



## Book Reviews



### ETHICS

**DESIGNERS OF THE FUTURE: Who Should Make the Decisions?** by D. Gareth Jones. Oxford: Monarch Books, 2005. 256 pages. Paperback; £ 8.99. ISBN: 1854247085.

Jones is professor of anatomy at Otago University and an ethicist. In this book, he writes about a relatively recent scientific issue. The wealth of new details in this book concerns the ethics of embryonic stem cell (ESC) research, the embryo, the fetus, and designer babies. The book has a comprehensive glossary, bibliography, index, and list of scriptural references.

This book will interest readers seeking information about these topics from a Christian perspective. The author focuses on the use of new technologies at the beginning of human life and offers valuable insight into many related ethical and theological matters.

Jones thinks Christian understanding in some scientific matters is inadequate. He directs the reader away from the well-known issues involving the womb to the laboratory with its *in vitro* technology that is of very recent origin.

Jones outlines how the problem of subfertility has often been resolved through IVF (*in vitro* fertilization) technology. The author explains the procedures involved in pre-implantation genetic diagnosis (PGD). To illustrate this approach, take the example where both parents carry the gene for fibrocystic disease where the individual embryos are screened and, in the case of those carrying the mutation, eliminated. The embryo without the defective gene is implanted and the parents then have a normal child. Jones asks "In these situations are we playing God?" No! the author responds, setting out his arguments in this carefully argued treatise. Jones thinks other matters will arise in the future where society must make decisions that some might see as playing God. Foundational to Jones' thesis is that humans should exercise dominion over nature in a responsible way, seeking to enhance people's well-being.

The author explains matters involving the zygote and how the attitude of significant sections of a community may influence legislation, impeding or even preventing ESC research. Yet such research is important, Jones writes, because at Day 6 from conception there is a collection of cells, the undifferentiated Inner Cell Mass, that is capable of creating all cell lines of tissues of our bodies. In the author's view, this research may help in some clinical situations.

The theological and ethical issues associated with ESC research are staggering. Jones states that some people think the embryo is a human individual and therefore they are opposed to research on it. Other ethicists are equally adamant that the embryo is not an individual until about three weeks of age. This would allow research under some

conditions. Jones suggests that a very early embryo without any neural elements could be used in research to achieve a greater good for others.

Jones makes a significant contribution to the current assessment and the recent findings of the neurosciences regarding the brain. He says that our mental activity is embodied in brain function that can be partially elucidated by newer imaging techniques.

This is an important book. Jones advocates a role for Christians in dialogue with those whose aim is to improve the quality of life. The book includes a very useful series of questions, based on the text, which could be used in group discussions. I highly recommended this book.

*Reviewed by Ken Mickleson, Auckland, New Zealand.*

**VIEWING NEW CREATIONS WITH ANABAPTIST EYES: Ethics of Biotechnology** by Roman J. Miller, Beryl H. Brubaker, and James C. Peterson, eds. Telford, PA: Cascadia Publishing House, 2005. 295 pages, index. Paperback; \$23.95. ISBN: 1931038325.

Evangelical Christianity is frequently viewed and applied monolithically, even by Christian scholars, when relating to scientific and/or technological developments. Yet careful attention to the differing theologies and emphases within the global Christian movement reveal subtle and not so subtle differences among Christians in the sciences, engineering, and related disciplines when it comes to making sense of the world and our place within it.

This collection of carefully edited contributions from Anabaptist scholars illustrates how useful an exposition and view of a particular set of issues can be when applied consistently. The book is based on a conference held in November 2003 at Eastern Mennonite University dealing with biotechnology, and explores genetic modifications and some Anabaptist perspectives on them. It includes both a critique and a synthesis of Anabaptist views that are faithful to overarching principles within the Anabaptist tradition such as being "concerned with both effectiveness and faithfulness" and being "willing and vulnerable to step outside of societal and cultural influences by obediently following Jesus Christ."

The thirty chapters feature twenty-four contributors in genetics, molecular biology, gynecology, obstetrics, theology, ethics, biochemistry, philosophy, nursing, history of science and technology, sociology, agriculture, and law. Illustrations and photographs aid comprehension of key issues. Responses to questions from the conference audience are included. The essays, readable and accurate, provide much food for thought. Christian leaders will find useful materials to distribute and discuss with Christians in diverse settings including college classrooms, church-based discussion groups, and Christian professionals.

One of the strengths of the book is the diversity of its contributors with commitments to a distinct Christian tradition. One can hope to see more of this type of volume from Christian publishers.

*Reviewed by Dennis W. Cheek, Vice President of Education, Ewing Marion Kauffman Foundation, Kansas City, MO 64110.*



## FAITH & SCIENCE

**SCIENCE AND PROVIDENCE: God's Interaction with the World** by John C. Polkinghorne. W. Conshohocken, PA: Templeton Foundation Press, 2005. 144 pages. Paperback; \$14.95. ISBN: 1932031928.

*Science and Providence* is a classic work by Polkinghorne, one of the most influential contributors to the field of science and religion. After making several significant contributions to quantum theory while a professor at Cambridge University, Polkinghorne made a mid-career transition into the Anglican priesthood and promptly began addressing some of the most difficult questions at the interface of science and religion.

In the mid-1980s, Polkinghorne published a seminal trilogy *One World, Science and Creation*, and *Science and Providence* that established his insight into a God-ordained world. His contributions to science and religion are widely recognized, for which he has garnered many awards including the Templeton Prize in 2002.

Templeton Foundation Press has selected several influential books for re-release including *Science and Providence*. This book provides a seminal approach to one of the thorniest issues of science and religion, divine intervention in an orderly creation. A preface describes general developments within science and religion since the release of the first edition in 1988, and supplements the unchanged text with references to Polkinghorne's subsequent publications. In each of the topics, providence, miracle, evil, prayer, time, and Incarnation, Polkinghorne deftly describes a living God who strives to commune with his creation through the inherent nature of creation. Given humanity's limited knowledge of God, the description is necessarily incomplete but rings true.

Re-reading *Science and Providence* is like strolling down a memory lane with an old friend, remembering gems of the past and rediscovering themes as important now as they were in the past. Templeton Foundation Press has re-issued a classic resource and performed a valuable service for the science and religion community.

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

**TAKING FAITH SERIOUSLY** by Mary Jo Bane, Brent Coffin, and Richard Higgins, eds. Cambridge, MA: Harvard University Press, 2005. 382 pages, endnotes, bibliography, index. Hardcover; \$29.95. ISBN: 0674017102.

Bane is professor of public policy and management at Harvard University's Kennedy School of Government. Coffin is director of the Hauser Center for Nonprofit Organizations' Program on Religion and Public Life at Harvard University. Each authored a chapter in the book in addition to their work as editors. Higgins is a writer and editor who helped frame the book and put it together. This book was inspired by "The Intellectual Foundations Seminar on the Social Role of Faith-Based Organizations" sponsored by the Hauser Center at Harvard University. This seminar

was a part of a larger Hauser program to develop a deeper understanding of the social roles of the nation's "voluntary" sector.

The book consists of nine chapters that describe the multiple and subtle roles that religion plays on many levels in our nation's civic life. The opening chapter, which stands by itself in part one, provides a historical perspective by tracing the rise and influence of the Protestant civic engagement tradition in America during the eighteenth and nineteenth centuries. The eight case studies which follow are divided into two groups. Four studies, which make up part two of the book, examine religious practices and social interactions in several different settings. The first of these studies attempts to determine why Catholics are less involved than Protestants in both religious and civic activities. The next study looks at the different ways in which a cluster of black congregations in a poor Boston neighborhood try to meet the needs of their unchurched neighbors. The third case study focuses on the ways that three different Protestant churches in an affluent Boston suburb engage in moral discourse over the inclusion of gays and lesbians within their respective congregations. The final study in part two summarizes the results of a survey that was used to evaluate styles of civic engagement among Catholic parishes, liberal Protestant congregations, conservative Protestant congregations, and African American churches.

Part three presents four case studies that examine religion in larger and more diffuse settings, such as institutions and faith-based programs and movements. These studies include a look into the history of two Lutheran child-serving agencies, an examination of the roles of religion in the care for the elderly, an evaluation of four programs in Boston directed at teenage girls, and an analysis of the controversial political phenomenon known as the pro-life movement. The concluding chapter then offers two hypotheses for taking religion seriously. The first hypothesis is that "many of religion's social contributions are functionally good for our democracy" (p. 305). The second is that "the instrumental contributions that religion makes to our pluralist democracy are anchored in the intrinsic commitments of religious faith" (p. 308). These hypotheses are followed by a proposal which states that "creative initiatives to strengthen the intrinsic religious practices of faith communities will also serve the instrumental aims of helping to strengthen pluralistic civil society and participatory democracy" (p. 311).

The main argument of the book is that faith needs to be taken seriously by scholars and policy makers because of the valuable social contributions that religious organizations can offer. In making this argument, the authors take a middle-of-the-road approach between the two paradigms of "faith-based boosterism" and "dogmatic secularism." They believe that the Bush administration's political focus on faith-based social services is both dangerous and inadequate. It is dangerous, they argue, because it misrepresents the capacities of religious organizations to carry the burden of social welfare for the nation's disadvantaged citizens. It is inadequate because this narrow focus prevents secular leaders from recognizing the moral and spiritual contributions that religious organizations can provide. On the other hand, the authors believe that the dogmatic secularist approach devalues the positive effects of reli-

gious practice on democratic life. This approach, which argues for the complete separation of church and state, fails to appreciate the fact that nearly half of all social capital in America is religiously related.

This book provides a fair and thought-provoking analysis of the contributions that religious organizations can make in a pluralistic, democratic society. It is a book that deserves wide readership among church leaders, sociologists, social workers, and government officials at the local and national level. It could easily be used as a supplementary textbook in an introductory sociology or social work course at a Christian college. With forty pages of endnotes and an extensive bibliography, the book provides a wealth of information for further study. Hopefully, this book will help many secularists to acknowledge that religious faith from a Christian tradition has much to contribute to the overall health and well-being of our democratic society.

*Reviewed by J. David Holland, 868 Oxford Drive, Chatham, IL 62629.*

**READING GOD'S WORLD: The Scientific Vocation** by Angus J. L. Menuge, ed. St. Louis, MO: Concordia, 2004. 336 pages. Paperback; \$14.99. ISBN: 0758605803.

Shortly before reading this book, I had the privilege of reading *God at Work* by Gene Edward Veith, Jr., an excellent defense of the concept of vocation as a divine calling. Veith is a colleague of Menuge at the Cranach Institute at Concordia University Wisconsin.

*Reading God's World* takes the vocation of science and explains, in many wonderful ways, how it is a divine calling, both biblically and from the experience of dozens of distinguished scientists throughout history. Contributors include Peter Barker, Paul Boehlke, Edward B. Davis, Peter Harrison, Nathan Jastram, Kurt Marquart, Nancy Pearcey, William Powers, Henry Schaefer III, and Menuge, the editor, professor of philosophy at Concordia University Wisconsin. Five of the contributors work in Lutheran settings or research Lutheranism, so there is a distinctive Lutheran flavor to the book. I studied biology at Luther College (IA); I wish a book like this had been available to me when I was a student.

This book asks two questions: (1) Is science a legitimate vocation for a Christian? and (2) Is it possible to consider a calling in science as a divine calling? The authors answer both questions in the affirmative. They argue, as others have done, that Christian thinking was necessary for the development of science. This made me wonder about future prospects for science in our deeply secular and postmodern world, especially Europe.

The names of many famous scientists, faithful Christians, are mentioned, including Kepler, Boyle, and Popper. An index would help in referencing these. Also, a significant number of articles from this journal are referred to.

The chapters in this book are not balanced as to complexity and style. There is significant duplication of concepts, for example, recurring reference to Luther's ideas on vocation. However, this is common in edited books and does not distract from the high quality of the individual contributions.

The strongest theological content is in the final three chapters. I recommend reading these chapters first as a foundation for the historical and personal content of the first seven chapters.

I am reviewing this book from China, where I work in health development. I was recently able to use many of its illustrations in a recent lecture I gave on "Science and Faith." A constant challenge for me is to balance the extremist teaching of some Chinese Christians deeply suspicious of knowledge, science, and the world.

This book left me with two thoughts which I hope the authors will entertain in the future. First, this book provided lots of history, but little insight about what is happening today in science, or where science may be headed in the future. For example, while belief in the truth was a significant force to launch modern science, is it able to sustain science in the face of postmodernism? Second, science achieved significant development in non-Christian contexts, such as Arab and Chinese, but they did not prove able to sustain a scientific program. What does this teach us about the role of Christianity in the formation of Western science, and the future of science in our deeply secular world?

I highly recommend this book as an important contribution to our vocation as scientists. ASA members would be familiar with most of the concepts presented here, but this book does put together much important material in one place. Selected chapters should be required reading for undergraduate science majors to encourage them to press on in their calling. It would also be good for pastors to read sections of this book so they might better encourage their young church members to accept science as a calling from God, to balance the bias toward pastoral ministry as the only legitimate option for a young Christian with a passion for God.

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

**WHY PSYCHOLOGY NEEDS THEOLOGY: A Radical-Reformation Perspective** by Alvin Dueck and Cameron Lee, eds. Grand Rapids, MI: Eerdmans Publishing Company, 206 pages. Paperback; \$24.00. ISBN: 0802829074.

Editors Dueck and Lee both teach in the School of Psychology at Fuller Theological Seminary. Dueck is professor of Integration of Psychology and Theology, and Lee is professor of Family Studies. This volume includes the school's 2003 Integration lectures delivered by Nancey Murphy, Fuller's Professor of Christian Philosophy. The lectures were entitled "A Radical Proposal for Integration: Psychology in Dialogue with the Ana-Baptist Tradition." This lecture series was begun in 1971 and has resulted in at least eight other volumes including one authored by Dueck himself. He delivered the lectures in 1986.

The editors have coupled Murphy's three presentations with six response chapters written by scholars who teach at Azusa Pacific, Brigham Young, the University of Texas (Austin), the University of New Mexico, Wheaton College and Fuller in the fields of clinical, counseling, and philosophical psychology as well as family life education. While all the responses include cross references to



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Murphy's lectures, the volume lacks an index—an omission that decreases the value of the volume for ongoing scholarly discussion.

Murphy's thesis is focused on three assertions: (1) the applicability of philosopher Imre Lakatos' proposal regarding research programs in science to the theology/psychology dialogue; (2) the need for psychology to study what leads to human "flourishing" rather than "instrumental adaptation"; and (3) the possibility that such psychological research could center on the value of *self-renunciation*—an Ana-Baptist Christian essential.

Lakatos's contention is that the hard core of any mature scientific research program is a construct that is basically *metaphysical*. Asserting that theology can be similarly conceived, Murphy contends that God is theology's hard core idea. Further, Murphy uses Arthur Peacocke's "hierarchy of the sciences," to contend that theology is preeminent and that each of the sciences in Peacocke's model addresses "boundary" (i.e., unanswerable) questions that arise from the discipline just below it.

This "top-down reasoning" provides a basis for Murphy to assert that psychology is essentially *ethical* and *value based*—it always *prescribes* and never simply *describes*. Thus, an appropriate research program for psychology would be to study how humans behave when they aspire to live by certain ethical ideals. At this point, Murphy suggests that the ideal from a Christian perspective would be grounded in the self-renunciation exemplified of Jesus. She had adopted the word "kenotic" to characterize this practice of *self-renunciation* and contends that life grounded in this approach can be studied reliably and validly. Such lives will be found to be "flourishing." The title of one of her lectures typifies this as a "Radical Reformation" approach—indicating its Ana-Baptist roots.

The most negative among the critiques of Murphy's position was written by Frank C. Richardson, professor in the Department of Educational Psychology at the University of Texas, Austin, and past president of the Division of Theoretical and Philosophical Psychology of the American Psychological Association. While he agrees with Murphy's observation that psychology is never value free, he disagrees with her objectifying of theology as if it were a natural science whose effects can be studied empirically in controlled experiments.

Richardson insists that Murphy's approach inadvertently supports claims to final truth that remain riddled with personal unacknowledged assumptions that depersonalize human life and promote liberal individualism. He advocates instead a hermeneutic that goes beyond scientism and constructionism. This approach allows for interpreting humans as "self-interpreting beings" who work out the meaning of their lives in the course of personal life-stories. They are not organisms whose behaviors are determined by genetics or social environments. Humans are, indeed, moral beings whose lives can be studied in terms of the goals they set for themselves. These go far beyond selfish instrumentalism and liberal individualism—both of which lie at the core of much methodology in contemporary social and behavioral science.

As an example of serious dialogue about integration theories that attempt to relate theology and psychology,

this volume is superlative, even if the quality of the responses is a bit spotty. Richardson's reflections are representative, however, of several essays that both affirmed the uniqueness of Murphy's thesis as well as creatively critiqued it.

The volume requires attentive reading that will stimulate all those who have investment in the religion/social-behavioral science dialogue. Physical scientists would do well to consider much of this dialogue.

*Reviewed by H. Newton Malony, Senior Professor, Graduate School of Psychology, Fuller Theological Seminary, Pasadena, CA 91101.*

**TWO GREAT TRUTHS: A New Synthesis of Scientific Naturalism and Christian Faith** by David Ray Griffin. Louisville, KY: Westminster John Knox Press, 2004. 115 pages, notes, references, index. Paperback; \$19.95. ISBN: 0664227732.

Epicurus is credited with the paradox: "Is God willing to prevent evil, but not able? Then he is impotent. Is he able, but not willing? Then he is malevolent. Is he both able and willing? Whence then is evil?" From this, the argument that God does not exist is formulated as follows: (1) If God exists, then he is omniscient, omnipotent, and perfectly good; (2) If God were omniscient, omnipotent, and perfectly good, then the world would not contain evil; (3) The world contains evil. Therefore, (4) It is not the case that God exists.

Since Newton's time, the conventional world view is that the material world consists simply of "particles hitting particles." This view makes the freewill concept difficult, for there is no known mechanism by which a nonphysical mental state can act upon physical matter. The conclusion of many thinkers, Sagan, Dawkins, and others, has naturally (sic) been to accept what David Ray Griffin, the author of this book, calls "maximal naturalism," or in Sagan's words, "The universe is all there is." Griffin resolves the paradox and refutes the argument. A foreword by Howard Van Till, ASA friend, endorses him highly, and on that basis alone ASA members should study this book.

I reviewed Griffin's longer book on this subject, *Religion and Scientific Naturalism*, in *PSCF* 54, no. 3 (Sept 2002). This review may be accessed on the ASA web site ([www.asa3.org](http://www.asa3.org)) under "book reviews," or at [www.burgy.50megs.com/griffin.htm](http://www.burgy.50megs.com/griffin.htm). This volume is a summary of that book, based on lectures given in October 2002 at Christ Community Church, Spring Lake, Michigan. It is very readable.

In chapter 1, "Scientific Naturalism: A Great Truth That Got Distorted," Griffin argues that "Scientific Naturalism" is understood to rule out religion, but this is a distortion because naturalism may be theistic. He rules out supernaturalism, holding that it is not possible for there to be a divine being who can interrupt fundamental causal processes.

In chapter 2, "Christian Faith: A Great Truth That Got Distorted," Griffin summarizes his primary Christian doctrines: (1) A good God created us; (2) A loving God desires that we treat each other with justice and compas-

sion; (3) Our world, though full of evil, is essentially good; (4) God acts in the world, mostly through human beings; (5) God's attributes are shown to us through Jesus; (6) God's purpose is to overcome evil; (7) Salvation can be experienced now, albeit only partially; (8) Our lives have ultimate meaning; (9) Life beyond bodily death is a reality.

Griffin distinguishes these primary doctrines from secondary doctrines, such as the virgin birth, original sin, the Immaculate Conception, the Fall, Satan, the 6,000 year-old Earth, and others. Primary doctrines must surely be true; secondary ones may or may not be. Teaching secondary doctrines as if they are primary doctrines causes many of Christianity's problems. The main secondary doctrine distortion is *creatio ex nihilo*, which, for Griffin, makes the paradox of Epicurus, and the resulting argument against God's existence, terribly persuasive (further discussed in chapter 3).

In chapter 3, "Scientific Naturalism and Christian Faith: A New Synthesis," Griffin, while rejecting modern liberal theology, reflects on the views on Bergson, Einstein, William James, Charles Peirce, and Whitehead, arguing "panexperientialism," the idea that all actual things have "experience." (Conscious experience is enjoyed only by humans and animals.) This solves, for Griffin, the mind-body problem. As absurd as panexperientialism appears, it has been endorsed by several leading thinkers: Hartshorne, Bohm, Hiley, Waddington, and others. Panexperientialism holds that the mind and body are distinct interacting entities and that therefore humans can exercise self determination. Griffin holds, of course, a panentheistic view, a form of process theology. The divine power is persuasive, not coercive. Humans directly experience God at all times.

In chapter 4, "Christian Faith: From Arrogance to Timidity to Respectful Confidence," Griffin sums up his thesis. The great truth of the Good News of Christianity has been distorted by the idea of God's omnipotence. Consequently, the Christian message developed an arrogant doctrine of exclusivity, which ultimately led to the Crusades, the Holocaust, and the peculiarly American theology of "manifest destiny." The Enlightenment challenged this arrogance; the church retreated into timidity; theologians were systematically excluded from intellectual discussions. Griffin asserts that only by embracing process theology can Christianity again become "robust" and regain a place at the table.

Reviewed by John Burgeson, Rico Community Church, Rico, CO 81332.



## GENERAL SCIENCES

**GALILEO'S CHILDREN: Tales of Science Vs. Superstition** by Gardner Dozois, ed. Amherst, NY: Prometheus Books, 2005. 350 pages. Hardcover; \$25.00. ISBN: 1591023157.

These stories by eminent authors are collected by a former editor of *Asimov's Science Fiction*. The theme is the interaction of science with religion across space and time. Prometheus is a "skeptics" press, so antireligious views are consistent with their readership. The approach implies a negative slant toward religion, but the encounters are sophisticated and provocative.

These stories are not only triumphal tales of "Science Militant" but also offer insights into the meaning of religion in people's lives. They provide an overview of secular perspectives on religion and are useful for entertainment, self-examination, social relevance, or apologetics.

The Preface views an ongoing battle between science and religion, with the controversies concerning creationism, evolution, and "Intelligent Design" seen as paradigmatic. Sci-Fi is presented as a critical literary battlefield for winning hearts and minds (emphasis on minds). Galileo's apocryphal phrase "Nonetheless, [Earth] still moves!" is symbolic of the struggle of rationality against religious oppression.

This collection itself indicates that oppression is not what it used to be, acknowledging historical Church support of Galileo and science. Protestant reformers were just as anti-Copernican and no more charitable than Catholics who condemned Giordano Bruno to the stake in 1600. Today, Islamic extremists are a more immediate threat to rational pursuits.

This book defines superstition as the enforcement of willful ignorance through terror. "Ignorance" may be mischaracterized, since there is a world view behind every opinion and more than just religious concepts can be misused. Resistance to scientific "truth" includes opposition to global warming and neo-conservative marginalization of scientists for political ends.

The stories are all imaginative *tours de force*, as summarized below:

- LeGuin's "The Stars Below" constructs a religious culture that drives an astronomer literally underground. His thoughts take an "inward" turn, leading to discoveries that reflect a form of mythological thinking.
- In "The Will of God," Roberts presents an alternate history depicting scientific martyrdom when electricity and telephony are considered blasphemous.
- Martin offers a thoughtful and whimsical "The Way of Cross and Dragon," in which the extraterrestrial clergy of a future Christianity fights a heresy called Liars.
- Silverberg's "The Pope of the Chimps" shows a starkly realistic perspective on the danger of religious belief under limited understanding. It proposes that chimpanzees develop a worship of human beings yet misunderstand the implications of our behaviors.
- Pangborn's "The World Is a Sphere" is a strange depiction of a future history of southern United States.
- "Written in Blood" by Lawson examines unforeseen interactions between bioscience and a literal interpretation of Islamic religious language.
- In DuBois' "Falling Star," technology's fragility leads to apocalypse when a "Final Computer Virus" causes the collapse of civilization. Ironically, the story reinforces a biblical concept of human sin, ignorance, and pride.
- "Three Hearings on the Existence of Snakes in the Human Bloodstream" by Gardner is an ambitious alternate history concerning the evolution of religion under imaginative conditions. In a civilization where sacred texts describe "snakes" in human blood, the physiologist Anton Leeuwenhoek goes on trial for announcing

that they are not visible under the microscope. His claims are accepted, but his explanation gets out of hand.

- Clarke's "The Star" is a classic depicting the future discovery of the actual Star of Bethlehem.
- "The Last Homosexual" (Park) illustrates the misuse of science under conditions of fear.
- In Tiptree's "The Man Who Walked Home," a scientific experiment causes a global apocalypse. Its temporal effects become the basis of religious speculation.
- Resnick's "When Old Gods Die" depicts a utopia founded on a traditional African culture. Its animistic world view comes under challenge when people learn that modern medicine provides satisfying health results without the society's foundational mythology.
- Editor Dozois saves his best for last. Egan's "Oracle" provides an alternate history in which a physicist is rescued from persecution in a 1950s fascist Britain and ends up debating C. S. Lewis on the question of machine intelligence.

These tales are examples of top-quality storytelling. Most impressive are Martin's "The Way of Cross and Dragon," Gardner's "Three Hearings on the Existence of Snakes in the Human Bloodstream," and Egan's "Oracle" in which the fictionalized characterizations of C. S. Lewis, Alan Turing, and other historical figures are especially striking.

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## HEALTH AND MEDICINE

**FAITH AND MENTAL HEALTH: Religious Resources for Healing** by Harold G. Koenig. West Conshohocken, PA: Templeton Foundation Press, 2005. 332 pages, index. Paperback; \$29.95. ISBN: 193203191X.

Koenig is a psychiatrist who has carefully examined the relationship between religion and mental health. He is professor of psychiatry at Duke University Medical Center, where he founded the Center for the Study of Religion/Spirituality and Health. He edits the *International Journal of Psychiatry in Medicine* and Templeton Foundation's *Science and Theology News*.

Koenig wrote this book for two audiences: mental-health professionals seeking to understand the roles of religion in their field, and religious professionals who counsel persons with emotional illness. Although I belong to neither category, the book was of great interest to me because of my strong conviction that obedience to God's commandments is beneficial to our health and well-being.

Part I surveys the history of responses to mental illness. Primitive societies regarded mentally-ill persons (shamans) as gifted and desirable. Greek and Roman cultures viewed them as physiologically ill, and isolated them either for their own protection or for society's. Christianity's response has been mixed. Emotional disturbance has been variously seen as a sin to be punished, an illness to be treated, or a demon to be exorcized.

Several religious persons or groups are noteworthy for their responses to the mentally ill. John Cuidad began a compassionate ministry to the poor and sick in sixteenth-century Spain. After his death, his followers formed *The Hospitaller Order of St. John of God*. Anton Boisen became the first chaplain at Worcester (MA) State Hospital in 1924. By 1930 Boisen helped organize what became the Association for Clinical Pastoral Education.

Part II summarizes research on religion and mental health. Koenig distinguishes *religion* (an organized system of beliefs and practices) from *spirituality* (a personal quest for meaning). Most research focuses on religion, which is more readily quantified. In general, religion correlates positively with mental health. Religious people tend to have more positive emotions, less anxiety, fewer self-destructive behaviors, and fewer mental disorders. However, some religious teachings are interpreted to condone hatred, aggression, prejudice, physical abuse, and domination. Prayer is a common response to disaster or illness, and it usually helps people cope, but religiousness sometimes correlates with negative emotions (e.g., the sufferer was abandoned by God, or is being punished). Belief helps people cope with hardship by providing positive world views, purpose and meaning, social support, others-directedness, forgiveness, thankfulness, and hope. Mental-health practitioners should recognize and respect patients' religious beliefs. Where possible, they should incorporate those beliefs into treatments.

In Part III, Koenig gives what he says is the first comprehensive list of faith-based organizations that provide mental-health care. He organizes this list into five categories: (1) Clergy in the United States (roughly one-third million) who spend on average 15% of their work week doing counseling; (2) Networks and advocacy organizations, such as National Alliance for the Mentally Ill, whose state or local affiliates often work with churches; (3) Mission-driven services, such as Catholic Charities or the Salvation Army; (4) Clergy (including chaplains) with professional training in counseling; and (5) Counselors (usually without professional religious training) who emphasize faith-based therapies, including faith-based organizations (such as Teen Challenge) that provide mental health services and also professional organizations (such as the American Association of Christian Counselors).

Although this reviewer has concentrated on Christian organizations, Koenig also discusses mental-health perspectives related to Native American, Muslim, Jewish, Buddhist, and Hindu religious beliefs, and he describes faith-based mental health services offered within those communities.

Part IV discusses obstacles faced by researchers like Koenig, and by faith-based organizations that seek support to provide mental-health services. Few NIH grants are awarded for studies of religious mental-health interventions; one reason is that few peer reviewers have expertise in this area. According to Koenig, many leading scientists still hold the view that religion and science are incompatible (it seems to me that ASA is well-equipped to address this situation). In his final chapter, Koenig suggests possible solutions. His final recommendation is that "Only by working together as colleagues, respecting and valuing each other's contributions, can the secular health



community and the faith community meet the challenges that lie before them." That sounds to me like good advice for all who seek to improve the interface between science and religion.

*Reviewed by Joseph H. Lechner, Professor of Chemistry, Mount Vernon Nazarene University, Mount Vernon, OH 43050.*



## HISTORY OF SCIENCE

**SCIENCE AND BELIEF: From Natural Philosophy to Natural Science: 1700–1900** by David M. Knight and Matthew D. Eddy, eds. Burlington, VT: Ashgate Publishing Company, 2005. 272 pages, index. Hardcover; \$84.95. ISBN: 0754639967.

The development of modern science has been a subject of intense historical work over the past fifty years. This collection of essays brings some important new contributions that add further nuance to our understanding of this formative period. These two hundred years witnessed a marked transition for nature study which was seen as a branch of philosophy in the early 1700s. It was transformed into highly specialized pursuits that increasingly were the domain of specialists rather than philosophers with wide-ranging interests.

Many of these sixteen chapters were originally given as papers at a conference held at the University of Durham, England, in 2002 with the funding support of the Durham Department of Philosophy, the Ian Ramsey Study Centre at Oxford University, The Center for Theology and the Natural Sciences at Berkeley, CA, and the Wellcome Trust. The contributors are noted historians and philosophers of science along with some younger scholars drawn principally from institutions in the UK and US and three authors from Canada, France, and Germany.

The essays focus specifically on the role of beliefs, especially religious beliefs, in the scientific enterprise principally in England. The reader is exposed to careful scholarship that covers a wide range of the sciences including botany, chemistry, medicine, earth sciences, physics, and evolutionary biology. Also discussed are topics such as metaphysics, professionalization in the sciences, historiography, science and religion, altruism, publishing, and popularization of science. An opening chapter by David Knight of Durham University discusses science and beliefs in general. A concluding chapter by John Hedley Brooke of Oxford University offers insightful reflections. An index enables the reader to locate topics and people of interest.

A close reading of these essays will promote an understanding that the relationships between science and beliefs, particularly religious ones, during this period were variable, contextual, evolving, and expressed implicitly or explicitly. For example, the relationship between Paley's natural theology and Darwin's "reformed natural theology" turns out to be much closer than many have alleged or imagined. The role of professionalization as a social movement and the British navy as a core employer of full-time scientists can no longer be so easily overlooked.

Copious footnotes enable interested readers to explore ideas tantalizingly suggested in the narrative. Persons with eclectic interests will particularly enjoy this sumptuous intellectual feast. This is historical work and analysis at its finest from the minds of skilled practitioners.

*Reviewed by Dennis Cheek, Vice President of Education, Ewing Marion Kauffman Foundation, 4801 Rockhill Road, Kansas City, MO 64110.*

**THE SCIENTIFIC REVOLUTION AND THE FOUNDATIONS OF MODERN SCIENCE** by Wilbur Applebaum. Westport, CT: Greenwood Press, 2005. 243 pages, index, bibliography, biographies and primary documents. Hardcover; \$32.95. ISBN: 0313323143.

There is little doubt that the history of science is taught badly or not at all in high schools. Of particular concern to ASA members is the continuing persistence of myths about a historical conflict between science and religion. An insidious and serious misunderstanding about science arises from the traditional story of great men writing great books to combat ignorance and superstition. We all agree that the Sun does not orbit the Earth, but we have little understanding of why people used to believe that it did—still less, why it seemed perfectly rational to them. Even the term "scientific revolution" is a twentieth-century coining of dubious utility. It suggests a once only event when modern science overthrew traditional (and wrong) Aristotelian philosophy. The truth is that science is the product of near continuous development from the twelfth century to the present day.

Greenwood Press has published a series of textbooks on historical events for use in high schools. They have approached a distinguished group of academics to write the books for them. Applebaum is Emeritus Professor at the Illinois Institute of Technology with many years experience of teaching the history of science to undergraduates. His book follows the pattern of others in the series. The editors have split the text into short sections with numerous subheadings. The print is large and there are no footnotes. After the main body of text, there is a lengthy section of biographies of the major figures mentioned, a collection of extracts from primary sources and an annotated bibliography. These later sections make up nearly half of the book.

It is hard to rate this textbook. While undergraduates enjoy plenty of choice in history of science texts, schools have fewer options. On the positive side, Applebaum has compressed a huge amount of information into a small space and has arranged his material in a coherent way. He briefly introduces all of the major figures to the stage before chasing them off again so that the next character can enjoy his couple of paragraphs. The biographical section helps because students can find out a bit more about each of the individuals they have met.

The chapter "Religion and Natural Philosophy" will be particularly welcome to ASA members because Applebaum decisively rejects the idea of conflict between science and religion. The choice of illustrations is judicious and the occasional diagram clear and informative. The best section of the book from a pedagogical point of view is the collection of primary source extracts. Applebaum has selected

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some of the most important documents and included a short introduction to each of them. Sadly, there are no cross references between the main text and the relevant primary documents. The editors should correct this omission for the next edition because it would enormously increase the usefulness of the book.

Unfortunately, reading the book from cover to cover was a painful experience for me. Applebaum loads his writing with the passive tense and subsidiary clauses. This can make his meaning completely obscure. While the rebuttal of the conflict hypothesis is welcome, Applebaum is otherwise very traditional in his historiography; his story describes a succession of "great men."

This is not a book for someone looking for a good summary of early-modern science. For that, I would recommend Peter Dear's *Revolutionising the Sciences* or Alan Debus's *Man and Nature in the Renaissance*. Although Applebaum's text may be an appropriate high school textbook, I doubt that it will arouse much excitement in students for its subject matter. This is a pity because history of science is a very exciting and challenging subject. Still, this book is certainly better than allowing some of the common myths about science to proliferate further.

*Reviewed by James Hannam, University of Cambridge, England.*

**THE VICTORY OF REASON: How Christianity Led to Freedom, Capitalism, and Western Success** by Rodney Stark. New York: Random House, 2005. 270 pages, index. Hardcover; \$25.95. ISBN: 1400062284.

Stark, an outstanding evangelical sociologist of religion at Baylor University, has produced a series of books in recent years highlighting the distinct contributions of Christianity to world history including *The Rise of Christianity, For the Glory of God*, and *One True God*. This latest book expands further his general thesis that Christianity has been blamed for many of the world's current and past ills but seldom credited for any of the world's more positive aspects.

Stark's central focus in this book is on the power of reason and its corollary, the belief (or faith) in human progress. He traces its origins within Christian theology and then shows how it led to various technical and organizational improvements (mostly in Christian monastic communities), rippled out into political philosophy and spawned modern states, capitalism, and ultimately contributed substantially to the concept and reality of personal freedom. He argues that all of these changes had their start in the middle to late Middle Ages rather than during the Protestant Reformation or the Enlightenment. The latter view is the preferred period for many secularists and modern pundits; the former view is the one of the famous Weber-Tawney thesis, which has been largely discredited by more recent and more thorough scholarship.

In many respects, this book clearly and compellingly presents work that has been proceeding almost unheralded by medievalists for the past fifty years. The revolution in our understanding of the Middle Ages—no longer the "Dark Ages" which was more a reflection of our ignorance than of reality—allows us to see that Catholicism during

this period was actively shaping Western institutions and ideals and that scholasticism, the monastic movement, and various mendicant orders fed this growth.

While experts for the periods in question will undoubtedly find much to quibble with in a book of such grand scope, the general thesis of Stark is worthy of serious consideration and has been given considerable positive attention in the secular media. He is to be commended for his balanced approach that not only highlights positive contributions of Christianity but also shows awareness of the dark underside of excesses and barbaric acts that were committed in the name of Christ. *PSCF* readers will be especially interested in his comments in various sections regarding both the growth of western science and various innovations in technology, the vitamins which he finds in Christian beliefs and efforts go back to the Middle Ages. This is consistent with the more detailed work by Jaki, Lindberg, Gingerich, and many other historians of science.

*Reviewed by Dennis W. Cheek, Vice President of Education, Ewing Marion Kauffman Foundation, Kansas City, MO 64110.*



## NATURAL SCIENCES

**THEOLOGY AND MODERN PHYSICS** by Peter E. Hodgson. Burlington, VT: Ashgate Publishing, 2005. 264 pages. Paperback; \$29.95. ISBN: 0754636232.

Hodgson is a devout Catholic and distinguished nuclear physicist at Oxford University. He has been active for many years in the global dialogue in science and religion with a particular emphasis on theology and its interactions with modern physics. This extremely insightful, balanced, and humble exposition of his current understandings of the many twists and turns in this dialogue is a wonderful contribution to this burgeoning literature and should be of particular interest to *PSCF* readers.

Contrary to some writers in this domain, Hodgson is very careful in his exposition of contemporary physics and suitably cautious in the potential application of these ideas to Christian theology. He does not shy away from including appropriate mathematical equations to make his points and yet at the same time, delivers up a text suitable for educated readers regardless of their particular subject matter background. He expounds views different from his own but at the same time, explains why he finds particular views compelling.

This book is rich in the history of physics as it considers classical physics, space, time, relativity, quantum theory, quantum mechanics, determinism, cosmology, chaos, and symmetry. Hodgson devotes several chapters to discussions of theology, philosophy and physics, Judeo-Christian contributions to modern science, the Muslim centuries, the Renaissance and science, and non-Christian religions. He includes an extensive bibliography for each chapter and both a name and subject index for readers.

