Book Reviews

ETHICS

THE HUMAN EMBRYONIC STEM CELL DEBATE: Science, Ethics, and Public Policy by Suzanne Holland, Karen Lebacqz, and Lurie Zoloth, eds. Cambridge, MA: The MIT Press, 2001. xxvii + 257 pages, 3 illustrations, glossary, index. Paperback; $24.95. ISBN: 0262582082.

Appearing in the series "Basic Bioethics," this book has four divisions: (1) "The Science and Background of Human Embryonic Stem Cells," (2) "Raising the Ethical Issues," (3) "Angles of Vision," and (4) "Public Discourse, Oversight, and the Role of Research in Society." The book's twenty chapters are written by nineteen writers of different religious and scientific backgrounds.

This book encourages a very necessary debate: Should science engage unlimitedly in embryonic stem cell research? Is an embryo a human, and if not, when does "human" life start? How do we view pluripotent cells, which can grow into many different human organs? Answering these questions is difficult, but decisions should not be left to the ethicists employed by pharmaceutical companies. If they are, the end results may be what is described by Gilbert Meilaender: "… we may sometimes have to deny ourselves the handiest means to an undeniably good end. In this case the desired means will surely involve the creation of embryos for research and then their destruction. The human will, seeing a desired end, takes control, subjecting to its desire even the living human organism" (p. 144).

The government or some oversight committee should be involved in making these decisions. Cynthia Cohen writes that "a public oversight body is required that will monitor this work as it is carried out across the country. The body would also prepare for the prospect that significant issues of public concern related to the use of cloning and germ interventions will have to be addressed" (p. 220).

How do we decide when an embryo becomes a human being? I like the approach of some Jewish writers who look at this question from a Hebrew Bible perspective. There are other views presented in this book, and they all add to the discussion and provide information for considering this most important question.

Reviewed by Jan de Koning, 20 Crispin Crescent, Willowdale, ON, M2R 2V7 Canada.

TRUST US, WE'RE EXPERTS: How Industry Manipulates Science and Gambles with Your Future by Sheldon Rampton and John Stauber. New York: Penguin Putnam Inc., 2001. 359 pages, index; references; notes. Hardcover; $24.95. ISBN: 158542059X.

"Torture the data until it confesses!" It was 1955; the research for Professor X was not giving the expected results. I looked up in horror, for if my physics education had taught me anything, it was that honesty was not the "best" policy, it was the "only" policy. Thankfully, it was immediately obvious that my mentor was not at all serious!

This book is extremely disturbing to an idealist, and I confess to being one. If only ten percent of the stories related here are factual, then there are "scientists" in abundance who simply do not subscribe to normative professional ethics. For monetary gain, they are not shy about arguing "junk science," citing only favorable evidence while ignoring the contrary, thereby risking not only their own reputations, but also that of the profession we all love. The authors cite an abundance of instances, some involving scientists of nationwide stature. Frankly, I felt sick as I read this book.

It is an exposé of the dishonest policies that all too often lie behind the making of "industry experts." The authors show how easy it is to buffalo the media, and by extension, the public, by pseudoscientific claims made by "real" scientists whose intellectual heritage is that of nineteenth-century snake oil salesmen.

The authors, who are associated with the nonprofit Center for Media and Democracy, pull few punches, naming names and footnoting incriminating actions. Suppose you were offered $10,000 to write a short letter for the Tobacco Institute to the *Journal of the American Medical Association* supporting their cause. According to this book, one biostatistician did so, and the letter was published. Would you accept over $600,000 in consulting fees from a certain company and then not mention this when defending their product in Congressional hearings on that product's safety? A well-known scientist did. He testified in the Nestlé infant formula marketing story (pp. 256–7).

There are many stories like these. In all of them, some scientists "sold their souls" for personal gain, disgracing themselves and their profession. The book makes a strong case for complete disclosures of corporate influences and possible financial conflicts for those who write in scientific journals and testify as "experts" in Congressional hearings.

The authors also argue long and hard for the well-known "precautionary principle," which, simply stated, disallows products and services from the marketplace until they are reasonably and rationally checked out. But today's regulatory system, they argue, allows almost anything to be released unless it is "proven unsafe," meaning measurable harm can be shown. In other words, preventative action cannot be taken until the damage has already occurred.

To conclude this review, I will illustrate its disturbing message by telling an old, stale joke.

> *Why do they bury scientists twelve feet down?*
> *Because, deep down, they are really good people.*
> *Oops! Not funny! That should be some other profession, not "scientists!"*

After reading this book you will not be so sure. Other professions have their share of shysters. So does the scientific profession. The public just has not picked up on us yet.

The book is a "keeper" and is highly recommended. But it is not "happy" reading. It is clear that far too many

in our profession have lost their way. Are they a small minority? I would like to think so. Do they have a bad influence in our society? Yes. Is this a good thing? Clearly, no. Can anything be done? You'll have to answer that for yourself. Edmund Burke once said: "Nobody makes a greater mistake than the person who does nothing because only a little can be done." At least, buy the book. And then tell people about it.

Reviewed by John W. Burgeson, Retired Government Physicist and IBM Computer Engineer, Stephen Minister, First Presbyterian Church, Durango, CO 81301.

FAITH & SCIENCE

PATHS FROM SCIENCE TOWARDS GOD: The End of All Our Exploring by Arthur Peacocke. New York: Oneworld Publications, 2001. 198 pages, index, bibliography, glossary, notes. Paperback; $16.95. ISNB: 1851682457.

Peacocke, theologian and biochemist, promises in this slim volume to reunite science and religion, which he terms "worlds at war." Peacocke has published over 200 papers and twelve books on this topic and similar subjects, and received the Templeton Foundation Prize in 1995 for his best-known work, *Theology for a Scientific Age*. He is currently director of the Ian Ramsey Centre for the Study of Science and Religion at Oxford University.

Peacocke has a view of Christianity that differs greatly from more conventional (classical) views. On page 31, he rejects the notion of "faith seeking understanding," which for many of us in the ASA has been exactly what we thought we were about, and argues "I would urge that the only defensible theology is one that consists of understanding seeking faith … in which 'understanding' must include that of the natural and human worlds which the sciences … have unveiled." He (properly, I think) suggests that the inference to the best explanation (IBE) principle must be, in all investigations, scientific or religious, the "rule of the game." But then he makes other assumptions. On page 34, he writes, "… there is no evidence for any existing entities other than those emerging from the natural world." He "damns with faint praise" the Scriptures writing: "It (the Bible) remains an irreplaceable resource in our exploration towards God. Yet …"(p. 35). Peacocke rejects classical theism, following the arguments of Hume. Miracles do not (and did not) happen, much of what the Gospels report as the sayings of Jesus are too problematical to accept (particularly those in the Gospel of John), and if one is "scientifically educated," one understands all this— for such a person "… it is incoherent ever to accept the presupposition that God intervenes in the created processes of the world … A God who intervenes could only be regarded … as being a kind of semi-magical arbitrary Great Fixer or occasional Meddler …" (p. 57).

Peacocke calls himself a panentheist, carefully differentiating that position from pantheism, and contrasting it with what he terms "supernatural theism," or what most persons understand as classical theism, of which Christianity is a major part. He also uses the term "theistic naturalism" to describe his stance, as does David Ray Griffin, also a self-described panentheist. Griffin examines the religion / science question in a much more detailed manner than Peacocke in his book *Religion and Scientific Naturalism*. Still another modern panentheistic writer is Marcus Borg, who, in *The Meaning of Jesus*, debates this theological view with fellow scholar N. T. Wright, a conservative.

Is Peacock's book worth reading? I think it is. It is a "keeper" in my library. As a "supernatural theist," I learned much from this book about panentheism, and where it necessarily leads. It does not, I believe, lead to a rejection of the Christian faith, but it does point to a vastly different, and weaker, version of that faith, one, for example, in which petitionary prayer is a whistle while crossing the graveyard, and a god (God?) who is strangely impotent. But read this book for yourself; at least check it out from the library. It is worth that much anyway. Panentheism is alive and well in theological and scientific dialog today, and we ignore it at our peril.

Reviewed by John W. Burgeson, Stephen Minister, First Presbyterian Church, Durango, CO 81301.

A SCIENTIFIC THEOLOGY: Nature, vol. 1 by Alister E. McGrath. Grand Rapids, MI: Eerdmans Publishing Co., 2001. xx + 325 pages. Hardcover; $40.00. ISBN: 0802839258.

The relationship between science and Christian faith is, of course, the theme of this journal and thus quite familiar to readers of this review. What McGrath contributes in this first volume of a multi-volume work is a careful exploration of this relationship with insights from history and philosophy. This volume gives an explanation of the approach (in 78 pages) and then concentrates on the concept of nature. Subsequent volumes will deal with reality (supporting a realist position) and theory (dealing with how science and theology represent reality).

McGrath is a careful analytic thinker and expositor. The argument here is very detailed and includes dialogue with and response to many other thinkers from the ancient classical period through the history of the church and its critics, up to the present period. The presentation is thoroughly documented. While this is important for a work of this type, at times some readers might wish for the compressed summary of the author's own views that, while shaped by his interaction with other thinkers, are found only after considerable and careful reading. Perhaps another form of presentation for a more general audience will appear.

The major thrust of this volume is that nature is not an univocally defined concept. Our sense of nature is shaped by the thinking we bring to our perception of it. In part, nature is a socially constructed notion. However, as the author insists, only in part—there is a reality that we aspire to understand, some postmodernists notwithstanding. Creation is presented as a term sometimes to be preferred by Christians. Karl Barth's resistance to a natural theology is discussed at length and set in the context of the broad stream of Christian thought that is more accepting of a legitimacy in natural theology.

Those who affirm the statement of faith of the ASA will find this an attractive book. It provides detailed analysis and argument for positions that many of us may hold

naively, or at least without understanding some of their historical and philosophical contexts. It is worthy of careful study. I look forward to reading the other two projected volumes in the series.

Reviewed by David T. Barnard, University of Regina, Regina, SK, S4S 3X4 Canada.

SCIENCE IN THEISTIC CONTEXTS: Cognitive Dimensions, vol. 16, *Osiris* by John Hedley Brooke, Margaret J. Osler, and Jitse M. van der Meer, eds. Chicago, IL: The University of Chicago Press, 2001. 376 pages, index. Hardcover; $39.00. ISBN: 0226075648. Paperback; $25.00. ISBN: 0226075656.

Evangelicals have long sought to identify Christian influence on scientists and science "writ large"—the result being what historian Colin Russell has called "a massive debt." The role of the "Puritans," prominent figures such as Harvey, Kepler, Newton, Descartes, and Faraday have received increasing attention in the last several decades as the winds of historiography have moved from a wooden positivism to include the place of cultural factors—including religion—in the development of science. Van der Meer brought an international cast of historians and philosophers of science to a 1998 conference on this topic at the Pascal Centre for Advanced Studies in Faith at Redeemer College, Ancaster, Ontario, Canada.

John Brooke's "Religious Belief and the Content of the Sciences" offers a fine-grained analysis of ways that religious belief (unbelief) may shape the content and culture of the sciences. Brooke is well aware of the linguistic problems involving "science" and "religion" and the temptation to make apologetic points or a pithy quote.

Definitive answers to how belief shaped or was shaped by science are hard to come by:

> The more subtle approach is to recognize that religious beliefs and practices can shape worldviews, that worldviews may find expression in a commitment to metaphysical principles that govern theory construction, and that these, in turn, may govern the assent one might give to particular explanatory theories … religious beliefs may not be so readily detectable in the execution of a piece of scientific research but may nevertheless have an indirect, regulative role in conferring different degrees of legitimacy on competing influences that might be drawn from it (p. 6).

Brooke ranges widely over scientific history to examining ways that "cross-traffic" can occur. Religious practices, doctrines, propositions derived from a religious culture, pious enthusiasm for a particular scientific explanation, and the use of religious preferences where data is insufficient are among many other patterns of influence that have been suggested. Brooke cautiously offers three kinds of criteria for testing claims of the role of religious belief in shaping scientific content. They are:

1. Scientific and religious interests are integral to a larger enterprise, which may then be said to confer a unity on what might be seen as disparate endeavors;
2. Criteria which demonstrate that the scientist took religion seriously;
3. A polemical context where a scientific program is designed to support a particular religious notion (p. 26).

Stephen Wystra seeks to help us to distinguish metaphysical beliefs from religious beliefs so that we can focus more directly on the specific role of religion in science. Wystra finds a "believed-believing" distinction to be helpful. Here "religious beliefs might differ from metaphysical beliefs not just in the content of the believed, but also in the character, the how and the why, of the believing."

> To take history of science seriously is to let the historical figures we study surprise us with their unexpected connections. As we see how the enterprise we now call "science" has descended from so many of these unexpected connections, our own initial pigeonholes (including our categories of the "scientific," the "metaphysical," and the "religious") begin to interpenetrate in new ways (p. 46).

The Case Study chapters include Islamic and Jewish studies on early modern science. Margaret Osler critiques the efforts of historians who downplay the role of final causes in the Scientific Revolution. "'God of gods, and Lord of Lords': The Theology of Isaac Newton's General Scholium to the *Principia*" offers a thorough analysis of Newton's views on the design argument and God (theistic, biblically based, and antitrinitarian). The influence of religion on later astronomy is illustrated in Michael J. Crowe's "Astronomy and Religion (1780–1915): Four Case Studies Involving Ideas of Extraterrestrial Life."

Evolution receives attention from Martin Fichman, Philip R. Sloan, Richard England, and Geoffrey Cantor. Sloan offers a counter to those who see the later Darwin as agnostic toward religion. England notes that Darwin's followers developed systems that incorporated religious elements.

> Darwinism banished the near deism of Paleyan natural theology and opened the way to an immanentist theology of nature more compatible with Trinitarian Christian doctrine … Darwin, by proving that all organic structures developed by the natural law of natural selection, had in effect, extended human understanding of divine action (p. 280).

Science in Theistic Contexts belongs on your bookshelf.

Reviewed by John W. Haas, Jr., Emeritus Professor of Chemistry, Gordon College, Wenham, MA 01984.

HISTORY OF SCIENCE

THE RISE AND FALL OF MODERN MEDICINE by James Le Fanu. New York: Carroll and Graf Publishers, 2000. 448 pages, index, illustrated with 16 pages of black-and-white photographs. Hardcover; $26.00. ISBN: 078670732.

Le Fanu, a medical columnist for both the *Daily* and *Sunday Telegraph* as well as a writer for the *Times*, the *Spectator*, and *GQ* magazine, lives in London. He tells stories of medical advance that typified medicine from post-WWII to the

mid-1970s. Sometimes it is difficult to know whether he is referring to a trend in the US or the UK. Le Fanu argues that since the mid-1970s, progress in medicine has slowed because of a declining interest in clinical research, few new medicines discovered or developed, failed social medical theories, and the inability to realize the potential of genetic engineering. Le Fanu calls this slowdown "the Fall."

Le Fanu thinks we need to reclaim the lost art of clinical research performed by practicing physicians. He notes that the Postgraduate Medical School in London and Mayo Clinic have changed the way medicine is done from treating the patient to considering "what we can get out of his case in order to do better next time" (p. 170). This new approach, coupled with the sense of invincibility that came after the war years, created an atmosphere where people believed any problem could be solved. Stricter ethical regulations in research and competing interests have compromised the quantity and quality of research being done since the late 1970s.

In the 1930s, there were few drugs available, but by the 1960s there were thousands. Most of these drugs were discovered fortuitously. Why? At that time, biochemistry and cell biology were not well understood, so researchers just followed "leads" or hunches. It was a very productive time of pharmaceutical research. He states that the decline in discovery has been because pharmaceutical research moved in the direction of searching for (or synthesizing) the perfect drug based on a clear understanding of the biochemistry of the disorder. He seems to be making a case for research being less systematic and/or less regulated.

Le Fanu is critical of what he calls "The Social Theory of Disease" and its proponents, such as Geoffrey Rose and Ancel Keys. Le Fanu contends that lifestyle changes, such as reducing fat and salt intake, do not reduce cholesterol in the blood and do not reduce heart disease. He suggests a return to a rigid biomedical model to guide all health research. In fact, he questions the value of the entire discipline of epidemiology! He contends that contradictory results are the norm in epidemiology, blaming these contradictions on selective omission of facts and the exclusion of negative data. In contrast, Le Fanu praises doctors who treat the sick. He implies that medical doctors should guide the health care industry.

The fourth reason for "the Fall" since the mid-1970s is overuse of new medical technology. For example, although much ballyhooed, the potential of genetic engineering has not been realized. Furthermore, neither genetic screening of fetuses *in utero* nor gene therapy have proven practical.

On the one hand, Le Fanu is making a strong case for a strict biomedical approach to health care. On the other hand, he is critical of current biomedical research, reduced to experts trying to devise health solutions based on their understanding of cell biology, an approach Le Fanu finds expensive and seldom able to produce health-benefitting results. He does not make it clear what he thinks needs to be done to resume progress in medicine.

Regarding the so-called "Fall" in medicine, the author completely ignores the patient's perspective. For example, there is no analysis of whether patient dissatisfaction with medical care may be responsible for the increase in use of non-allopathic medicine in recent years.

This book has interesting historical tidbits such as how a single condition, such as hypertension, has influenced world events. For example, how might postwar events have been different if President Roosevelt and Josef Stalin had controlled their blood pressure (Roosevelt died of a stroke in 1945 and Stalin died of complications due to high blood pressure in 1953)?

There are a few mistakes in the book, such as calling the University of Minnesota, the University of Minneapolis, and misspelling Stanford University. However, the book is well written, even if not always convincing. Medical doctors and readers interested in the history of modern medicine will find it provocative.

Reviewed by Mark A. Strand, graduate student, University of Colorado-Denver, Denver, CO 80212.

THE PERVERSION OF KNOWLEDGE by Vadim J. Birstein. Boulder, CO: Westview Press, 2001. 492 pages. Hardcover; $32.50. ISBN: 0813339073.

A book about Soviet science written by a scientist familiar with the system is unusual. The writer's aim is to expose the responses of scientists to moral choices when working under a totalitarian state. Those who acquiesced, betraying their calling, used the Soviet political system for personal gain, but, in doing so, lost credibility with colleagues. Those who did not follow this path, were sometimes executed wrongly, and then, in some instances, rehabilitated later.

Birstein, a geneticist and historian, now lives in New York. He has the credentials to write about biology and medicine in the Soviet Union, because he was trained and worked there. The book has a sound binding and clear type-face with a few illustrations. The Table of Contents and list of abbreviations are followed by a carefully constructed introduction, an extensive section of referenced materials, and biographical sketches of the characters.

Birstein's access to secret materials in Russian is not available in the West, and his knowledge of research establishments allows him to place the events described within their actual context. He discusses the influence of the pseudo-biology of Trofim Lysenko, an uneducated agronomist, who opposed Mendel's findings and Darwin's theory and denied that genes were the basis of inheritance. Lysenko destroyed Soviet genetics and geneticists, many thousands of whom lost their academic positions. Publication of their work was refused and psychological pressure was exerted on them. Those with little training moved into the top positions. In this way, Stalin, the KGB, and the Party gained control over science.

The Germans at Buchenwald and the scientists in Moscow substituted humans who were about to be executed for animals in lethal medical experiments. Many of these died terrible deaths, poisoned with mustard gas, ricin, and then curare as a search was made for lethal materials to liquidate enemies of the Party. The infectious agents, plague and anthrax, were tested and became available for wider use. The knowledge gained about these materials was restricted to a small cohort. The threat of biological and chemical warfare in World War II is now shown to have been a very real one. In Birstein's opinion, all of these

activities could be equated with the crimes outlined at the Nurenberg doctors' trial, but those responsible in the Soviet Union escaped this route of accountability. The author is not blind to the situation in the USA, UK, and Canada where vast weapon stocks of mustard gas led to army personnel in World War II being exposed to these poisons.

Birstein describes a number of other fields of study such as a search for "truth" drugs as a means of extracting "truthful testimonies" from the accused during interrogation. Mairanovsky, a leading investigator in this unit, thought that the Germans lagged behind them in the techniques used.

I believe this book presents a true story about Soviet science. In general, it confirms the contentions of Judith Miller, et al., in *Germs: Biological Weapons and America's Secret War* (2001). Birstein expresses concern that Russian technologies might accompany workers who seek better remuneration elsewhere, thus providing for the possibility of spreading terrorism. He also raises the issues associated with an emerging neo-Stalinist Russia.

Birstein has a chilling message for all when he says that uncontrolled secret research, wherever it takes place, may lead to tests on unsuspecting humans. This year both the USA and the UK have indicated that they intend to stop some publications in order to control what scientists will be permitted to say. The author, with a carefully constructed argument, achieves his aim set out above. The book will be of special interest to ethicists, historians of this era, and those engaged in biomedical studies. Other sections may be of general interest to some readers.

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GOD'S TWO BOOKS: Copernican Cosmology and Biblical Interpretation in Early Modern Science by Kenneth J. Howell. Notre Dame, IN: University of Notre Dame Press, 2002. 319 pages. Hardcover; $39.95. ISBN: 0268010455.

Protestant and Catholic writers have expended many pages and much venom over the centuries about the reception of Copernicanism among both church and society in the early modern period. More recent works have been considerably less strident in tone and much more careful in their handling of the primary materials associated with this period in seeking to understand the impact of Copernicus and his disciples. This monograph is a monumental interpretation that builds on the best in prior work and then extends it into a nuanced discussion of the interplay among astronomical theory, astronomical observations, contemporary theology, scriptural exegesis, and natural philosophy.

The reading of the heavens and Scripture in the early modern period turns out to be far more complicated than many discussions of this period infer. Howell, Director of the John Henry Newman Institute of Catholic Thought and adjunct professor of religious studies at the University of Illinois, Champaign-Urbana, cogently dissects beliefs and behaviors of key players in this drama. He introduces the notion of a convergent realism to describe the approach of Copernicus, Brahe, Peucer, Rothman, and Kepler to the physical world. This orientation incorporates empirical and theological perspectives into a holistic version of the universe without being slavish to either perspective.

These thinkers believed firmly that the Bible was relevant to cosmology but denied that the Bible had scientific content. On the other hand, they held that theological truths expressed in the Bible were interwoven into nature in subtle and amazing ways. Howell shows how their thinking was much more closely aligned with many Catholic thinkers than was formerly believed and lays to rest any simplistic notions that the Protestant genius was due to literal hermeneutics or Copernicanism versus anti-Copernicanism sentiments.

This book also makes clear the range of views held by the principal players in this important astronomical drama while explicating the nature of their shared goals and understandings. As is true with so many historical events, the actual truth always appears far more complicated than at first glance. Howell has produced a first-rate study to which all subsequent work must pay homage. He also has provided an enormously useful case study pertinent to contemporary discussions about the relationships among the sciences, the Bible, theologies, and believers. Much of the nuanced discussion within this book is quite pertinent to ASA discussions over the years about this topic and points the way forward in a useful manner to perhaps a more satisfactory exposition and understanding of this complex relationship.

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NATURAL SCIENCE

MATHEMATICS IN A POSTMODERN AGE: A Christian Perspective by Russell W. Howell and W. James Bradley, eds. Grand Rapids, MI: Eerdmans Publishing Company, 2001. viii, 399 pages, bibliographical references, notes, index. Paperback; $28.00. ISBN: 0802849105.

Maybe Michael Veatch gave the clearest and shortest formulation of the reason for this book when he asked: "How can a career in mathematics be of service in God's Kingdom, and participate in redemption of our culture?" (p. 247). Ten writers provide answers to this question.

The writers indicate that mathematics may be traced back to pagan Greek philosophers and their idea that the universe is accessible to rational analysis and reducible to a small number of principles. This has influenced modern views which hold that math is logical, objective and therefore disconnected from persons. (The Chinese rejected the universal power of human theory, which paradoxically led to greater contact between person and mathematics.)

I was disappointed that the book did not refer to the booklet by Gene Chase and Calvin Jongsma "Bibliography of Christianity and Mathematics." Chase and Jongsma list books relating Christian faith to mathematics during the twentieth century.

Today the trend is toward mathematization of all areas of knowledge. Therefore, a Christian philosophy in all areas of life, including mathematics, becomes important. Concerns about what math is, how it is used, what affect it has on society, and how it is used to build the kingdom of God are important for everyone. Since the book shows as well that all areas are now being mathematized, it should be of interest to all people working in any area of scholarship where math is used.

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ORIGINS & COSMOLOGY

DARWIN'S GOD: Evolution and the Problem of Evil by Cornelius G. Hunter. Grand Rapids, MI: Baker Book House, 2001. 192 pages. Hardcover; $17.99. ISBN: 1587430118.

Hunter was senior vice president of Seagull Technology, Inc., a high tech firm in Silicon Valley, and was completing a Ph.D. in biophysics at the University of Illinois when this book was first published. This book, which appears to be his first, is endorsed by Phillip Johnson, Michael Behe, William Dembski, and Stephen Meyer; authors who are all associated with the Intelligent Design movement. Although this book does not deal directly with the concept of Intelligent Design, it is easy to see from the content why proponents of this concept would be supportive of Hunter's conclusions.

The goals of the author are twofold. The first goal addressed in chapters two through four is to show that the scientific evidence for the process of macroevolution is not as convincing as evolutionary biologists would lead us to believe. In chapter two, problems with the evidence from comparative anatomy are discussed. They include the ambiguous nature of homologies, the problem of measuring fitness, the subjective nature of the argument from embryology, and the lack of evidence from molecular comparisons. The question of how small-scale change (microevolution) can actually lead to the large-scale changes required by macroevolution is addressed in chapter three, with the author arguing that biological modification within populations is limited and that small-scale changes appear to be bounded. The evidence for macroevolution from the fossil record is challenged in chapter four. Included in this chapter is a brief discussion of the concept of "irreducible complexity" and the problem it poses for an evolutionary process which relies on the mechanisms of chance and opportunism.

Hunter's second goal, which is actually the main goal of the book, is to show how deeply wedded evolution is to its metaphysical presuppositions. While this connection is introduced in the first four chapters of the book, it is further developed from a historical perspective in chapters five through eight. Hunter argues that negative theology has been woven into the fabric of evolutionary thought from the time of Charles Darwin up to the present. Darwin's theory of evolution was a solution to the problem of natural evil in that it distanced God from the creation by interposing a natural law—his law of natural selection. The idea that God would never have created a world with so much suffering and inefficiency preceded evolution historically and became the metaphysical landscape on which the theory of evolution was constructed. Hunter contends that evolution's real problem is not its metaphysical foundation, but the refusal of its proponents to acknowledge this reliance upon theological premises. He concludes chapter eight with the following statement; "Philosophy and science have always been influenced by theology. This is especially true for evolution. The difference is that evolution denies the influence" (p. 160).

In chapter nine, the last chapter of the book, various attempts to maintain and reconcile orthodox views of both theism and evolution are examined. Individuals included in this brief survey are biochemist Terry Gray, professor emeritus of physics Howard Van Till, biology professor Kenneth Miller, and theology professor John Haught. Instead of presenting their versions of theistic evolution as viable options, Hunter uses them to point out how difficult it is to believe in Darwin's theory of evolution and in a sovereign God who is in complete control of the world at the same time. He goes on to suggest that these more recent attempts to reconcile God and evolution are actually quite similar to the pre-Darwinian metaphysic of a Creator who is distanced from the world and, more important, from its evil and suffering.

While the problems with the evidence for evolution presented in chapters two through four have been addressed more extensively by other authors, to my knowledge, the story that Hunter tells in the latter chapters of the book has not been previously published. His historical survey of the relationship between evolutionary thought and negative theology is documented with references to the original source material in the endnotes. The book as a whole is easy to read and is therefore accessible to anyone who has an interest in the past and present interactions between evolutionary thought, the problem of evil, and the doctrine of God. This book will most likely be widely read and well received among those of Christian faith. It will be interesting to see how evolutionary biologists and historians of science will respond.

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RESPONSES TO 101 QUESTIONS ON GOD AND EVOLUTION by John F. Haught. Matwah, NJ: Paulist Press, 2001. 143 pages. Paperback; $12.95. ISBN: 0809139898.

Haught, the Landegger distinguished professor of theology at Georgetown University, is well qualified to author this volume on God and evolution for Paulist's "101 Questions" series, for he was been thinking about this topic for many years. Following his recently published *God After Darwin: A Theology of Evolution*, the present volume considers the same topics in a question-and-answer format. The questions are comprehensive in their range; the answers, clear and succinct. Haught incorporates into his Roman Catholic perspective the ideas of a number of theologians; including Karl Rahner and Pierre Teilhard de Chardin, and evangelicals Jurgen Moltmann and Howard Van Till.

The 101 questions and their answers are organized into several categories: I. Darwin's Dangerous Idea; II. Darwin

and Theology; III. Creationism; IV. Darwin and Design; V. Divine Providence and Natural Selection; VI. Evolution, Suffering and Redemption; and VII. Teilhard de Chardin and Alfred North Whitehead. The questions raise many serious and difficult issues about evolution, and Haught meets them head-on. In the process, he often demonstrates that a theory or fact about the evolution of life, which seems to rule out the need for God, can be understood in a way that invites the reader into a new and deeper understanding of God's creativity and relationship to the universe.

For example, in his response to the question, "Could life have originated by chance?" Haught argues that accepting the notion that life may have emerged by a random occurrence invites us to conceive of God "as the ultimate depth and ground of nature's resourcefulness [rather] than as a magical intruder" (p. 23). He adds:

> It is unseemly to picture a divine "designer" stitching atoms and molecules together in a special act of "design" in order to make the first living cell. Rather, we should think of the universe, in Howard Van Till's words, as "richly endowed" in a comprehensive way for giving birth eventually to life from within its own inner storehouse of creativity" (p. 24).

The same may be said about all of the new creatures that have emerged into being through random mutations worked on by natural selection (and other processes) over immense periods of time.

Along with an accurate (though abbreviated) summation of the major features of evolutionary biology, Haught develops a theology of evolution and forthrightly critiques—on theological grounds—evolution's critics, young-earth creationists, and intelligent design proponents as well as its materialist defenders. Their three positions, he points out, exhibit the common error of conflating science with a belief system that dictates the way its proponents will interpret scientific data. He offers the readers suggestions on how to respond to, say, the literalism of the creationists (and of the materialists!), and explains how intelligent design advocates fail to distinguish between design as a theological concept and as a scientific concept, thus bringing God in "as *part* of scientific explanation" in a way that theologians should reject as vigorously as scientists (p. 89).

In these and other sections, Haught presents a concept of God and of Providence that he and his colleagues argue is consonant with scientific evolution. As in his other writings, he challenges the reader to think of God and God's relationship to the creation in ways that depart from popular notions but are consistent with the God revealed in Holy Scripture. He asks the reader to abandon the "Caesarian" God of Christian history for the vulnerable and compassionate God of the Bible who with infinite love allows an unfinished, emergent, and evolving creation to become itself in all of its variety and mystery. Evolution is consonant with the biblical God who calls to the world from the future, "luring" the creation into greater dimensions of complexity and beauty (Whitehead) toward the "Omega Point" to which all of creation and especially self-conscious creation is drawn (Teilhard). This God exercises sovereignty and power not like an absolute monarch of human governance but as the kenotic God revealed in Jesus (Phil. 2:5–11): "God's power is manifested most fully in God's self-emptying empowerment of the creation" (p. 115), and in God's decision to share in and thus redeem the suffering of all creation through the Incarnation and the Cross.

These comments are only highlights. The text itself is replete with thought-provoking reflections on the God of evolution. A valuable book for general audiences, it would especially serve as an excellent resource for teachers and students.

Reviewed by Robert J. Schneider, 187 Sierra Vista Drive, Boone, NC 28607-7980.

OF THE PLURALITY OF WORLDS by William Whewell. Edited with Introduction by Michael Ruse. Chicago: University of Chicago Press, 2001. 510 pages. Paperback; $20.00. ISBN: 0226894363.

Whewell was the Master of Trinity College at Cambridge for twenty-five years during the early- to mid-1800s. He wrote numerous books on various topics from the theory of the scientific method, to morals, to the 3rd Bridgewater Treatise. *Of the Plurality of Worlds* is a fascinating look at a Christian struggling to come to grips with data consistent with extraterrestrial life and the implications of this for Christianity.

In the early 1800s, many new facts were being discovered about the number of stars in the universe, both in the Milky Way and in the nebulae, which we now call galaxies. A magnificent six-foot reflecting telescope, built just a few years prior, was showing that the Milky Way and many of the nebula did not consist of dust but of faint stars. This vast number of stars caused many to believe, via analogical argument, that the universe was widely peopled with other forms of intelligent life. The newly discovered stars were analogous to our sun, and thus, by analogy, most likely had numerous planets surrounding them. Those planets, by analogy with the earth, were probably undergoing geological processes, just as occur on earth, leading to similar conditions as exist on earth with similar populations (pp. 7–8). Ruse points out that Whewell himself had accepted this line of reasoning in the 1830s but rejected it as he became older and was moving toward more dependence upon revealed religion as opposed to natural theology.

Whewell's central question was "What is man that thou art mindful of him?" Whewell argued against the idea that God's attention to other life forms would make humans insignificant. First, he claimed that astronomy could not show that earthlings were more insignificant than geology had already shown them to be. After all, geology showed us that humans were late appearing beings in a very old universe, previously empty of intelligent life. Astronomy merely confirmed that it would take great lengths of time for light to travel to earth from the stars. Secondly, he then attacked the analogical argument by claiming that the newly resolved stars were not like our sun. Indeed he claimed that these objects were merely dots of light and were comets. In the "Dialogue on the Plurality of Worlds" at the back of Ruse's edition, Whewell's contemporaries all objected to this characterization claiming that it was com-

mon knowledge that these were stars and not comets. Whewell dismissed their claim indirectly by merely claiming that the nebula were not far away. That hardly addressed the issue of their nature.

Thirdly and most bizarrely, Whewell protected his position by claiming that even if these objects were not comets, the universe was metrically heliocentric. Whewell's universe made the sun the largest object with everything, including the other stars, getting smaller in size with distance. Our sun as the largest object in the universe maintained humankind's importance in God's eyes. Again, the "Dialogue" shows that his contemporaries were aghast at such a claim. Whewell retorted that the entire pattern we see in systems is that a large body dominates a system, and it is surrounded by smaller objects like the sun with its planets. Thus, the sun is placed squarely in the center of Whewell's universe. Whewell correctly showed the low probability for life on the other planets in our solar system.

According to Ruse, Whewell was in between a rock and a hard place. If you supported revealed religion, then observational data so useful to natural theology became irrelevant. But the more Whewell depended upon natural theology to support his religion, the more he opened himself up to the specter of evolution which had just come on the intellectual scene with the publication of Chamber's *Vestiges.* And if he denied evolution, then an empty universe seems like a waste in that age when God would waste nothing.

The book, as I said, is a fascinating look at a distant struggle to come to grips with the conflict between observational data and one's religion. It is an engaging study of this struggle.

Reviewed by Glenn R. Morton, Ramsden Lodge, 103 Malcolm Road, Peterculter, AB14 0XB Scotland.

FROM GENESIS TO GENETICS: The Case of Evolution and Creationism by John A. Moore. Berkeley and Los Angeles: University of California Press, 2002. xvi and 223 pages, references, index. Hardcover; $27.50.
ISBN: 0520224418.

Moore writes in an easy-to-read style about the reaction of American Christians to the study of evolution in the science curriculum. He wants to discuss the religion-versus-science debate, in particular, the standoff between evolutionists and creationists. That description is unfortunate, as it excludes those who believe that evolution and creation are not opposites. Evolution may have been part of the creation process.

Moore uses the King James Version of the Bible in a way that suggests that "creationists" read the first chapters literally. Many theologians, even when they accept the Bible as God's Word, do not take Genesis 1–11 in that way. Moore's result is an incomplete discussion of Genesis and the views of Bible-believing Christians. Even in the nineteenth century, some orthodox theologians in Western Europe accepted the fact that God created using evolution.

A consequence of Moore's position is that he states that science and religion occupy different domains. To the contrary, many Christians believe that religion involves all of life, including science. If religion is excluded from part of life, does this not exclude God from part of our life?

Reviewed by Jan de Koning, 20 Crispin Crescent, Willowdale, ON, M2R 2V7 Canada.

THE BIG BANG by Joseph Silk. New York: W. H. Freeman and Company, 2001. xv + 496 pages, mathematical notes, bibliography, glossary, index. Paperback; $19.95.
ISBN: 0716738783.

Silk is the head of astrophysics and Savilian professor of astronomy in the department of physics at the University of Oxford. He is the author of several other books on cosmology and cosmogony. This book covers more than the title suggests. Its eighteen chapters deal not only with the Big Bang itself, but also with the subsequent development of the universe up to the present time and speculation about its future. Although Silk does not identify it as such, it is clear that *The Big Bang* is intended to be an introductory college textbook for a course in cosmology.

The first four chapters introduce cosmology as a science, survey the history of cosmology, and provide a background in observational astronomy, with special reference to the measurement of distance and time, and survey the evidence for the Big Bang. These chapters are factual and evidential in nature.

Chapters 5–7, in contrast, deal with cosmological models. Silk surveys various models regarding the curvature of space, the expansion of the universe following the singularity (i.e., the beginning of the Big Bang), superstrings, quantum gravity, inflation, strings (not to be confused with superstrings), particle formation and annihilation, and mini-black holes—and all of these before the universe was one second old!

Chapters 8–16 are perhaps less controversial; or rather, the topics covered are better integrated into a coherent picture of the evolution of the universe from the end of the first millisecond after the singularity to the present. Silk takes up the thermonuclear detonation of the universe, the emergence of the primitive fireball, the origin and evolution of galaxies and the theory of galaxy formation, the clustering of galaxies, ratio galaxies and quasars, the formation of stars, the morphology of galaxies, the origin of heavy elements and of the planets, and the formation of earth and the emergence of life on earth. Chapters 17–18 deal with possible scenarios for the future of the universe and with alternative cosmologies to the Big Bang.

The Big Bang is a thorough introduction to the field of cosmology, but it is not for the casual reader. Chapters 5–7, in particular, are apt to be confusing. I certainly found them so, until I realized that Silk is simply presenting ideas currently being discussed and debated by cosmologists, ideas that do not constitute a unified theoretical scheme. (When I stopped trying to fit the pieces together, they made a lot more sense!) Each section in these chapters should be read as an introduction to a particular hypothesis or concept rather than as a part of a single model. Nevertheless, even considering those hypotheses one by one, I did not find Silk's discussion of them satisfying. I wished

that he had either explained some topics (in particular, superstrings, quantum gravity, strings, and mini-black holes) more fully, or else omitted them entirely.

The Big Bang is written from a secular perspective. It is, of course, incompatible with young-earth special creationism (YEC). It is also incompatible in part with any old-earth creationism (OEC) that posits direct divine intervention at various points in time. Christians who, along with Howard Van Till, believe that God created the world with a robust formational economy will find nothing theologically objectionable in the book.

I recommend this book for anyone—YEC, OEC, or Van Tillian—who wants to get an up-to-date picture of current cosmological thinking and is willing to work for it. The material is accessible for the reader with some background in physics; the reader who lacks a physics background will struggle. One feature of this book that may make it superior to others in the field is its incorporation of relatively recent observational evidence obtained from microwave-detecting satellites and the Hubble telescope, evidence of great importance for cosmological theory that was not available until 1989 and thereafter.

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

ORIGIN OF THE HUMAN SPECIES by Dennis Bonnette. Amsterdam, Netherlands: Rodopi, 2001. 202 pages, index. Paperback; $19.95. ISBN: 904203745.

Bonnette, chairman of the philosophy department at Niagara University, received his Ph.D. from Notre Dame in 1970. He has written one earlier book, *Aquinas' Proofs for God's Existence*, but nothing in the area of anthropology.

This book has fourteen chapters with the first third of the book devoted to evolutionary concepts like natural selection, what is a species, the possibility of inter-specific evolution and scientific creationism. The book then discusses topics like the origin of the human soul, extraterrestrial life, the metaphysical structure of natural species, the first humans, and the end of human evolution.

Bonnette argues for a progressive creationist interpretation of earth history. He tries to show that evolution does not really happen. He continually cites several unpublished works (c. 1950) of an Australian named Austin M. Woodbury, who defines life in such a way that it cannot transform (for Platonic category reasons). Woodbury asserts that any existing being is its own category and thus transitional forms are not possible. This defines the problem away. Bonnette, again citing Woodbury, argues that an effect cannot be greater than its cause, which ignores the modern knowledge coming out of nonlinear dynamics.

Bonnette then turns to the human soul and offers Woodbury's definition of true intellect: speech, progress, knowledge of relations, knowledge of immaterial objects. When these ideas are applied to the fossil record, looking for the first human, Bonnette claims that intellective activity is what one must find. He claims (p. 108) that such evidence appears in the fossil record 700,000 years ago in the form of the symmetrical Acheulean hand ax. The symmetry is not utilitarian and thus evidence of art and aesthetics. He rejects *Homo erectus* as the tool-maker, saying that even if one were found holding such a tool, it would be no more than a dog bringing home the evening paper. He then cites Cremo and Thompson's *Forbidden Archaeology*, for the concept that anatomically modern man existed that long ago and was the tool-maker. This source is universally rejected by all anthropologists!

The only strength in the book is Bonnette's correct assessment of ape-language studies. Other than that, Bonnette's anthropological knowledge is positively paleolithic! The average age of his anthropological references being 1980 with only three references to the literature of the 1990s. Indeed, the average age of the scientific reference is 1978. Because of this, the book abounds with falsified claims. He erroneously claims that the only species of hominid found before two million years ago is Australopithecus (there are at least four), that there has been no description of *Homo habilis* (Tobias in 1991), that Australopithecus did not use fire (they did at Swartkrans), that Acheulean handaxes first occur 700 thousand years ago (the truth: 1.4 million years ago), that computers can only play chess at a "routine level" (they have beaten the world champion), and claims that animals cannot lie (baboons have been observed doing so). Furthermore, he engages in intellectual equivocation, believing that any claims against the scientific view made by anybody are all equally to be believed and taken seriously. This tendency forces the reader to wade through lots of arguments already known to be false.

Bonnette also appears to advocate the rejection of observational data if it violates philosophical principles, thus placing philosophy rather than observation as the arbiter of reality. Indeed, he states that only the methodology of philosophy can give us true knowledge. This retreat to a form of medieval scholasticism in which static substantial forms are the standard and things are believed a priori rather than a posteriori makes this book quaint even in its philosophical content.

Who would be interested in this book? I was, until I saw the pitiful level of science. With an endorsement of Michael Behe, it would imply that those of the Intelligent Design bent might be interested in the book. The only problem is that with all the factual errors, its ancient philosophical approach, and lack of discernment about good from bad scientific arguments, anyone reading this book will depend upon it at their own risk.

Reviewed by Glenn R. Morton, Ramsden Lodge, 103 Malcolm Road, Peterculter, AB14 0XB Scotland.

AN EVOLVING DIALOGUE: Theological and Scientific Perspectives on Evolution by James B. Miller, ed. Harrisburg, PA: Trinity Press International, 2001. 532 pages, index. Paperback; $40.00. ISBN: 1563383497.

Miller is Senior Program Associate for the Program of Dialogue, Science, Ethics and Religion at the American Association for the Advancement of Science. This book is a collection of reprinted essays that are organized into five different sections ranging from basic science education to theological models and intelligent design. The first two sections address the science of evolution. The first section

explains the classic Darwinian theory of evolution and is an attempt to provide an educational base for the subsequent sections. The second section deals with how the theory of evolution can be addressed to questions that go beyond Darwin. Topics include the origin of life at its most rudimentary molecular level and the challenges of evolution to explain the formation of molecules such as RNA and DNA. The lack of evidence in the fossil record for gradual change of species is addressed in an essay by Stephen Gould on the idea of punctuated equilibrium.

The remaining three sections discuss historical, theological, and philosophical approaches to the issue. The third section traces the historical development of the evolution-creationism issue and includes an unflattering, but honest, assessment of the young earth creation movement by Ronald Numbers. Progressive creationism and theistic evolution are also mentioned. The latter part of the third and the entire fourth section address philosophical and theological approaches to the interaction between science and faith. The case for the separation of science and faith into two different "magisteria," or areas of authority that are "nonoverlapping," is made by Stephen Gould and others. There is also an argument made by Elizabeth A. Johnson for a "contact" approach which integrates the terminology of evolution and the probability of quantum mechanics and evolution into a theology of free will. It applies not only to persons but also to the physical world to allow for a creation process which includes a record of life with the many branches and dead ends as seen in the fossil record and explained by evolution theory.

The fifth section addresses the philosophical and scientific approach of intelligent design. The case for design is made by William Dembski, Michael Behe, and Kenneth Miller. These authors endeavor to cast doubt upon the probability of the evolution of the most rudimentary forms of molecular structure for the origins of life, and the evolution of "irreducible systems" in the area of biochemistry. An attempt is also made to present intelligent design as a quantifiable science rather than a philosophy. These essays are countered by critiques of intelligent design by authors such as Fitelson and Grizzle. The sum of the critique is that intelligent design is not a science, but a philosophy, and that the same proposed quantitative means for measuring irreducibility can be favorable to evolution theory.

Overall, the impression one takes from this particular set of essays and the manner in which they are arranged is a case for theistic evolution. Science is presented from the assumption of evolution, young earth creationism is severely debunked, theological models which are inclusive of chance and probability are proposed, and intelligent design is presented and rebuffed. The book is weak in its lack of an honest discussion of the testability and verifiability of evolution theory, though some mention is made of bio-molecular and genetics techniques. Additional scientific articles addressing the weaker points of evolutionary theory from a scientific perspective would have allowed for a better discussion of the shortcomings of current evolution theory. Some of the essays which fall into the category of science education are also weak as scientific arguments. I think especially of the essay on punctuated equilibrium by Gould and Eldridge. A better essay which explains the science of punctuated equilibrium could have been chosen.

This is a book that can be read for its discussion of science and theology as it relates to the topic of evolution theory. The essays are all well written and contain scientific information about evolution, summaries of the historical debates, and theological and philosophical perspectives. It is a good volume to have for those in the sciences and for those in theology with an interest in the evolution issue.

Reviewed by Gary De Boer, Assistant Professor of Chemistry, LeTourneau University, Longview, TX 75607-7001.

PHILOSOPHY & THEOLOGY

EVOLUTION AND THE PROBLEM OF NATURAL EVIL by Michael A. Corey. Lanham, MD: University Press of America, 2000. 366 pages, index, notes, bibliography. Paperback; $54.50. ISBN: 076181812X.

The title could not be passed up, but the content of this strange volume is a disappointment. The publisher gives the author's credentials as those of "an investor and a real estate developer." The book itself says nothing about the author. Internet research reveals he has a Ph.D. from Claremont in philosophy. Since writing on marital and drug rehabilitation issues in the 1980s, he has written several books on science / religion issues.

Claremont may have taught him well in philosophy; his arguments for a solution to the theodicy problem takes a classical Christian approach, and it is fairly adequate. But his misunderstandings of the scientific enterprise, for example, mistaking methodological naturalism for atheism (p. 42), and his embracing of "theistic science" (on the basis of Ockham's razor, [p. 141]), makes a good deal of the book simply useless. On page 136, he asserts that modern science affirms scientism. Somewhere along about there I stopped reading the book seriously and only skimmed the rest. This book is not recommended.

Reviewed by John Burgeson, Stephen Minister, First Presbyterian Church, Durango, CO 81301.

THE ABC OF ARMAGEDDON: Bertrand Russell on Science, Religion, and the Next War, 1919–1938 by Peter H. Denton. Albany, NY: State University of New York Press, 2001. 174 + xxvi pages, bibliographical references, and index. Hardcover; $54.50. ISBN: 0791450740. Paperback; $20.95. ISBN: 0791450740.

Russell started writing in 1888 and wrote mainly on logic and philosophy before and during the World War I. He wrote *Principia Mathematica 1910–1913* with Whitehead. As third earl, Russell, born into an old noble family, was a member of the House of Lords, where he had socialist tendencies. He tried to help establish a just society. As an atheist, philosopher, and politician, he wrote about science, religion, and politics. Though this book is more philosophy than science, I recommend it.

Because he hated war, he thought about ways to prevent it. He wrote in 1923: "The Americans surpass even the British in sagacity, apparent moderation, and the skillful

use of hypocrisy by which even they themselves are deceived" (p. 137). Against such a formidable combination of advantages, he said, no other state could hope to be victorious.

Denton claims that the conflict between science and religion may be traced to two books, one published in 1874 by J. W. Draper and one in 1896 by A. D. White. Russell quotes some philosophers who wrote later and dismisses them because they were trying to arrive at conclusions about reality that were based on metaphysical speculations (p. 106). According to Russell, the theistic standpoint floundered on its inability to account for evil in a universe created by an omnipotent God. In his opinion, there was no more to life than physical and mechanical processes.

Reviewed by Jan de Koning, 20 Crispin Crescent, Willowdale, ON, M2R 2V7 Canada.

RELIGION AND SCIENTIFIC NATURALISM: Overcoming the Conflicts by David Ray Griffin. Albany, NY: State University of New York Press, 2000. 345 pages, index, notes, bibliography. Paperback; $25.95. ISBN: 0791445631.

Griffin, Claremont professor of philosophy of religion and theology, has written a watershed book, one that received the 2000 Book Award from the (UK-based) Scientific and Medical Network. This book argues a Whiteheadian based philosophy for a religion that does not require supernaturalism and a science that does not require materialism. He describes himself as a panentheistic Christian, one who sees God as more than the universe and yet the universe as part of God. He sees God at work in the universe in a "persuasive" rather than in a "coercive" way.

A person can benefit from this book without subscribing to panentheism. Both Whitehead, writing in 1925, and Griffin see a middle ground between materialism and supernaturalism. Griffin uses the term "theistic naturalism" for this world view. Defining two unusual, but very specific terms, "naturalism(sam)" and "naturalism(ns)," he argues that naturalism(ns) is sufficient for science and is compatible with a theistic religion.

Griffin defines naturalism(ns) as being simply a rejection of supernatural interventions which interrupt causal relations, and naturalism(sam) as including naturalism(ns) plus sensationism, atheism, materialism, determinism, reductionism, no causation from mind to body, upward causation only, no transcendent source of religious experience, no variable divine influence, and no ultimate meaning to life (nihilism). He observes that other writers call naturalism(sam) by the names reductionistic naturalism, materialistic naturalism, and atheistic naturalism. I would add the terms "philosophical naturalism" and "metaphysical naturalism." To harmonize religion and science, Griffin sees three things as necessary: (1) They must share a world view; (2) Science must insist only on naturalism(ns); and (3) Religion must accept naturalism(ns) as foundational.

Griffin thinks theism need not require supernaturalism to be genuine and "robust." Contrary to the claims of supernaturalistic theism, he believes that the basic casual principles of the world are never interrupted. A generic idea of God includes: (1) a personal, purposive being; (2) supreme in power; (3) perfect in goodness; (4) creator of the world; (5) acting providentially; (6) experienced by human beings; (7) the ultimate guarantee for the meaning life; (8) the basis for the victory of good over evil; and (9) alone worthy of worship.

Theistic naturalism retains all nine of these features, he says, by modifying the traditional understanding of (2), from coercive power to persuasive power. This, in turn, modifies the traditional meaning of (4), (5) and (8). He sees God, neither omniscient nor omnipotent, as a casual influence on every event.

In chapter 6, Griffin addresses the mind-body problem, asserting that it has been the central problem for modern philosophy. We have some "hard common sense" (non-negotiable) beliefs about ourselves, he writes, which we presuppose in practice. These include: (1) conscious experience; (2) partial free will; (3) freedom to act on the body, and therefore; (4) at least a degree of responsibility for our bodily actions.

While there are those who argue that science has proven false one or more of these ideas, Griffin effectively rebuts them, arguing that if one eliminates a belief in the reality, self-determination, and causal efficacy of conscious experience, one's belief still remains. If someone tells you that you should eliminate beliefs in these three things, he must necessarily assume that: (1) You can understand what he is saying; (2) You can freely choose, or reject, his advice; and (3) You can freely choose, in the future, to tell others of it. To deny this is irrational, a "performative self contradiction."

Griffin describes "Darwinian Evolutionism," as a mix of fourteen separate ideas: (1) microevolution; (2) macroevolution; (3) naturalistic; (4) uniformitarianism; (5) no theistic guidance; (6) positivism; (7) predictive (in principle) determinism. No teleology; (8) macroevolution equated to long-term microevolution; (9) natural selection as the sole cause; (10) gradualism; (11) nominalism; (12) atheistic; (13) amoral; and (14) nonprogressive. Griffin accepts the first four of these ideas, but he rejects the next ten. Griffin points out that one implication of theistic naturalism that many will find problematic is that it provides no basis for arguing that Christianity is "The One True Religion." An advocate of religious pluralism, he sees this to be a benefit, arguing that classical theism's depiction of God is, itself, unbiblical.

This book is highly recommended to my ASA colleagues. It is a "keeper."

Reviewed by John W. Burgeson, Stephen Minister, First Presbyterian Church, Durango, CO 81301.

THE ONE IN THE MANY: A Contemporary Reconstruction of the God-World Relationship by Joseph A. Bracken. Grand Rapids, MI: Eerdmans Publishing Co., 2001. xii + 234 pages. Paperback; $22.00. ISBN: 0802848923.

Bracken aims to reconstruct the metaphysical tradition of the West, taking into account modern thought, especially the process-relational philosophy of Alfred North Whitehead. His approach is based on "a logic of inter-

subjectivity." An important theme of this logic is that community in the Trinity is a pattern for community in creation. Bracken explores the implications of this view for the relationship between God and the world, as well as for relationships within creations.

The book ends with a chapter on "The Need for Common Ground in the Religion and Science Debate." Part of this is a presentation of how the mind-brain problem can be conceived in this framework.

The book is stimulating reading, even for those who are not followers of Whitehead.

Reviewed by David T. Barnard, University of Regina, Regina, SK, S4S 3X4 Canada.

RELIGION & CHRISTIAN FAITH

THE SECULAR MIND by Robert Coles. Princeton: Princeton University Press, 2001. 189 pages. Paperback $14.00. ISBN: 0691088624.

It will not surprise readers of this journal that one can find evidence of a broad pattern of continual seeking after meaning in human experience. Coles says that his book explores "our secular thinking and its constant search for moral, if not spiritual, sanction."

Coles describes the limited place of the sacred in the twentieth century. He has wide interests, as evidenced by the range of things he reads and references. His own construction of meaning is interesting. For example, he summarizes part of his argument like this:

> With God gone for so many intellectual pioneers of the last two centuries, the rest of us, as students and readers, as seekers mightily under their influence, have only ourselves left as "objects" of attention. The theologians were supplanted by the philosophers, the religiously committed philosophers by the skeptical, secular philosophers, who, in turn, have been supplanted in worldwide influence by a biologist, an economist, a psychiatrist, a physicist, each of whom (Darwin, Marx, Freud, Einstein) has an inclination to be contemplative in a particular secular way: to wonder about things, about the secrets that await our triumphs of discovery.

Coles claims to be relentlessly oriented to the future. Looking to the future, and looking for meaning in a life oriented to the future, he describes a form of prayer.

> One prays at the very least on behalf of one's kind, though unsure, in a secular sense, to whom or what such prayer is directed, other than, needless to say, one's own secular mind, ever needy of an "otherness" to address through words become acts of appeal, of worried alarm, of lively and grateful expectation: please, oh please, let things go this way, and not in that direction—the secular mind given introspective, moral pause, its very own kind of sanctity.

While Coles' description of the secular mind's search for meaning is heartening, with its encouraging orientation to the future and to others, in the end, that search comes to a different position from what is affirmed by members of the Affiliation that sponsors this journal.

Reviewed by David T. Barnard, University of Regina, Regina, SK, S4S 3X4 Canada.

BUILDING THE CHRISTIAN ACADEMY by Arthur F. Holmes. Grand Rapids, MI: Eerdmans Publishing Co., 2001. 122 pages. Paperback; $12.00. ISBN: 0802847447.

Holmes, emeritus professor of philosophy at Wheaton College, is a respected senior contributor to the debate about Christian academic development. In this book, he focuses on the specific contributions made by Christian institutions. He describes seven formative episodes where educators faced problems and brought their faith and philosophy to bear. In these, he sees four "recurring emphases" that he describes as the "heart and soul" of the Christian academy. These four emphases are: (1) the usefulness of liberal arts as preparation for service to both church and society; (2) the unity of truth; (3) contemplative (or doxological) learning; and (4) the care of the soul (what we call moral and spiritual formation). Of course, many secular institutions would resonate with aspects of these four emphases. Although in secular institutions, a range of other emphases also would be important in making key decisions.

The seven episodes or movements considered are the Alexandrian School, Augustine, monastery and cathedral schools, the Scholastic university, the Reformation, Francis Bacon and modern science, and Newman and secularization (each treated in a chapter). A final chapter considers the twentieth century, not focusing on a specific crisis or episode, but on the diversity of our recent history.

This stimulating book crams many ideas into a few pages, yet it is readable and recommended.

Reviewed by David T. Barnard, University of Regina, Regina, SK S4S 3X4 Canada.

QUALITY WITH SOUL: How Six Premier Colleges and Universities Keep Faith with Their Religious Traditions by Robert Benne. Grand Rapids, MI: Eerdmans Publishing Co., 2001. 217 pages. Paperback; $19.00. ISBN: 0802847048.

To maintain a Christian commitment, an educational institution must keep these three components publicly relevant: its vision, its ethos, and the Christian persons who bear that vision and ethos. To support this thesis, Benne divides his book into two parts. The first deals with principles and general ideas; the second part deals with examples.

Institutions that began with specific Christian orientations and foundations move away from them for a variety of reasons. Benne identifies both external and internal pressures. External pressures include the need to recruit students in an increasingly secularized world, and the Enlightenment focus on science as the explanation of all things. Internal pressures result from an inadequate theology with respect to the specific mission of the institutions,

as well as weak accountability and support. In summary, "Deep down, both church leaders and faculty members no longer believed the Christian faith to be comprehensive, unsurpassable, and central."

Turning to examples of institutions that have maintained their "soul," Benne begins with a typology that identifies four variations: Orthodox, Critical-Mass, Intentionally Pluralist, and Accidentally Pluralist. These are differentiated according to the following aspects: major divide; public relevance of Christian vision; public rhetoric; membership requirements; religion / theology department; religion / theology required courses; chapel; ethos; support by church; and governance. The six examples chosen are: a Reformed college (Calvin), an evangelical college (Wheaton), two Lutheran schools (St. Olaf and Valparaiso), a Catholic university (Notre Dame), and a Baptist university (Baylor). The detailed examination of these examples leads to the conclusion stated at the beginning of the book—and of this review—that the essence of commitment derives from vision, ethos, and the embodiment of these in persons, especially leaders and faculty members.

This book is easy to read and compelling. It is well researched and documented. All those interested in the development of academic traditions will find it of value.

Reviewed by David T. Barnard, University of Regina, Regina, SK, S4S 3X4 Canada.

WILL THE CIRCLE BE UNBROKEN? Reflections on Death, Rebirth, and Hunger for a Faith by Studs Terkel. New York: The New Press, 2001. 408 pages. Hardcover; $25.95. ISBN: 1565846923.

Terkel is a Pulitzer Prize winner (for *The Good War*) who has recorded the thoughts and lives of ordinary people on a variety of topics. Perhaps his most impressive research is contained in his book, *Working.* In this volume, Terkel turns his attention to a topic relevant to everyone: death. Terkel has received wide notice for this book with reviews and interviews, including one on *60 Minutes.*

This book is divided into four parts (I am not sure why) and contains over fifty interviews. In these interviews, people comment on their lives and perceptions of death. Included among them are people from a variety of backgrounds: police officers, firefighters, health professionals, an AIDS worker, a Hiroshima survivor, a death-row parolee, a folk singer, an architect, and a retired teacher.

A church worker relates that she has read obituaries since she was nine years old and still does. A graduate student tells what she thinks of organized religion: "I dislike it immensely. I think it's done more harm than good." A civil rights worker observes: "I think one reason people are so desperate about dying is that they haven't lived yet. … I think life is miserable for most people." But there are people who give affirmations of faith including a Dutch Reform pastor who says when death comes, "Jesus Christ is going to be with me, He's going to hold my hand, and he's going to walk with me through the valley of the shadow of death."

