiii). This was a new direction for a psychology which had traditionally been about repairing misfunction. Positive psychology seeks to address people's ability to flourish and savor life despite the chronic suffering often involved. Positive psychology builds on the work of pioneers such as Eric Erickson, Abraham Maslow, Carl Rogers, and many others who have addressed people's positive proclivities.

A leader in the new movement is E. P. Seligman, former president of the American Psychological Association,

founder of the Positive Psychology Network, and author of *Authentic Happiness*. Seligman and others continue writing and research on the nature and potential for improvement of human coping abilities. How can people best transcend the "slaughterhouses and indecencies of the human condition," "the serial suffering of multiple miseries" (p. xxvi)?

Pearsall asks "Why Is There Suffering in the World?" and then gives this answer: "life is made difficult so it can be made more authentic, real, and intensely meaningful" (pp. xxvii–xxviii). What does Pearsall say to readers who respond that they prefer their run-of-the-mill, common denominator, hum-drum, non-authentic, painless life? Such lives, Pearsall contends, are less authentic, less real, and less meaningful.

The Beethoven Factor's two main sections ("Thriving through the Tough Times" and "A Thriver's Manual") contain 12 chapters with endnotes, a glossary, a bibliography, and an index. Each chapter begins with a pithy quote such as Longfellow's observation that "the lowest ebb is the turn of the tide." William James is succinct in describing the positive, overcoming attitude: "All natural goods perish; riches take wings; fame is a breath; love is a cheat; youth and health and pleasures will vanish. Ultimately, the skull will grin at the banquet, but there are those who live habitually on the sunny side of their misery line." (James' thought is reminiscent of 1 John 2:16–17: "The world and its desires pass away …")

All of the suggestions in *Beethoven* for living on the positive side can be found in the writings of ancient philosophers. Paul's epistles are robust with positive concepts such as how to thrive, how to find meaning in misery, and how to nurture hardiness, resilience, and hope. Pearsall's book conceptualizes, illuminates, and illustrates these time-tested principles. This book, easily understood, fits into the category some people label "pop psychology" or "self-help" (Pearsall claims his book does not fit this category). But what good is psychology if it does not help improve the human condition?

Pearsall is a psychological pragmatist, but he bases his conclusions on tried and true philosophical, psychological, and for the most part, principles congruent with biblical content. Although this book is not overtly written from a Christian perspective, Pearsall thinks that humans are equipped with a "God-given talent for thriving" (p. xxxi). And he quotes a thriver who says, "God sometimes tears at the fabric of our life so that we may learn to be better weavers …" (p. xxviii). Prayer is also included in a thriver's repertoire.

By the way, the title of the book is based on Beethoven's ability to thrive despite handicaps. Beethoven, although "gravely ill and totally deaf" was able to conduct the premiere of his Ninth Symphony, the *Ode to Joy*. "At that moment, and not only in spite of but because of his adversity, Beethoven had discovered the art of thriving." This book holds out the invitation, inspiration, and direction for its readers to do the same.

Reviewed by Richard Ruble, John Brown University, Siloam Springs, AR 72761.

THE BONE MUSEUM by Wayne Grady. New York: Four Walls Eight Windows, 2000. 291 pages. Paperback; $14.99. ISBN: 1568582048.

Nature writer Wayne Grady and paleontologist Phil Currie set out on a quest to learn about dinosaurs. What they discover and observe in their travels becomes entertaining reading.

There are three main easily read sections: an introduction, a dig in Patagonia, and a visit to the Badlands to study fossils. The author is a layman who introduces the reader to a number of scientists pursuing their specialized interests. Grady notes the bonhomie amongst this team, isolated at a bone site.

There is a useful discussion relating to the bird-like and the lizard-like dinosaurs. Grady relates modern postulates to this history, uncovered by the paleontologists. His story also concerns extinctions in nature. Some of Grady's digressions will be of limited interest except to fellow Americans.

Some corrections need to be made. He quotes the cliché that ontogeny recapitulates phylogeny, but Ernst Haeckel's fudging of his reported results is now well known. It should be noted that at an early stage of fetal development in the human there are no gill slits. The pharyngeal arches found belong to the normal mammalian pattern of growth. Another correction relates to the abutting of the African landmass against Europe. When this caused closure of the strait at Gibraltar, the Mediterranean Ocean did not drain away but the waters evaporated, leaving a vast salt deposit that again is now covered by the sea.

Grady is interested in why people are intrigued with dinosaurs. This is the premise of his book which is enjoyable reading. The book has a clear typeface, an attractive cover and a sound binding. The lack of references, except for the occasional one in the text limits it usefulness for other purposes.

Reviewed by Ken Mickleson, pediatrician, 105 St. Andrews Road, Epsom, Auckland 1001, New Zealand.

UNLIMITED LOVE: Altruism, Compassion, and Service by Stephen G. Post. Philadelphia: Templeton Foundation Press, 2003. 232 pages. Paperback; $24.95. ISBN: 1932031316.

The John Templeton Foundation in 2001 provided funds for starting the Institute for Research on Unlimited Love. The goal of the Institute and this book is to define unselfish love and its relationships to science, ethics, and religion. The first sentence of the Institute's statement provides a definition of unlimited love: "The essence of love is to affectively affirm as well as to unselfishly delight in the well-being of others, and to engage in acts of care and service on their behalf …" (p. vii).