Hodgson's overall conclusion is worth quoting in full:

Modern science can certainly bring home to us more forcefully the incredibly intricate structure of God's creation. It may also suggest ideas and analogies that



have some use in theology. But to suppose that it can supplant traditional theology or provide new theological understanding is a chimera. Modern science has certainly enlarged our vision of the world. Instead of a cosy, man-centered world of Aristotle, we now have a vast number of huge galaxies flying away from a primeval explosion several billion years ago. In the spiral arm of one of these galaxies is the rather undistinguished star which we call the sun. This change of perspective inevitably changes the way we think of ourselves and may cause us to speak in a different way about our Christian beliefs, but it does not change in any way our fundamental convictions concerning the creation of everything by God, and the birth, death and resurrection of Christ (p. 226).

Interested readers will also want to check out the other excellent titles in this Ashgate Science and Religion Series.

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## ORIGINS & COSMOLOGY

**CHAOS AND HARMONY: Perspectives on Scientific Revolutions of the Twentieth Century** by Trinh Xuan Thuan. West Conshohocken, PA: Templeton Foundation Press, 2006. Paperback; \$22.95. ISBN: 1932031979.

*Chaos and Harmony* is an outstanding survey of modern cosmology and particle physics. The beauty of the book lies in succinctly describing complex science in accessible and engaging prose. Thuan, a professor of astronomy at the University of Virginia, specializes in young dwarf galaxies and in writing books on science for the general public, including *Discoveries: Birth of the Universe* and *The Quantum and the Lotus: A Journey to the Frontiers Where Science and Buddhism Meet*. *Chaos and Harmony* was originally published in France and, after becoming a bestseller, was translated into English and published by Oxford University Press in 2001. The current edition is the second publication in English but the first in paperback.

*Chaos and Harmony* joins a growing list of popular science books describing modern advances in physics and cosmology. The seven chapters are partitioned into two main sections covering modern cosmology and particle physics, concluding in a final intriguing chapter on "the unreasonable effectiveness of thought." Thuan has a gift for eloquently presenting complex topics in clear prose which he uses to describe engaging areas of modern science having religious overtones. He uses analogy extensively but also has a knack for connecting complex scientific ideas with familiar sights.

The golden light of the sun reflects off the woman's slender body and penetrates the man's eyes. Traveling at a speed of 300,000 kilometers per second, 10,000 billion particles of light, called photons rush through his pupils ... (p. 1).

Woven throughout the text is an emphasis on the amazing complexity and perfect timing of physical pro-

cesses in the universe. In the last chapter, Thuan collects these themes to address matters of intelligence, complexity, consciousness, and the use of mathematics to describe reality. Thuan's conclusion is: "We will have to rely on other modes of knowledge, such as mystical or religious intuition, informed and enlightened by the discoveries of modern science" (p. 334).

*Chaos and Harmony* describes the strange yet beautiful theories of the very small and the very large. Thuan delights in raising philosophical and religious questions stemming from discoveries in science and addresses issues of design and purpose as a secondary theme of the book. Consequently this could be a useful text for introductory science courses or for nonbelievers interested in contemplating the marvels of modern science as evidence for God's delicate fingerprints in creation. Thuan's writing will appeal to Christians in the sciences and humanities alike, as a resource for presenting topics of modern physics and cosmology, and as a source of inspiration in contemplating creation's complexity and design.

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

**PERIL IN PARADISE: Theology, Science, and the Age of the Earth** by Mark S. Whorton. Waynesboro, GA: Authentic Media, 2005. 233 pages. Paperback; \$16.99. ISBN: 1932805230.

This book grew out of a theological debate over the authority of Scripture versus the age of the Earth, which arose at the author's conservative Southern Baptist church. In a "Science and the Bible" class held at the church, Whorton was accused of teaching heresy for claiming that the Earth was far older than the traditional biblical age of 6,000 years. The leaders of his church believed that the Earth was young, not for scientific reasons, but because of the creation account in Genesis where God pronounced his creation as being "very good." If the Earth were as old as modern geologists claim, then there would have been animal pain, suffering, and death for untold ages before God created Adam and Eve and placed them in the Garden of Eden. How can this creation, red in tooth and claw, be called "very good" by God? And, if death existed before Adam and Eve's sin, how can death be the consequence of sin? Does this not also negate the Gospel message of Christ's dying as the penalty for our sin?

Whorton refers to the above position as the "Perfect Paradise Paradigm"—a view that believes before the fall of Adam the world was a perfect place without any form of death or suffering. Death and suffering came into the world when God cursed Adam and Eve for disobeying him in the Garden of Eden. This is the view expounded by most of the young-Earth creationist authors and organizations (for example, the late Henry Morris of the *Institute for Creation Research*).

Whorton proposes replacing this paradigm with one he refers to as the "Perfect Purpose Paradigm," the idea that God believed his creation to be "very good" because it suited his eternal purpose—the ultimate redemption of all creation for the glory of God. In the words of the author: "A majestic truth of Scripture is that God's purpose for

creation is much greater than a garden paradise for man's enjoyment."

This book is both a critique of the young-Earth "Perfect Paradise Paradigm" and a defense of Whorton's old-Earth "Perfect Purpose Paradigm." There is little discussion of the scientific evidence for an old Earth as the purpose of the book is to present an orthodox, biblically-based theology which allows for an ancient Earth as well as animal death and suffering before the Fall. While this is certainly not a new idea in Christendom, Whorton's approach is geared toward the many Americans who attend conservative churches and are sympathetic to the young-Earth creationist view of Earth history because they see this viewpoint as being more compatible with Scripture than the modern scientific explanation of Earth history.

Whorton, who earned a Ph.D. in aerospace engineering from the Georgia Institute of Technology and works for NASA's Marshall Space Flight Center, is neither a theologian nor a scientist but is involved in these issues as a lay Christian. Whorton is a preacher's son involved in his local church and associated with Hugh Ross' *Reasons to Believe* ministry. He also developed and currently teaches a course in biblical apologetics at the Whitesburg Heritage Bible College in Huntsville, Alabama. While accepting of an old Earth, Whorton is also a skeptic of biological evolution and refers to himself in the book as a progressive creationist.

While I personally disagree with Whorton's progressive creationist position, I believe that this book accomplishes his goal—presenting a reasoned defense of his "Perfect Purpose Paradigm" while effectively critiquing the young-Earth creationist "Perfect Paradise Paradigm." Judicious editing could have eliminated some repetition in this book, strongly recommended as a defense of an old Earth theology.

*Reviewed by Steven Schimrich, Assistant Professor of Earth Sciences, SUNY Ulster County Community College, Stone Ridge, NY 12419.*



## PHILOSOPHY & THEOLOGY

**TIME & ETERNITY: The Question of Time in Church, Science, and Theology** by Antje Jackelén. West Conshohocken, PA: Templeton Foundation Press, 2005. 345 pages. Paperback; \$29.95. ISBN: 1932031898.

Jackelén is the director of the Zygon Center for Religion and Science at the Lutheran School of Theology in Chicago and associate professor of systematic theology/religion and science at the same institution. She has published on feminist theology and on the challenges of the dialogue between religion and science. She writes and lectures in Swedish, German, and English. This book was first published in German in 2002.

After an introduction and comments on the hermeneutical approach used, the book is divided into four parts: (1) Narrated time in hymns; (2) Biblical and theological conceptions of time; (3) Time in the formulation of scientific theory; and (4) Aspects of the theology of time.

Jackelén's purpose is to "bring concrete theological symbol systems—and not theology per se—together with science, and then to see what happens" (p. 1).

The examination of the texts of hymns tries to see what they say about the relationship between God and time, about eternity, the future, and the relationship of human beings to time. Her thesis that time is accessible to human beings only when articulated in narrative is heavily influenced by the theory of Paul Ricoeur. "Ricoeur compares this narrative understanding to a picnic to which the author contributes the words, while the reader contributes the meaning" (p. 11). Her approach encourages theological reflection on the thoughts and feelings of the hymn writers.

Jackelén analyzed 3,682 passages containing indications of time in a total of 3,146 hymns in order to compare the frequencies of time and eternity terminology given in the hymns. Her observations are that "Hymns that deal with suffering are not content to wait for eternity" (p. 40); "Jerusalem is the city that stands high above space and time" (p. 42); time repeatedly occurs in the metaphor of the dance (p. 56); and the relationship between time and eternity has become unclear and problematic.

The second chapter examines the complex meanings inherent in "time" such as the theological concepts of God, time, eternity, and death. There is a relational dynamics between time and eternity. One significant outcome is an interpretation that cyclical and linear conceptions of time coexisted and interfered with each other (p. 68), exemplified by the Jubilee Year, which, while regular, was a cyclical phenomenon. In the New Testament, two profoundly contrasting meanings occur for the same word: eternity of God and the time of the world. But "Time is more than a deficient eternity and eternity is something other than multiplied time" (p. 116).

Chapter three, which examines time in scientific theory, contains 339 footnotes (there are 1,397 in the book), with mathematical and philosophical discussions on the concept of absolute time and variations of relative time, thermodynamics and chaos research. This is a difficult chapter and I would have to answer "yes" to her rhetorical question: "What have we learned from this chapter? Was it much ado about nothing?" (p. 176) What she has shown convincingly is that "scientific theories and theological models do not exist in isolation from each other" (p. 180).

The final chapter concentrates on the doctrine of the Trinity and eschatology. What Jackelén means by trinity is not simply that three persons enter into relationships with one another but that "the persons mutually constitute one another within the relationships. A distinction between being and relating is possible only in theoretical thinking" (p. 192). We need chronological time in order to divide time and organize it, but we need the experience of forgetting time and of having times when the measurement of it is of no importance. In this respect, the hymns that Jackelén outlines and analyzes are "guardians of rich treasures" because their narrations offer the diversity of experiences that promote theological reflection.

*Time & Eternity* is not an easy book to read: it demands some historical-theological background knowledge, an awareness of the way time is used in scientific constructs,

as well as a willingness to put up with nonprecise definitions of how the Bible uses the terms.

The bibliography alone contains 434 entries, many in German and Swedish but always with English translations. Anyone who wants to be familiar with the vast history of contributions to the subject, primarily from philosophical and theological sources, will want to examine this book carefully.

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**MORTAL MINDS: A Biology of the Soul and the Dying Experience** by Gerald Woerlee. Amherst, NY: Prometheus Books, 2005. 237 pages, includes bibliographic references. Hardcover; \$25.00. ISBN: 1591022835.

Woerlee is clear about his goal for *Mortal Minds*: to look for credible evidence for the human soul and life after death. It is also clear that he approaches the question from a purely materialistic position. Near-death experiences (NDEs), occasionally cited as evidence of an afterlife by both Christians and non-Christians, are evidence "only if they could not be explained by anything else except a life after death" (p. 16). Woerlee uses the same rationale as the average "God-of-the-gaps" proponent; once the "gap" is filled with a scientific explanation, there is no room for the supernatural. The possibility that the human soul could exist yet not be subject to scientific investigation is barely considered.

A physician and anesthesiologist, Woerlee is well-qualified to comment on neurological matters. Unfortunately, he spends chapters 7 through 14 searching for souls in what most scientists and Christians would consider unlikely places: paranormal phenomena. When he is able to offer a physiological explanation, such as the ability of the optical imperfections of the human eye to account for the perception of auras, Woerlee does so clearly and convincingly. Other arguments suffer from over-simplification. According to Woerlee, the soul cannot be necessary for life, since transplanted organs can live outside the body. Extrasensory perception must not exist; otherwise the blind and deaf would develop it. In the end, Woerlee dismisses the field of parapsychology without a serious critique.

It takes Woerlee until chapter 15 to do what he does best: provide a neurological explanation for the common features of NDEs. Bright lights are the result of sudden oxygen loss causing pupil dilation and/or visual cortex activation. The perceived tunnel is the peripheral retina succumbing to oxygen starvation before the center, while disconnection from the body results from paralytic and analgesic drugs administered during general anesthesia. Woerlee's model was previously published in a peer-reviewed journal.<sup>1</sup> *Mortal Minds* expands on it and makes it more understandable to a lay audience. Neuroscientists, however, might prefer to get the basics of his hypothesis from the journal article, where they will not have to plow first through chapters about psychic premonitions, demonic attacks and alien abductions.

There is a second difference between *Mortal Minds* and Woerlee's scholarly paper. In the journal, he sticks to

methodological naturalism and does not deny the possibility of a soul existing after death, but states merely that such existence is not necessary to explain the NDE. The book is not so restrained; in the final chapter, Woerlee confidently proclaims his final conclusion.

I had learned I have no soul. My mind is the product of the functioning of my body, so my mind will die with my body and I will not live for eternity in a life after death (p. 227).

Although Woerlee delights in his newfound freedom "from uncertainty as to my place in this universe" (p. 237) and celebrates that "No gods determine my destiny. I am the master of my own destiny" (p. 237), Christians are unlikely to rejoice at his good news.

Skeptics of NDEs will find Woerlee's physiological explanations intriguing, while proponents of paranormal research will likely complain that their views were not given a fair hearing. For Christians, this book challenges only those whose belief in life everlasting depends, at least in part, on NDE testimonials from fellow believers.

*Mortal Minds* is perhaps most valuable as an illustration of possible consequences when the tools of science are used to investigate the supernatural. Some well-meaning Christian apologists continue to cite supposedly unexplained phenomena, from NDEs to the Shroud of Turin to allegedly designed biological constructs, as evidence for certain essentials of faith like immortal souls, Jesus' resurrection, and the existence of a Creator. *Mortal Minds* demonstrates that careful examination of such mysteries can lead to reasonable naturalistic explanations. In that event, strict materialists will find their viewpoints reinforced, while God-of-the-gaps Christians dependent on such examples as bedrock of their faith may find their house built on very shaky sand.

Methodological naturalism insists that science's usefulness as an investigatory tool is limited to earthly or "natural" realm. Christians should look to Woerlee's concluding chapter as an object lesson of what can happen if those boundaries are overstepped.

<sup>1</sup>G. M. Woerlee, "Cardiac Arrest and Near-death Experiences," *Journal of Near-Death Studies* 22, no. 4 (2004): 235-49.

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## RELIGION & BIBLICAL STUDIES

**GOD TALK: Cautions for Those Who Hear God's Voice** by Ruth A. Tucker. Downers Grove, IL: InterVarsity Press, 2005. 192 pages. Paperback; \$15.00. ISBN: 0830833315.

Tucker doubts that Joseph Smith, Jr., founder of the Mormon Church, received an "audible response" when he asked God what the true church was (p. 34). Perhaps Smith's "visionary testimony was created after the church was formed ... when it was facing criticism from the outside" (p. 35).

In this book, Tucker celebrates God's silence, not his voice, "if for no other reason than the fact that silence is far less open to misinterpretation and disagreement" (p. 13).



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Her three main points are: (1) the person who has an apparent supernatural communication with God should not be interpreted as being more spiritual; (2) negative side effects are possible for those who claim to hear God's voice including self-absorption, spiritual abuse, and elitism; and (3) God is neither garrulous nor distant (pp. 14-5). "I will argue that the talkative God of today is a second-rate version of the trinitarian God" (p. 14).

Tucker discusses many people who have claimed that God told them what to do. They include Pope Urban II (launched the first crusade); Joan of Arc (political and military leader subsequently burned at the stake); Jonathan Edwards (it was God's will that the British defeated the French at Cape Breton); and Carry Nation (God told her to smash a saloon).

Tucker quotes Jim Wallis who says that true spokespersons for God are likely speaking for the powerless whereas others who claim to hear God's voice are speaking to benefit themselves. According to Wallis, the average person associates a lot of "anti-s" (such as, antiabortion, antiliberal, antifeminist, antiwelfare, antienvironmentalist) with evangelical Christians but a lot of virtues with Jesus. Wallis observes that perhaps "Pat Robertson's Christian Coalition has the wrong political agenda" (p. 27).

Read why Tucker thinks Wallis' test is not always a good guide, with her examples of John Brown and Paul Hill (pp. 26-9). Tucker offers her test as to when we may conclude that we have heard the voice of God: "If our silent expression of that voice comes forth in a way that radiates the love of Christ in word and deed, we can conclude that God has truly spoken" (p. 47).

Tucker is skeptical about apologists speaking for God. She thinks their answers to these knotty questions are deficient and unnecessary: How can a good and omnipotent God permit evil? How can a good God elect only some to salvation? and How can God's existence be proved? (pp. 53-6). Tucker says of C. S. Lewis, the only "pope of apologetics" for Protestants, that he was "compelled to leave some of his rational arguments behind and come to the foot of the cross" (p. 57). We need, writes Tucker, "a humble silence rather than a calculated defense of what cannot be rationally defended" (p. 59). Tucker thinks God is perhaps more accepting of Job's anger at God's silence than of apologists who seek to explain it away.

Tucker thinks many of those who write about listening to God offer superficial and unbiblical advice. For example, of one writer she observes: "I cannot identify one biblical illustration that would parallel his" (p. 103). And further: "Despite all the books and articles and retreats devoted to listening to God ... we ought to be dubious about claims that this is an exercise or skill that can be learned" (p. 111).

Tucker can be brutally frank as when she writes that the popularity of *The Prayer of Jabez* by Bruce Wilkinson was based partially "on our near universal tendency towards self-absorption" (p. 126).

Christians should find solace in God's silence rather than merely accepting or enduring it. God's silence should be celebrated and cultivated because "Today, we are safe in the silence of God" (p. 173). While Tucker believes God has spoken to us in the Bible and through his Son,

she questions the validity of the claims of those who say that they speak for God or that they have heard God speak directly to them. Tucker concludes that all the books, articles, and tapes in the world on listening to God's voice will not make it so (p. 173).

I liked this book. Tucker writes in an engaging fashion with clear prose further illuminated by catchy examples. She deals with some important contemporary issues, but her main topic is an analysis of the cacophony of voices claiming to be God's. Her emphasis upon the voice of God coming from the Scriptures is a salutary one.

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

**THE GREAT GIVEAWAY** by David E. Fitch. Grand Rapids, MI: Baker Books, 2005. 264 pages. Paperback; \$14.99. ISBN: 080106483X.

Fitch thinks the evangelical church has outsourced ("farmed out") many of its ministries to big business, parachurch organizations, psychotherapy, and consumer capitalism. And he does not like it. He tells why and then offers advice on how to "reclaim the mission of the church," the subtitle of his book.

What brought the church to the present unpleasant state of affairs? "(T)he main culprit in this 'giveaway' is evangelicalism's complicity with modernity" (p. 13). And what exactly is "modernity"? "(T)he veneration of modern science, the obsession with controlled factual truth, and the unabashed confidence in objective reason as located in the mind of each individual ..." (p. 14). Further, Fitch dislikes evangelicalism's scientific attempts to defend the Bible, the push to make Christianity attractive to society, the emphasis on decisions for Christ, rationalizations to justify individual objectivity (p. 15), the CEO structure of the church (p. 73); and the defaulting of psychotherapy to secularists (p. 181).

Fitch thinks modernity's confidence in science, with its control of nature and its espousal of Enlightenment individualism, is misguided. The church's acceptance of modernity has led to a lost focus for the church, and its reason for "meaningful existence." The eight chapters of the book each deal with a function of the church and how it can be improved.

Fitch faults evangelism because of its failure to lead people to a life of sanctification. He faults science because it is "a purveyor of webs of belief," it "masquerades as an objective discourse," it is a way of observing the world with its "pluses and minuses," unable to explain much of human behavior, and it is stumped concerning moral and religious issues (p. 51).

What does Fitch recommend? Immersive worship which focuses on God through art, symbol, beauty as expressed through liturgy; evangelism which counts commitments, not just conversions; leadership which is grown in the church and shared; and narrative-based preaching, rather than expository preaching.

Fitch has the following recommendations: (1) churches need to be smaller, not bigger. Of megachurches, Fitch writes: "Going from ten to 1,000 members in five years is

the sign of a sick church" (p. 27); (2) churches need to become alternatives to Starbucks as providers of warm hospitality; (3) evangelical homes need to be incubators of evangelism; (4) churches should abandon the CEO form of leadership; (5) congregations should become more economically and racially diverse; (6) churches need small groups to renew monastic practices like confession and repentance; and (7) churches need to catechize children. Fitch concludes by saying he hopes his plan to reclaim the church's mission is not a pipe dream.

Fitch is a pastor and seminary adjunct professor, so he has experience and knowledge to underpin his observations. He has obviously done a lot of reading on this subject: thirty-four of the book's pages are filled with small print endnotes (no index, unfortunately). He also wants to see the church's mission reclaimed and he is doing something about it: Fitch is co-founder of a collaborative group of Chicago area leaders who seek to reverse the trend of postmodernism.

For those who would like to see some changes made in the evangelical church, this book is a valuable resource. Fitch is not a curmudgeon merely complaining about the shortcomings of the contemporary church; he is more a reformer or revolutionist who loves the church and offers suggestions as to how it can be more Christian and thus more effective.

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## SCIENCE EDUCATION

**DOES GOD BELONG IN PUBLIC SCHOOLS?** by Kent Greenawalt. Princeton, NJ: Princeton University Press, 2005. 261 pages, index. Hardcover; \$29.95. ISBN: 0691121117.

The status and role of religion in public schools in the United States has a long and convoluted history. This is a splendid guide to an exceedingly wide range of contemporary issues from a former Deputy Solicitor General of the United States and professor of law at Columbia University. The author assumes an educated reader but no specialized knowledge of law or the various topics he explores. Detailed endnotes provide legal cases, law review articles, and other literature for each topic considered.

The first two chapters look at the history of American public schools and religion and the purposes of public school education. The next portion considers devotions, clubs, prayer, moments of silence, Bible reading, teaching religious propositions, and equal access matters.

It is the following seven chapters that highlight issues of special interest to readers of *PSCF*. Greenawalt presents a detailed exposition of topics related to teaching about religion. Three chapters hone in on teaching natural science and its relationship to evolution, creationism, intelligent design (ID), and the teaching of religion. He concludes for legal reasons that the teaching of both creationism and ID is prohibited in science classrooms and provides extensive rationales why this should be so. He carefully dissects a variety of Supreme Court and federal court decisions related to this subject and demonstrates extensive awareness of semi-popular literature and

technical literature from both ID proponents and their opponents. Greenawalt finds the legal arguments of the ID movement wanting, although I am quite sure Phillip Johnson among other legal scholars would disagree. Nevertheless, the reader can, I think, rely upon Greenawalt's account as the probable path judges would go down in such cases and indeed, some of the same rationales he supplies were part of the judge's decision in the recent Dover school district case.

The remaining three chapters consider how religion can and should be taught in history, economics, literature, civics, ethics, and comparative religion courses and the various constitutional constraints and legal limits on such teaching.

A final section consists of two chapters that deal with student rights to religious freedom and free speech, and one chapter that considers when students may be properly excused from public school activities when they or their parents object to specific content.

As a former school superintendent and state education department official, I found this book exceedingly helpful. Anyone who wants to understand not only pertinent law related to religion in public schools but also its application in a variety of situations should read it.

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**SCIENCE AND RELIGIOUS HABITS OF MIND: Irreconcilable Tensions in the Curriculum** by Ron Good. New York: Peter Lang Publishing, Inc., 2005. 104 pages. Paperback; \$22.95. ISBN: 0820471089.

Good, professor emeritus at Louisiana State University (LSU), served as a professor of science education there and at Florida State University. He has long been involved in debates about evolution and creationism and other critical issues.

The theme of the book is the difficulty of achieving scientific literacy in US schools. It contains four chapters, a bibliography, and three papers related to its theme.

Chapter one outlines Good's commentary on three main scientific discoveries: (1) Displacing earth from its exalted position (Copernicus, Kepler, Galileo and Newton); (2) Evolution of species by natural selection (Darwin); and (3) Relativity and quantum theory (Einstein in particular).

Chapter two summarizes the contributions of Darwin and Einstein and adds Bertrand Russell. Darwin needed no assistance from the supernatural "to maintain the evolution and extinction of species" because natural selection could account for everything. Darwin was willing to question the authority of the Bible. With the Galapagos Islands data, he interpreted population growth as restrained by famine, disease, and war, so "supernatural explanations were no longer necessary to explain changes in organisms over time ..." (p. 11). Darwin, once freed from religious dogma, framed his theory of natural selection that now "serve[s] as the main unifying force of all biology."

Einstein "disliked the mindless discipline practiced at the Catholic elementary school he attended as a child"

(p. 17) and preferred mathematical rigor and logic. Although Einstein rejected the label of "atheist," when he said he wanted "to know God's thoughts" (p. 20), he used religious terms in a metaphorical way. Good claims that creationists and other mystics have embraced the uncertainty they saw in Einstein's work to promote their own agendas.

Bertrand Russell, although not a scientist, "logically disposed of God and traditional religious dogma" (p. 22) because he saw it as harmful to humankind.

Chapter three is called "Scientific and Religious Habits of the Mind" and is the crux of Good's argument. Any reference or hypothesis concerning God is not necessary and intrudes upon a truly scientific approach. A scientific habit of the mind is informed skepticism and is very different from religious thinking that resorts to common sense and folk knowledge. Religious belief does not need evidence but relies on early indoctrination and the acceptance of a holy book or religious leaders. Good relies on Steven Pinker to explain how the mind works, which is by our genetic program, shaped by evolutionary history. The mind is a "biochemical processor of symbols" (p. 31) but, unfortunately "seems to be biased toward religious belief and away from scientific thought" (p. 34).

Chapter four is about democracy and science education. John Dewey, who placed scientific thought at the center of his school curriculum, is highlighted. Good contrasts natural selection and supernatural creation and claims that only the former provides an explanatory theory and that trusting in God allows religion to invade government and to cloud scientific thinking. Good does not favor any "politically correct" position that allows some compatibility between religion and science. The last part of the chapter includes a digression into post-modernism, concluding that we must unlearn old habits of the mind and question common ideas about human nature. Good questions six common assumptions, e.g., that the mind and the brain are very different things.

Good is surprised that after a century of modern science, supernatural causes and similar pre-scientific thoughts are still widespread, so he outlines some closing action plans. He proposes that teachers of science are to avoid religious beliefs because they act as obstacles. His three papers that conclude the book demonstrate Good's activism, illustrated by an LSU resolution calling for the teaching of evolution and commitment to it.

Good believes that religion obscures science teaching. He attempts to show why the struggle against religion which Darwin, as the high priest of evolution, started, must go on, because, as his subtitle implies, science and religion are incompatible and irreconcilable.

The weakness of the book is its casual and caustic nature. Good treats religion and anyone associated with it as incapable of thinking like a scientist. He dismisses Christian ethics and moral standards for the classroom, believing that scientific logic and reasoning alone are sufficient. We might ask if this sole emphasis on scientific thinking, to the exclusion of moral constraints, will ultimately prepare students to be better citizens or teachers.

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## SOCIAL SCIENCE

**THE HEART OF RACIAL JUSTICE: How Soul Change Leads to Social Change** by Brenda Salter McNeil and Rick Richardson. Downers Grove, IL: InterVarsity Press, 2004. 188 pages. Paperback; \$12.00. ISBN: 0830832696.

This book's title summarizes accurately its contents. The book is supplemented by three appendices, end notes, a bibliography, and a list of recommended resources. John Perkins, who wrote the foreword, praises the book as "a blueprint for the Christian church" and a "biblically grounded book" to make racial reconciliation practical (p. 11).

The book's main points, one from each of its ten chapters, include: (1) racism exists in the USA; (2) reconciliation is seemingly impossible; (3) racism violates the gospel; (4) only changed hearts can end racism; (5) transformation can occur through worship; (6) renounce false identities and embrace true selves; (7) receive and extend forgiveness; (8) renounce evil powers; (9) work with other people; and (10) pursue the ministry of reconciliation.

Christians can become more familiar with the issue of racial justice by referring to some of the forty-eight books in the bibliography, the eighteen in the resource list, plus the thirteen suggested videos. A list of biblical texts to explore also provides a starting point for becoming more informed about biblical approaches to racism.

McNeil is an ordained Christian minister, teacher, and evangelist. Founder and president of Overflow Ministries, she served on the staff of InterVarsity Christian Fellowship. Richardson is associate director of evangelism for Intervarsity. Previously he served as pastor of evangelism for the Church of the Resurrection in Wheaton, Illinois.

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**HANDBOOK OF SPIRITUALITY AND WORLDVIEW IN CLINICAL PRACTICE** by Allan M. Josephson and John R. Peteet, eds. Washington, DC: American Psychiatric Publishing, Inc., 2004. 180 pages. Paperback; \$37.50. ISBN: 1585621048.

While religion can be a risk factor for psycho pathology, it can also be a prophylactic in some cases. Some clinicians see the value of incorporating spiritual approaches to problems that vex people throughout life (p. ix). Thus, the purpose of this book is to show how that might happen. An important point stressed in the book is the necessity for therapists to be conversant with and respectful of the client's world view.

The crux of this book is consideration of clinical practice as it relates to the world views of Protestant Christians, Catholic Christians, Jews, Muslims, Hindus and Buddhists, and atheists and agnostics. Here is Sigmund Freud's definition of world view: "An intellectual construction which solves all the problems of our existence uniformly on the basis of one overriding hypothesis" (p. 4). Freud's world view, materialistic and atheistic



(Freud called himself "a godless Jew"), strongly influenced his clinical observations. Anna Freud, Freud's daughter, considered Albert Einstein "very childlike" for his theistic view (p. 5). For the most part, modern science views faith as a psychological crutch. Freud thought that "many who profess faith have as the sole basis of that faith an unresolved, unconscious, or 'neurotic' conflict" (p. 9).

The chapters dealing with various religions do a splendid job of summarizing the essence of each world view and how it may be an asset or liability. For instance, Protestant patients sometimes interpret psychiatric conditions, such as obsessive-compulsive behavior, as sin resulting in guilt; sometimes perceive God as overly punitive which leads to anger and anxiety; sometimes feel powerlessness which leads to sorrow and guilt (p. 66). Some Christians are Gnostic in their view that the body, with its many sinful impulses, is therefore of itself evil. This may lead to an excessive taboo on healthy sexual expression and enjoyment of sensory pleasures. On the other hand, a lot of research shows that Protestant faith is a great contributor to coping and mental health, and a successful therapist will be conversant with this.

Some beliefs and practices of ultra-Orthodox Jews may create barriers to mental health. For instance, some Jews are prone to shun outside help because of their strong belief that God is supposed to be the healer of the broken-hearted (Ps. 147:3). Further, the Jewish attachment to and respect for the community may run counter to receiving psychiatric help. One rabbi forbade Jewish psychiatric patients from seeing a therapist outside the faith. Also, the talking cure, more than the pharmacological, may be seen as a threat to faith. Jewish clients often struggle with the conflict between their sexual behavior and commitment to religious restrictions. Obsessive-compulsive disorder is a common problem in Jewish men who seek cleanliness before prayer, or among women who are excessively concerned about ritual immersion after menstruation. (Catholics call excessive religious concerns "scrupulosity.")

Eight million Muslims live in the United States. In the Muslim community, mental illness is often marked by stigma. Problems which arise among Muslims include depression, cultural alienation, substance abuse, and homosexuality. Sometimes these problems are better dealt with by a non-Muslim therapist because of the embarrassment attached to mental illness in the Muslim community.

In the United States, there are one million Hindus and two million Buddhists. A barrier to receiving secular therapy to these faiths is the concern about family honor, stigma, and secrecy. Psychotherapy is usually the last resort of people living in these communities.

Atheism is "the denial of metaphysical beliefs in God or spiritual beings" (p. 140). Agnosticism states that knowledge of the existence of anything beyond the phenomena of experience is impossible (p. 141). If the Barna Research Group is accurate, seven percent of the adult population say they are atheists or agnostics—a group larger than Mormons, Jews, and Muslims (p. 143). Atheists and agnostics are confronted with many of the problems religious people face: suffering, death, addictions, and social dysfunction. While they think life has no purpose, they place

a high value on family and have perhaps the lowest divorce rate of any group (p. 147).

This book provides a quick overview of the tenets of the major religions in the United States and how contemporary psychotherapy seeks to help in relieving the psychiatric disorders frequently associated with these religions.

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**THE CONSCIOUS UNIVERSE: The Scientific Truth of Psychic Phenomena** by Dean Radin. San Francisco, CA: Harper Edge, 2005. Hardcover; \$25.00. 362 pages. ISBN: 0062515020.

Radin is the director of the Consciousness Research Laboratory at the University of Nevada, Las Vegas. Prior to this, he did parapsychological research for AT&T, Contel, Princeton's Department of Psychology, the University of Edinburgh, SRI International, and the US government. This seventeen chapter book is divided into four themes: Motivation; Evidence; Understanding; and Implications. Radin is writing for a scientifically literate audience and defines psychic phenomenon in terms that make it measurable. Even the most hard-nosed skeptic will be convinced that he knows what constitutes evidence.

Radin presents the evidence in chapters on Telepathy, Perception at a Distance, Perception through Time, Mind-Matter Interaction, Mental Interactions with Living Organisms, and Field Consciousness. The chapters give detailed descriptions of the experiments' design and outcomes. He documents efforts to eliminate extraneous variables which may contaminate the results and create a false positive. One series of telepathy experiments conducted by Maimonides Medical Center in Brooklyn, New York, had senders mentally broadcasting randomly selected images to sleeping subjects who were completely separated from the senders by up to five miles. The receiving individuals would describe the images to third parties who would have no natural way of knowing what the image being broadcast was. They would select from a pool of eight pictures which picture most corresponded to the images the receiver described, ranking them one to eight. "Their results suggested that if someone is asked to send mental images to a dreaming person, the dreamer will sometimes incorporate those images in a dream" (p. 69). After 450 dream telepathy sessions from 1966 to 1973, the probability of achieving the hit rate by chance was 75 million to one.

Chapters on other forms of psychic phenomena also present hard data demonstrating their verifiability. Radin includes the experiments done by Stanford Research Institute on remote viewing and random-number generators (RNG) tests for psychokinesis (mind-matter interaction) conducted by Helmut Schmidt at Boeing Labs. He provides ample detail of the experiments' design and controls. Radin documents how the scientist who conducted these tests would correct any potential flaw found by the arch critics of parapsychology. Princeton engineer Robert Jahn's experiments on psychokinesis, using RNG, are also described in detail.



RNG is an electronic circuit that creates sequences of "heads" and "tails" by repeatedly flipping an electronic coin and recording the result. A participant in a typical experiment is asked to mentally influence that RNG output so that in a sequence of predefined length it produces, say, more "heads" than "tails" (p. 138).

The 108 participants were consistently able to beat chance and have a mean 51% hit rate in 1,268 studies. In 1987 Princeton University psychologist Roger Nelson reviewed the studies done by Bell Labs and Princeton and found that the result defined chance over a trillion to one.

Radin responds to parapsychology's arch critics well. For example, in professional debunker Mark Hansel's 1980 book, his "strategy was to suggest possible flaws that might have accounted for the experimental results without demonstrating that flaws actually existed and then assumes that such flaws must have occurred" (p. 222).

Irvin Child, chairman of the psychology department at Yale University, reviewed the Maimonides dream telepathy experiments and "found that Hansel's descriptions of the methods used in the Maimonides studies were crafted in such a way to lead unwitting readers to assume that fraud was a likely explanation, whereas in fact it was extremely unlikely given the controls employed by the researchers" (p. 222).

Those who dismiss evidence for psychic phenomena point to the December 3, 1987, press conference report of the National Research Council (NRC) with its negative conclusion. "The Committee finds no scientific justification from research conducted over a period of 130 years" (p. 215). The press did not pick up that the two main evaluators of the NRC committee report, psychologists Ray Hyman and James Alcock, both had long histories of skeptical publications accusing parapsychology of not being a legitimate science (p. 216). Hyman and Alcock ignored Harvard psychologists Monica Harris and Robert Rosenthal's NRC Committee reviews affirming the validity of Maimonides telepathy studies.

ASA members should take note that the arch critics of psychic phenomena are also arch critics of the validity of evidence for the power of prayer, miracles, and Intelligent Design. Most critics are members of the Committee for the Scientific Investigation of Claims of the Paranormal (CSICP), which was founded by atheist professor emeritus of Buffalo University, Paul Kurtz. He also founded the Council for Secular Humanism and the National Center for Science Education. As PSI (parapsychology) may support the idea that there is something more to mind than just the mind-body system (p. 295), no wonder naturalists like the CSICP fight it vigorously.

Radin admits that the existence of PSI does not prove life after death. However, its very existence does discredit naturalism and shows that naturalists have made up their mind and do not want to be confused by the facts.

This reviewer would recommend this book to all ASA members, as it was recommended to me by William Dembski.

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## Phenomenological Language in Ancient Revealed Narrative

Eshelbrenner<sup>1</sup> suggests that my restriction of "souls" to "higher animals"<sup>2</sup> is incompatible with the creation narrative's "swarms of living creatures,"<sup>3</sup> pointing to Cambrian invertebrates. But I used the term in a phenomenological way appropriate for an ancient text.

What would the ancient formulation imply in our modern way of speaking? Not that the writer knew, or that God teaches, modern science! But taking the creation story as narrative rather than myth is based on the premise that God revealed it to an ancient prophet. Surprisingly, a plausible reading is compatible with Earth's history, although God certainly used the prophet's own thought and vocabulary.

In the fifth "day" (or epoch) of the creation narrative, we have the first mention of animals, called "living souls," some of them dangerous, a host of swarming ones, all in the water, as well as "winged flyers" (including insects). What is common to these animals is their macroscopic size and their rapid, well-controlled movements. The ancients could not know microorganisms, which are therefore not expected to occur in this story. Each "day's" characteristics extend into all subsequent ones. That water and flying animals were created in the fifth "day" only implies that their first representatives appeared in that period.

In the late Precambrian, multicellular animals evolved, but only in its last part, the Ediacaran, did they reach macroscopic sizes. This became possible by the increased availability of free oxygen needed by each living animal cell. An enhancement of gas exchange was achieved with the evolution of a blood (or hemolymph) circulation, which made three-dimensionally extended body plans feasible, being no longer dependent on diffusion alone.

Nutritional benefits of predation grew, and evasion from predators improved, with fast movements. These faster movements required an active blood circulation and nerves linking sensory organs with muscles. Increased sophistication of nervous control systems in a brain allowed "deliberate" choices between alternative behavioral routines (e.g., feeding, flight, fight, courting), directed by a sentient functionality.

As stated,<sup>4</sup> the biblical "living souls" appear to be animals large enough to need an inner circulation and having a nervous system of sufficient complexity to allow fast movements. This would include many Cambrian and some Ediacaran invertebrates. For lack of a better biological term, I called them "higher animals." The only macroscopic pre-Ediacaran species were seaweed-like plants, in accordance with plants arising in the third "day."

In line with this "blood-and-nerves" specification of the first "living souls," the Old Testament correlates blood and "soul."<sup>5</sup> Significantly, God spoke to these creatures and blessed them.<sup>6</sup> For ancient Hebrews, organisms not conforming to this characterization would not be "living souls."