This is not a book to give to someone who is depressed or is seeking dogmatic answers to the big questions of life. The ruminations by people with religious backgrounds, as well as by religiously indifferent folk who seek meaning in life, offer no definitive answers. However, this book illustrates above all else that most people give considerable thought to the biblical truth that "it is appointed unto man once to die."

Terkel wrote this book after his wife died. They had been married sixty years. Sickly and asthmatic as a child, Terkel has survived a quintuple bypass, and at 89 years of age, indicates he might write another book. High praise for this book from the likes of John Kenneth Galbraith and Oliver Sacks might encourage him to do so.

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

SIX MODERN MYTHS ABOUT CHRISTIANITY AND WESTERN CIVILIZATION by Philip J. Sampson. Downers Grove, IL: InterVarsity Press, 2001. 197 pages, index. Paperback; $12.99. ISBN: 083082281X.

Sampson, who holds a doctorate in social sciences from the University of Southampton in England, co-edited *Faith and Modernity* in 1994. *Six Modern Myths* discusses topics that modern critics claim are problems for Christianity. Sampson points out that these supposed problems are built on myths. He intends to defuse them by demythologizing them.

The first myth is about the Galileo event. It was claimed that Galileo, using the telescope and reason to defend the truth, was persecuted by the church which insisted that the earth was at the center of the universe. However, Aristotle and Ptolemy, not Christianity, were the originators of the earth-centered theory. At Galileo's time, the observational data did not tip the balance toward the heliocentric theory. Regarding the world view implication, the earth-centered theory did not elevate humanity's status as critics implied. Aristotle emphasized the corruption of the earth under the pristine heaven. The Copernican heliocentric system rejected the idea that earth was a cosmic sink; thus it actually elevated humanity.

The second myth concerns Darwin's evolution theory. The myth was that heliocentric theory put humanity in its place in the cosmos, and Darwin's theory put humanity in its place on earth. Again, the fact of evolution can be interpreted that humanity evolved to be the very peak of nature. Darwin claimed that evolution enables humanity to progress toward perfection. Regarding the scientific evidence, the theory of evolution as proposed by Darwin did not have sufficient data to convince most eminent scientists during his lifetime. The mixed reception in the religious circle was similar to that of the scientific community. It took about seventy-five years before the evolution theory was accepted by the scientific world.

The third myth is about the Christian exploitation of nature. This myth blames the ecological crisis on the Christian teaching of humans' mastery over nature and on the subsequent emergence of exploitative technologies in the Western countries. However, the concept of using

nature for the benefit of humanity was originated by Aristotle. The anthropocentric idea of domination was common in ancient Greek and Roman philosophies. The exploitation of the environment is not only a modern phenomenon and not a feature unique to Western culture.

The fourth myth concerns the stories of oppression of other races and their cultures by missionaries. The error of this myth came from the identification of Western civilization with Christianity. Missionaries accepted the idea of a common humanity and treated the native people with more dignity than their own national governments did. Many missionaries preached against the exploitation of natives by the colonial governments and the slave trade. Regarding the change of cultures, the naive and romantic idea of innocent native cultures was unsubstantiated, and the process was caused more by Enlightenment and evolutionary ideologies.

The fifth myth is about the suppression of the human body. It was claimed that Christianity considered the body as evil, so many natural desires were suppressed through church teaching. However, the idea of sinful flesh came from the Greek philosopher Plato. He also proposed that man is the "superior sex." The alliance between Greek thought and Christian understanding existed throughout the Medieval period and was corrected by Protestant Reformers. The real effect of Christianity included the equality of genders and the stability of families.

The sixth myth concerns the persecution of witches. The myth claimed that religious superstition and intolerance caused the persecution of these women. However, the number of witchcraft prosecutions was exaggerated, and the church was not the prime mover in the prosecution of witches. Instead, both Catholic and Protestant churches were found to have a moderating effect on these prosecutions. The incidents at Salem, MA, during the Puritan period was not typical.

This book provides much information to counter the six modern myths which accuse the Christian faith of many wrongs. The research and documentation are excellent. It may deflate the accusation of the sin of commission, but it may not extricate the church from the sins of omission. Since Western civilization was intertwined with Christian faith, the church could have and should have exerted more moral influence.

Reviewed by T. Timothy Chen, Southwestern Baptist Theological Seminary, Fort Worth, TX 76122.

GOD EXISTS by Joseph Davydov. Rockville, MD: Schreiber Publishing, 2000. 240 pages, index, 4 appendices. Hardcover; $24.95. ISBN: 1887563512.

Davydov completed his Ph.D. in 1967 at the Moscow Institute of Energy. In 1977 he graduated from the University of Marxism-Leninism in "scientific" atheism. In 1990, Davydov emigrated to the United States where he is now a Christian, a full member of the New York Academy of Sciences, and President of the International Science Center in Brooklyn.

The book under review has two parts: "God and the World" and "Six Biblical Days." Part I discusses the relationship between a transcendental God and the physical world while Part II is a scientific interpretation of the six days of Genesis.

The book is fascinating to read because of the author's knowledge of the communist atheistic propaganda concerning science and religion. The communists were irrevocably opposed to the Big Bang as the origin of the universe since it contradicted their materialistic beliefs. However, in 1977, the communists capitulated (twelve years after the acceptance of the Big Bang in the West with the discovery of the cosmic background radiation in 1965). It is no accident that Davydov graduated in "scientific" atheism in 1977 when the communists were preparing their scientists to acknowledge the Big Bang.

Davydov's emphasis in Part I of the book is that God is outside the materialistic universe. We all recall the impression the first cosmonaut Gagarin made when he announced he could find no God during his trip into space. This was the kind of evidence the Soviet Union was using to prove that there is no God. Davydov thus uses scientific arguments to demonstrate that God must be outside the physical universe so that he would not be discovered by cosmonauts.

However, the science Davydov uses is not easily translated into Western science. For example, on pages 92 and 94, Davydov refers to a "fundamental law of nature" which states that *relative matter* cannot exist in space and time without its *absolute opposite*, which exists outside of any space or any time. This must be a law of Communist science; it is not a recognizable law of Western science. It must be said here, however, that the leading Soviet scientists use Western science and, indeed, were pioneers in the understanding of the Big Bang in spite of communist orthodoxy.

"The fundamental law of nature" is not an isolated instance of the strangeness of Davydov's science. On page 97, Davydov refers to "the three scientific laws of nature." The first scientific law is that no material system can exist eternally. But this law of nature did not prevent the proposal of the Steady State Universe by Bondi, Gold and Hoyle, three highly respected physicists. Eventually, the Steady State Universe was abandoned because of experimental evidence. It was not abandoned because it violated the first of the three scientific laws of nature.

Davydov gives the second scientific law of nature as the cause of the formation or birth of a given material system always lies *outside* the system. This law is not like Newton's law of gravity or Maxwell's laws of electromagnetism where values for masses or charges are inserted and forces or fields are calculated. The law is more similar to the Second Law of Thermodynamics which states that certain things are impossible. But, in none of these physical laws, is "cause" considered. Davydov's second scientific law appears to be more a philosophical principle than a scientific law based on experimental evidence.

Davydov's third scientific law is that matter in the universe develops in a highly purposeful way. This law is not generally accepted, particularly by evolutionists. Until recently, the National Association of Biology Teachers has defined evolution as being a "purposeless" process. While this claim has been withdrawn, it was not withdrawn

because the claim was acknowledged to be wrong but because the claim could not be proven.

The same kind of scientific difficulties are associated with Part II of the book. Enough examples have been presented to convince the reader that the message of the book is difficult to accept because of the different kind of science used by Davydov.

However, I am glad that I have had the opportunity to review the book. Only a Christian scientist educated in the Soviet system has the knowledge and understanding to expose the dishonest and fallacious arguments used by the Soviet Union to discredit the Bible. For this exposure, we all owe Davydov our thanks and admiration.

Reviewed by John A. McIntyre, Professor of Physics Emeritus, Texas A&M University, College Station, TX 77843.

WALKING AWAY FROM FAITH: Unraveling the Mystery of Belief and Unbelief by Ruth A. Tucker. Downers Grove, IL: InterVarsity Press, 2002. 240 pages. Hardcover; $16.99. ISBN: 0830823328.

Tucker has chosen a difficult task in trying to unravel the mystery of belief and unbelief. While she may not have totally succeeded, she does offer some stimulating insights and illustrative anecdotes. The author identifies variables which play a role in faith and its absence, but it is unclear why these variables affect people in such different ways.

What are some of the variables in belief and unbelief? Tucker identifies many variables including reflections on the Bible, history, science, philosophy, theology, biblical criticism, psychology, social issues, God, and Christians. One factor she identifies which drives people from faith is the conclusion that God is inactive in both their own lives and the events of the world. "Losing faith is one way of responding to God's silence in the face of pain and suffering" (p. 153). When people conclude, often with sorrow and pain, that God is absent in the world, atheism or agnosticism follows.

Tucker gives many examples of faith abandonment along with the ostensible reasons. The most famous example is Chuck Templeton, a friend of Billy Graham. After conducting successful evangelistic campaigns, Chuck walked away from faith because he found it impossible "to believe that there is anything that could be described as a loving God who could allow what happens in our world daily" (p. 39).

Of all the reasons Tucker gives for the loss of faith, perhaps the Achilles' heel of faith—its greatest conundrum, puzzle, enigma, riddle (whatever it may be called)—relates to the problem of pain (or evil) in the world. The puzzle is this: if God is all powerful, he could stop the pain; if God is all loving, he should want to stop the pain. But there is pain in the world. Why? Despite the many books written on the subject by both theologians and philosophers, no adequate explanation has been agreed upon.

Tucker points out that Christians have developed an impressive array of apologetic responses to unbelief. However, as she frequently shows in her examples, these are rejected because the evidence is equivocal. This is illustrated by a philosopher who said that if he could say one thing to God, it would be: "Not enough evidence." Of course, if the evidence in the debate overwhelmingly supported one side, there would be no debate.

I particularly like the way Tucker deals with those who lose faith. She is sympathetic, compassionate, and understanding. She confesses that she never saw an atheist she disliked. She sees clearly the reasons faith falters, because she herself has struggled with unbelief. She is candid and honest when she wonders if the Christian college where she taught would have terminated her if they realized the extent of her struggle with faith. Tucker reflects this struggle with a quote from F. H. Jacobi: "I … am a heathen in my reason and a Christian with my whole heart" (p. 26).

For some, as Tucker indicates, the fact that confessing Christians lose faith may present a dilemma for the Calvinist. She suggests two explanations: either the individual was never a believer or still is. But she writes that this seems to fly in the face of avowed disbelief by those who walk away from faith. Perhaps Tucker's last chapter entitled "Real Stories of Returning to Faith" gives a glimmer of hope to those Calvinists who believe in the "P" of TULIP.

I was unaware of some of the information Tucker presents: the traumatic struggle people go through to hang on to faith; the number of web sites dedicated to this topic; the significant number of books, many autobiographical, written on this topic. If you are interested in further study of this subject, Tucker's bibliography will be of great assistance. She lists about 75 books on the topic. Tucker's book has an index, but it is truncated and omits many topics.

Tucker is associate professor of missiology at Calvin Theological Seminary. The author of fourteen books, she has also served as a missionary and a college teacher. Tucker has written a difficult, but needed book. It will help and inform those on both sides of this important issue.

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

RELIGIONS OF STAR TREK by Ross S. Kraemer, William Cassidy and Susan L. Schwartz. Boulder, CO: Westview Press, 2001. 246 pages, notes, index, list of Series, Episodes and Films. Hardcover; $22.00. ISBN: 0813367085.

Is there a god? What happens when you die? Can science save your soul? Questions like this are answerable in secular terms, as well as religious. The humanistic creator of *Star Trek*, Gene Roddenberry, tackled such questions frequently in the American success story that is *Star Trek*; in doing so he necessarily incorporated religious concepts. The three authors, all professors of religious / human studies at different academic institutions, created this volume with the intent of using it as a text in teaching religion. The book examines the history of the four *Star Trek* TV series and the nine feature films, examining how its views on religious topics changed over the years as the American culture evolved.

Perhaps all Americans can fairly be divided into two camps: those who are "Trekkies" and those who are not. Again, perhaps all Americans can be divided into two other camps: those Christians who are very much inter-

ested in liberal religious studies and those who are not. My guess is that the intersection of these two classifications (Trekkie Christians studying liberal religion) is not large. It is that intersection, of course, that the book targets. For such persons, the book might be interesting.

This book could have been written as an evangelistic outreach, perhaps in the genre of C. S. Lewis. I see nothing in it, however, that would tempt a secular reader, even a die-hard Trekkie, to take religious issues any more seriously after reading it than before. Indeed, by "explaining" some of the puzzling events of earth history as entirely materially based, the book probably will have a negative effect on the critical thinking which one wishes was possessed by every seeker after answers to ultimate questions.

If you are a Trekkie, the book may be worth reading, although probably not worth owning. It should have been titled "A Christian Vision of Star Trek: Going Where No Ethos Was Meant to Go."

Reviewed by John W. Burgeson, First Presbyterian Church, Durango, CO 81301.

BETWEEN EDEN AND ARMAGEDDON: The Future of World Religions, Violence, and Peace Making by Marc Gopin. New York: Oxford University Press, 2000. 312 pages, index. Hardcover; $35.00. ISBN: 019513432X.

It would seem that since the end of the Cold War, religion—especially in its most conservative manifestations—has been the major source of violence and destructive conflict in the world. Is this really the case? Gopin, a consultant, researcher, and trainer in conflict resolution and a Jewish rabbi, addresses this question in *Between Eden and Armageddon* and offers readers a nuanced understanding of the relationship of religion and violence.

The short answer is: "Yes, but." To be sure, Gopin notes, religion has been "a major contributor to war, bloodshed, hatred, and violence." Specifically, the more "conservative, strident—fundamentalist, if you will—expressions of modern religion" have been the ones "to evoke the most conflict and violence in the modern world." But religion is also a "barometer of social dissatisfaction" and, as such, should be understood as a diagnostician of society's failings. Gopin, moreover, suggests ways in which religion might actually lead the way in creating peaceful societies.

What Gopin is really attempting in this book is to integrate the study of religion with the social science of conflict resolution, indeed, to outline the contours of a new field of study: religion and peacemaking. This is no small task. Constructive engagement between religious systems and conflict resolution faces many barriers. The field of conflict resolution has a rationalist, cosmopolitan bias that appeals to liberal religious orientations and Western notions of tolerance and pluralism. But, as we all know, "many religious people around the world do not share this universal, 'secular' moral discourse."

Gopin is perhaps most helpful in exploring the very different universe of religious contexts that are rooted in premodern categories of thinking and feeling. Often these are outlooks of "buried injuries, resentments, and highly adversarial interactions with the rest of the world" held together by a very vivid perception and fear of cultural annihilation. It is vital, Gopin rightly argues, for peacemakers to bridge the gap "between the angrier expressions of each religion and the rest of the world." And traditional methods of conflict resolution based upon rational dialogue, he predicts, will prove woefully inadequate.

Using several interesting case studies and specific examples, Gopin argues that constructive engagement between conflict resolution and religion can only occur if we ask a new set of questions regarding religion and violence, ones no longer based on why and when things go wrong, but on why or when things go right. One of Gopin's major points is the necessity of using theological notions to help construct ethical outlooks wherein "nonbelievers can coexist equally in a given society." This amounts to nothing short of the "humanization of the Other" and "the treatment of the Other with absolute dignity." Here it is imperative either to recover or to develop myths and stories from various religious traditions to replace some of the darker concept of religious identity that depend upon the existence of "a demonic enemy who must be eliminated." Easier said than done.

This is a challenging and dense book about a topic of enormous significance. While it assumes some prior knowledge of conflict resolution theory, the generalist will certainly profit from it. His chapter on Judaism and conflict resolution provides a wealth of information that is very helpful in understanding the context of the current violence in Israel and the Palestinian Authority.

Gopin's dream that "religion can play a critical role in constructing a global community of shared moral commitments" is a noble one. I am just not as sanguine as Gopin about either a solution to the "seemingly intractable religious militancy" or the prospects for religious peacemaking. I hope I am wrong.

Reviewed by Donald A. Yerxa, Professor of History, Eastern Nazarene College, 23 E. Elm Avenue, Quincy, MA 02170 and Assistant Director, The Historical Society, 656 Beacon Street, Mezzanine, Boston, MA 02215-2010.

SOCIAL SCIENCE

THE BALANCE WITHIN: The Science Connecting Health and Emotions by Esther M. Sternberg. New York: W. H. Freeman and Company, 2001. 250 pages. Paperback; $14.95. ISBN: 0716744457.

This is a great book. It is masterfully written, well-documented, and unfolds in places with the grace and flow of a novel. As the title suggests, the book is an attempt to explain how we have come to understand that mental health and physical health are related.

Sternberg is eminently qualified to write on this topic and plays a significant role in the story that she tells in the book. The Director of the Molecular, Cellular, and Behavioral Integrative Neuro-Science Program, she heads the section on Neuroendocrine Immunology and Behavior at the National Institute of Mental Health and National Institutes of Health. She has won the Public Health Service Superior Service Award and has written over one hundred

scientific papers or views and book chapters on the subject of brain immune connections, including articles in *Scientific American* and *Nature Medicine.*

The book is organized historically, which is very helpful for this cutting-edge subject. Sternberg starts with a discussion of very early notions of health, such as those held by physicians in classical Greece. At that time, the influence of emotions on disease seems to have been greatly appreciated, even though the science of medicine was relatively unsophisticated. She outlines the history of medicine in some detail through several chapters and then introduces Descartes as the culprit who split apart the emotional and physical in the infamous "Cartesian dualism." This split was so dramatic that it created two unrelated and uncommunicating specialties: medical doctors who study illnesses of the body; and psychiatrists who study illnesses of the mind. She articulates the breakdown of Cartesian dualism as researchers on each side of the Cartesian divide repeatedly encountered influences coming from the other side of the mind/body barrier.

Sternberg's own specialty relates to the immune system. In a couple of chapters, she outlines the scientific developments which made it clear that the brain-immune "system" is a two-way street. She gives historical examples in which the immune system and the brain communicate.

Sternberg brings her subject into the present with her discussion of the important role that social life plays in disease. She shows how having a healthy network of social and familial support provides measurable health benefits. She describes some of the recent studies that have shown a connection between religious belief and health. She argues that, although the phenomena may be entirely explicable in terms of the placebo effect, the intuition of religious people praying for health is effective.

The book concludes with an exhortation to the medical community to continue to move in the direction of treating patients holistically. Sternberg calls for medical doctors to pay especially close attention to patients' descriptions of their mental and emotional states.

The book succeeds on a number of levels. Although, like any book dealing with medical science or biology, it can get aggressively poly-syllabic in places, and there are chapters where a number of acronyms are introduced that pose some challenges for the nonspecialist. In general, however, the book is so well written and so authoritative that it will repay any reader who is looking for a good introduction to this important and emerging discussion of the relationship between physical and mental health.

Reviewed by Karl Giberson, Editor of Research News & Opportunities in Science and Theology, *Professor of Physics, Eastern Nazarene College, 23 East Elm Ave, Quincy, MA 02170.*

WHERE GOD LIVES: The Science of the Paranormal and How Our Brains Are Linked to the Universe by Melvin Morse. New York: Harper Collins Publishers. 190 pages. Paperback; $13.00. ISBN: 0061095044.

Morse is a practicing pediatrician in Seattle who had worked intensively with children with near death experiences. This is his fourth book and he has appeared twice on the Oprah Winfrey show.

His basic thesis is that children who have had near death experience (NDE) become more creative, compassionate, disciplined, even-tempered, and altruistic. He credits this to the stimulation of the right temporal lobe during NDEs. Morse is aware that mock NDE experiences can be created in the lab which also cause the subject to have a sense of being out-of-the-body and feeling bathed by Divine Light. However, he is no materialist and believes that NDE are real spiritual encounters with God. He calls the right temporal lobe the spot in our brain that communicates with God.

To document his stories, Morse covers too many topics such as memory, homeopathy, hauntings, past life readings, the power of prayer, hypnotism, psychic phenomenon and so on. The lack of footnotes make it hard to check Morse's stories. What if it could be documented scientifically that subjects who had NDE really saw things while unconscious that they could only see if they really were outside their body? This would poke a hole through naturalism so large as to cause naturalism to sink. Advocates of naturalism are fully aware of this and work diligently to try to discredit such findings. This book, which is written for lay audiences, does not present enough documented evidence to persuade a scientist that there is more to the mind than the brain. But it does have an excellent bibliography for further reading on all sides of the mind/body debate.

Reviewed by Leland Gamson, Marion, IN 46953.

LEADERSHIP AND THE NEW SCIENCE by Margaret J. Wheatley. San Francisco: Berrett-Koehler Publishers, 1999. 197 pages. Hardcover; $24.95. ISBN: 1576750558.

This book is a revised and expanded edition that seeks to bring insight from modern science to managerial practices. Wheatley's thesis is that a new era of leadership can be ushered in by applying quantum science to management theory. An audio book of the 1992 edition is available.

Wheatley is enamored with science, but she has in mind an unusual understanding of science heavily featuring the works of Fritjof Capra. The premise of the book is that science has profoundly influenced society, and based on recent discoveries in particle physics, this trend will continue. Wheatley believes that an analogous quantum leap forward will occur in managerial practices by applying insight from modern science.

Each chapter summarizes an area of science, often interspersed with anecdotal managerial practices, culminating in some great insight into how science provides support for Wheatley's new managerial practices. She is so convinced that science will herald a new era in leadership that she has "spent hours staring at [s-matrix diagrams describing particle physics], knowing they have something to teach me about organizational structure and how we might chart roles and relationships differently" (p. 71). This sure beats astrology.

The science vignettes tend to be simplistic synopses that suffer from over-analysis by a nonscientist. For example, Wheatley believes that "the Second Law of Thermodynamics applies only to isolated or closed systems, to

machines, for example. The most obvious exception to this law is life" (p. 77). Having exempted life from the second law of thermodynamics she moves on to declare that "the source of life is new information—novelty—ordered into new structures. We need to have information coursing through our systems, disturbing the peace, imbuing everything it touches with the possibility of new life" (p. 96). Now these statements may appear contradictory but "if this is hard to comprehend, remember that the quantum realm is weird even to scientists" (p. 41).

Amazingly, after using concrete examples from science, Wheatley concludes the final, more philosophical, chapter with some stunning comments. "If we look at ourselves truthfully in the light of this fire and stop being so serious about getting things 'right'—as if there were still an objective reality out there—we can engage in life differently, more playfully" (p. 162).

The book provides numerous illustrations demonstrating the dangers of scientism. Unfortunately, many people without expertise in science will be unable to recognize that Wheatley's analysis has serious problems. "Perhaps these are just the ramblings of one whose mind has gone fuzzy (like all quantum phenomena) from trying to understand quantum physics" (p. 73). Perfect insight.

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

THE PHYSICS OF CONSCIOUSNESS: The Quantum Mind and the Meaning of Life by E. H. Walker. Cambridge, MA: Pereus Publishing, 2000. 368 pages. Paperback; $18.00. ISBN: 0738204366.

The theme of this book is well expressed by its subtitle, "The Quantum Mind and the Meaning of Life." The author wants to find the meaning of life from quantum mechanics. Like so many in our postmodern generation, he starts out with an easy dismissal of historical Christianity: "Can anyone who claims to be rational today—when religion no longer serves as an explanation of where we came from or how we got this way—believe that anyone was raised from the dead?" He openly embraces science, in particular, physics, as the new religion, the new absolute truth. But this leaves a problem: How do we fill that void in our hearts? Throughout the book, Walker includes vignettes of how the death of his girlfriend caused him to ask deep questions: "Where is home? Is there any home?" "What are we really?" "Where do we go for salvation?" Walker finds the answers in a religion which he says is scientific: Zen Buddhism. After scoffing at the idea of the Resurrection as irrational, he finds the following statements to be perfectly wise:

> The student Doko came to a Zen master and said, "I am seeking the truth. In what state of mind should I train myself, so as to find it?"
>
> Said the master, "There is no mind, so you cannot put it in any state. There is no truth, so you cannot find it."
>
> "If there is no mind and no truth to find, then why do you have these monks gather before you every day to study Zen and train themselves for this study?"
>
> "But I haven't a inch of room here," said the master, "so how could the monks gather? I have no tongue, so how could I call them together to teach them?"
>
> "Oh, how can you lie like this?" asked Doko.
>
> "But if I have no tongue, how can I lie to you?" asked the master.
>
> Then Doko said sadly, "I cannot follow you. I cannot understand you."
>
> "I cannot understand myself," said the master.

Christianity is foolishness, but this is wisdom to the postmodern man. Walker has written another book in what is now an industry of books mixing New Age religion with much hand-waving, mysterious-sounding explanations of Quantum Mechanics and cosmology, a trend started with books like *The Tao of Physics* and *The Dancing Wu Li Masters.* The heart of these books is a complete embracing of the Copenhagen interpretation of Quantum Mechanics, which says that mental observations cause jumps in the quantum mechanical wave functions. Because some well-known scientists have taught this interpretation, the mind-over-matter connection is taken as an incontrovertible deduction of absolute Science. The Copenhagen interpretation is not a deduction from the data, however, but an interpretation put on the data, and many, if not most scientists today, reject the Copenhagen interpretation.

Space does not allow me to give an overview of modern interpretations of Quantum Mechanics, but suffice it to say that most quantum physicists I know do not put the human mind in such a special role; they would say that the interaction of particles with *any* macroscopic system would give the same type of quantum jumps.

Even if one accepts the Copenhagen interpretation, however, it is a long way to the leaps of imagination which Walker and other similar writers accomplish. Walker says that the idea that "1/10 of 1%" of our minds are shared in common with other people's minds is "forced on us by physics." He goes from this to the conclusion, also found in other similar New Age/Quantum books, that we are God and God is us. This allows him the comforting conclusion that his deceased girlfriend is still with him and in him. Some people may find comfort in these ideas and Zen philosophy, but it is utter nonsense to say that physics forces us to accept these beliefs.

About two-thirds of the way through the book, Walker adds a few new twists. As a brain scientist, he gives an overview of the workings of the brain and argues that the fact that electrons must tunnel quantum mechanically across synapses proves that Copenhagen mind-over-matter choices occur in the brain. Quantum mechanical tunneling through barriers is a ubiquitous phenomenon, however, and Walker gives no evidence why tunneling in the brain has cosmic implications while tunneling in, say, a mammal liver or in electrical tunneling diodes or in the decay of radioactive elements does not. In particular, Walker does not address the important quantum mechanical issue of *coherence.* According to his calculations, seven

electrons must tunnel across a synapse at the same time to give a signal. If these electrons do not tunnel *coherently*, that is, with correlated wave functions, then the information of their wave functions will be lost, and the signal will be no different from any other electrical signal. From my own study of biophysics, I can say that almost certainly the tunneling in the neurons is incoherent and therefore not intrinsically different from any other electrical signals.

Walker also proposes some radical new ideas in physics, without alerting the reader to just how radical these ideas are. He proposes a change in the Dirac equation which would allow a consciousness term; he also argues that the Arrow of Time (our sense of time passing) is not related to the Second Law of Thermodynamics. A change in the equations of Quantum Mechanics would be a truly revolutionary step deserving a Nobel prize; so far no one has succeeded at such a program. In the case of the Arrow of Time, Walker argues that quantum state jumps give the direction of time. One might argue this, but it is not the standard view and relies, again, on the assumption that the observation / quantum-jump process of the Copenhagen interpretation is the central fact of physics. By contrast, many quantum physicists are working in the opposite direction—trying to show that the Second Law leads to the appearance of quantum jumps.

Interestingly, Walker gives support to Intelligent Design theorists in several places when he, as a brain scientist, speaks of how the nerves in the brain are "tailor-made" or "designed" for thought. He does not address where this design comes from, but he feels comfortable talking of design. This is my experience with many biophysicists who have spoken at the University of Pittsburgh—they quite freely use phrases like "design" and "fine-tuning" to describe the processes, and do not feel they are being unscientific in doing so.

The main value of this book is in the modern discussion of brain synapses; the New Age philosophy is quite standard by now and can be found in numerous other, similar books.

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THE GENEALOGY OF VIOLENCE: Reflections on Creation, Freedom, and Evil by Charles K. Bellinger. New York: Oxford University Press, 2001. 153 pages, index. Hardcover; $35.00. ISBN: 0195134982.

We have manifold evidence that *Homo sapiens* is a very violent species. And there is no shortage of notions as to why that is the case. In this book, Bellinger argues that Sfren Kierkegaard should be added to the list of thinkers who help us to make sense of political violence in history. Bellinger, a theological librarian and an ethics professor at Brite Divinity School, demonstrates convincingly that Kierkegaard is a rich—and largely overlooked—resource for understanding the roots of violence.

Bellinger anchors the Kierkegaardian understanding of violence in the uniquely human experience of angst (anxiety, fear), which—contra David Hume and Ernest Becker—does not arise out of fear of death. Rather, angst is the product of human beings coming into existence as spiritual creatures. The call to live in genuine communion with God is the call of creation drawing individuals into more mature forms of selfhood. Nevertheless, humans resist the call because immature egos experience it as angst-producing pressure. Sin, according to this understanding, is a function of "ego protection" and has its origins in "the illegitimate way human beings try to control or reduce their feelings of angst" (p. 6). Humans in this angst state are desperately seeking to control their own selfhood, but they succeed only in avoiding the possibility of spiritual growth. The inward pressures to become more mature persons generate frustration and anger that is the root of violence toward others. Instead of addressing their internal alienation, humans project their anger outward. He states:

> When an entire society is made up of persons who exist in this psychological state, the society as a whole acts on the basis of this spiritual sickness. The society develops the need to identify and attack an Enemy. The society selects scapegoats and sacrifices them as a way of reinforcing its impulse to ego-protection (p. 67).

The Genealogy of Violence is a thoughtful work of theology, one that both contributes to the literature on Kierkegaard and explores the basic elements of a Christian understanding of violence. But Bellinger's project is much more ambitious conceptually. He is deeply concerned with questions related to what historian George Marsden has labeled "the outrageous idea of Christian scholarship." Specifically, Bellinger argues that Christian theology can be expanded into a fully developed social science, one that approaches the empirical data of human behavior from a theological interpretive framework. Doing so, Bellinger maintains, promises to yield more satisfactory insights than a thoroughly secular social science limited by "methodological atheism." He asserts that mainstream social science is bound to a "flattened secular landscape" that rules out the most critical factor to understanding the human condition: the self exists before God (pp. 92–3). Consequently, "secular approaches to social understanding are self-crippling; they can never comprehend the human condition adequately" (p. 8).

These are extremely provocative claims, and although I wish Bellinger had developed them further, he is to be commended for his bold critique of the limitations of "methodological atheism." He is, I believe, entirely correct to suggest "that the closure to transcendence inherent in methodological atheism prevents its theorists from fully understanding the phenomenon they are seeking to grasp" (p. 96). It is important to recognize, however, both the limiting and the enabling nature of "methodological atheism." The reductionistic methodologies of the sciences have been wildly successful when employed in the service of relatively circumscribed questions that lend themselves to empirical investigation. There is nothing untoward about the stance of "methodological atheism" for a vast array of problems ranging from fixing one's car to examining spectral lines in distant stars.

The rub, of course, comes when reductionistic methodologies are pressed inappropriately into service to provide authoritative and often exclusive answers to questions that probe the deeper meanings of human experience. Clearly,

those questions require all the knowledge, insight, and wisdom we can muster. If the kind of Christian scholarship that Bellinger seems to be advancing involves a genuinely transdisciplinary dialogue within the academy wherein theology provides an important interpretative lens for scientific inquiry, I am in full agreement. I fear that anything less than this—whether it be a functional compartmentalization of faith and science, a so-called dialogue between science and religion that patronizes theology or tries to bully it into accommodationist stances, or a hybridized empirical-theological method (whatever that might be)—does not respect the enormous potential of science and theology in full dialogue. Given the demands of attempting to understand the human experience, better make additional room at the table for some historians, artists, and poets. They will come in handy.

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CHRISTIANITY INCORPORATED: How Big Business Is Buying the Church by Michael L. Budde and Robert W. Brimlow. Grand Rapids, MI: Brazos Press, 2002. 191 pages, index; bibliography. Hardcover; $22.99. ISBN: 1587430266.

Walter Brueggemann recommends this volume, and for many, that is reason enough to read it. Written by two Roman Catholic laymen, one an economist, the other a philosopher, its primary focus is on Catholicism and Pope John Paul II's *Centesimus Annus*, promulgated in 1991. There is also an assessment of several similar Protestant position papers.

The authors begin with a consideration of the chaplaincy function within the U.S. military, arguing that, in many ways, it not only subordinates the function of Christianity to military structures and goals but also is, itself, counter-productive to the Christian message. They then extend this analysis to corporations, who use (misuse) "spirituality" concepts to further their own capitalistic goals and structures. If that were not sufficiently disconcerting, they also discuss how the churches (in this case, primarily the Roman Catholic church) have abandoned their historical role as a critic of the structures of society to become advocates and supporters of those structures. In so doing, they argue, they are "losing their souls," in the sense in which Stephen Carter uses that term in his recent book, *God's Name In Vain*. For those who have read Carter's book, this work is a natural sequel.

The book makes excellent reading for those who are alarmed to see modern Christianity becoming synonymous with the celebration of "America." The authors show how the political and economic forces in our society that see prosperity and comfort as the highest goals have infiltrated the churches, leading them to become agents of programs not properly part of the Christian message. In short, their goal in this book is to show "… how the workings of the world economy in particular steer the Christian gospel and its expressions into safe, domesticated forms" (p. 24). "John Paul's logical starting point … as expressed in *Centesimus* is that of all liberal theorists from Hobbes and Locke to Rawls: the individual person … [His] argument is indistinguishable from that of Locke in *The Second Treatise of Government*" (p. 114). They see the *Centesimus* as confused, using a "phony distinction" (p. 117) by constructing a framework in which Christians can supposedly hold a primary allegiance to both Christ and the state. These two goals cannot both be maximized, they assert, and if a person tries to do so he or she must seriously compromise one or the other. Seeing the church as simply a corporate citizen of the state makes it inevitable that the state's structures will dominate.

This book is recommended for ASA members who are Roman Catholics. It is also worthwhile reading for the rest of us, for those who see Christianity as properly in the role of a critic of the structures of society, never as an advocate. For those who conflate Christianity and "America" as synonymous, the book will be an offense.

A sampling of the views of the authors, leaders in the Ekklesia Project, an ecumenical organization, may be seen on the Internet at <www.ekklesiaproject.org>.

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WHO RULES IN SCIENCE: An Opinionated Guide to the Wars by James Robert Brown. Cambridge, MA: Harvard University Press, 2001. xii + 234 pages, notes, bibliography, index. Hardcover; $26.00. ISBN: 0674006526.

Brown refers to the so-called "Sokal" affair, based on an article Sokal wrote in 1996. The article was a hoax because Sokal wanted to rescue left-wing politics from idiotic thinking. This is expressed in the Preface:

> The dichotomy of an anti-science Left against a pro-science Right is a common perception. Snow misread his scientists (in 1959) and we very likely misread ours today. The real value of the now infamous Sokal affair is to bust this simple-minded dichotomy and give some elbow room to a left-wing alternative that is (with important qualifications) broadly pro-science.

Brown thinks the argument revolves around epistemology because good epistemology ultimately influences government. As Brown observes, the winner of the "science wars" will have an unprecedented influence on how we are governed, mentioning as examples, the environment and the alarming increase of commercialization of science, thus patenting knowledge to the possible detriment of science. The science wars will only be settled after we first "explore the issues of objectivity, values, and social influences. Then we can move on."

The point is, of course, that "objectivity" and "values" are terms based on certain philosophical assumptions. Brown spends a complete chapter dealing with these assumptions revolving around words like "realism," "objectivity," and "values." This is a useful book for those interested in the politics of science and how epistemology relates to it.

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