How can science play a role? Science cannot fully explain why people "live in ways more or less consistent with unlimited love. Perhaps the most important thing we can do is simply to tell the stories of unlimited love as these brighten the world in which we live. Love is less taught didactically or studied scientifically than it is *transmitted*

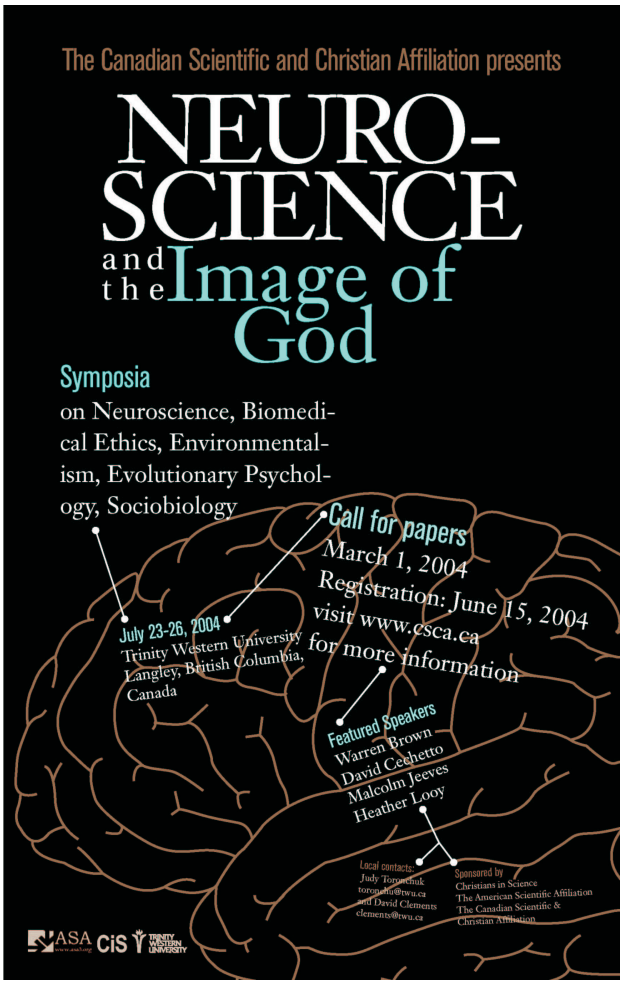
through models" (p. x). Teilhard de Chardin observed that the scientific understanding of love would be as significant as the discovery of fire.

The titles of the book's three parts best describe its contents: what is unlimited love; scientific, ethical, and religious perspectives; and, developing a scientific field. The last of eleven chapters lists the 21 funded projects (at a cost of $1,730,000) selected from 85 submissions. Notes and an index complete the volume.

A companion volume to *Unlimited Love* is entitled *Research on Altruism and Love: An Annotated Bibliography of Major Studies in Psychology, Sociology, Evolutionary Biology, and Theology*. This book contains four annotated bibliographies: (1) religious love and science; (2) current research on personality and altruism in social psychology; (3) altruism and love in biology and evolutionary psychology; and (4) helping behavior, religious organizations, and voluntary associations.

Post is president of the Institute for Research on Unlimited Love, professor of bioethics in the medical school at Case Western Reserve University, and author of *The Moral Challenge of Alzheimer's Disease*. He thinks that "In the final analysis, unlimited love is what God has for each and every one of us, and this is good news" (p. xii).

Reviewed by Richard Ruble, John Brown University, Siloam Springs, AR 72761.



Letters

Patriarchal Ages in Genesis

I was very interested to read Carol Hill's article "Making Sense of the Numbers of Genesis" (*PSCF* 55, no. 4 [Dec. 2003]: 239–51), and I would fully support her conclusions. However, I feel that she has considerably *understated* the case for a symbolic interpretation of the ages in Genesis 5 and 11 by failing to notice various other mathematical patterns in which the number 7 is prominent. I explored these in detail in my MA Dissertation *The Genealogies of Genesis: A Study of their Structure and Function* (London Bible College, 1989, unpublished), and at a popular level in *Discovering Genesis: Crossway Bible Guide* (by Richard and Tricia Johnson [Leicester: Crossway Books, 2001], 46–7; 62–4). Let me briefly mention the relevant facts, although for the sake of simplicity I will only look at the patriarchal ages "at death."

It should be noted that ages are given, or can be calculated, for each generation between Adam and Moses. These are as follows:

Genesis 5		Genesis 11		Elsewhere	
Adam	930	Shem	(600)	Abraham (Gen. 25:7)	175
Seth	912	Arpachshad	(438)	Isaac (Gen. 35:28)	180
Enosh	905	Shelah	(433)	Jacob (Gen. 47:28)	147
Kenan	910	Eber	(464)	Levi (Exod. 6:16)	137
Mahalalel	895	Peleg	(239)	Kohath (Exod. 6:18)	133
Jared	962	Reu	(239)	Amran (Exod. 6:20)	137
Enoch	365	Serug	(230)	Moses (Deut. 34:7)	120
Methuselah	969	Nahor	(148)		
Lamech	777	Terah	205		
Noah	950				

The ages in brackets are those which are not given directly in the text, but which can easily be calculated.

If one adds these 26 generations together, the total is 12,600 (= 70 x 180); this backs up Carol Hill's point that the symbolism of the figures reflects both the sexagesimal (base 60) system of Mesopotamia and the Hebrew sacred number 7 (or 70). (Incidentally, for the mathematicians, 12,600 is the lowest number with precisely 70 factors; or 72 if 1 and itself are included).

However, the really interesting pattern emerges if one concentrates on the first and third columns, which each begin and end with a character with whom God made a significant covenant (Adam/Noah/Abraham/Moses). Here are the key features of the pattern: