10/14/09

RELIGION AND THE IMPLICATIONS OF RADICAL LIFE EXTENSION

Edited by Derek Maher and Calvin Mercer
Palgrave Macmillan, 2009

EXPANDED BIBLIOGRAPHY AND OTHER RESOURCES

Trends in books about radical life extension and related topics include summaries of the science, ethical and public policy reflections, and futuristic speculation. No book addresses the implications of extreme longevity for different religions as does our book. A few sources address the religious implications of a particular religion. In the coming years we expect an increasing number of books will be published by authors who attempt to wrestle with the far-reaching implications, religious and otherwise, of the more ambitious biotechnology research programs. By no means exhaustive, here are some resources, partially annotated, for human enhancement technology (transhumanism) in general and radical life extension in particular. I welcome suggestions for additions to this list. –Calvin Mercer

BOOKS

Agin, Dan. *Junk Science: How Politicians, Corporations, and Other Hucksters Betray Us*. New York: Thomas Dunne, 2006.

Alexander, Brian. *Rapture: A Raucous Tour of Cloning, Transhumanism, and the New Era of Immortality*. New York: Basic Books, 2004.

Alexander, Brian. *Rapture: How Biotechnology Became the New Religion*. New York: Basic Books, 2003.
In a slightly cynical tone, Alexander tells the story of the biotechnology quest for immortality. Telling the story mainly through the life and work of scientist and entrepreneur William Haseltine, we are given a glimpse inside the interesting personalities that constitute the scientific and corporate world of this quest.

Alper, Matthew. *The "God" Part of the Brain: A Scientific Interpretation of Human Spirituality and God*. Naperville: Sourcebooks, 2006.

Bailey, Ronald. *Liberation Biology: The Scientific and Moral Case for the Biotech Revolution*. Amherst: Prometheus, 2005.
This is an excellent introduction to the current biotechnology revolution. The author is a science journalist and an enthusiastic champion of these developments. He forthrightly addresses the major critics of biotechnology, such as Francis Fukuyama, Leon Kass, and Bill McKibben.

Baumgartner, Frederic J. *Longing for the End: A History of Millennialism in Western Civilization*. New York: St. Martin's, 1999.

Benecke, Mark. *The Dream of Eternal Life: Biomedicine, Aging, and Immortality*. New York: Columbia University, 1998.
Any book on extreme longevity, published prior to the turn of the century, is dated. However, for its time, this book by a molecular biologist touched on all the relevant topics—"immortal" cancer cells, cloning, body part replacement, and deep freezing. Benecke is skeptical about the more radical claims for practical immortality that were being made in his day.

Bloom, Howard. *The Global Brain: The Evolution of Mass Mind from the Big Bang to the 21st Century*. New York: Wiley, 2000.

Blumenthal, David R. *Facing the Abusing God: A Theology of Protest*. Louisville: Westminster/John Knox, 1993.

Boyer, Pascal. *Religion Explained: The Evolutionary Origins of Religious Thought*. New York: Basic Books, 2001.

Broderick, Damien. *The Last Mortal Generation*. Sydney: New Holland, 1999.
This science writer, with a doctorate in literature and science, gives the state of extreme longevity research at the close of last century.

Brooks, Rodney. *Flesh and Machines: How Robots Will Change Us*. New York: Pantheon, 2002.
In a well-written book, the director of the MIT Computer Science and Artificial Intelligence Lab gives a fascinating account of the history, current state, and predicted future of this field. Not a technical scientist only, Brooks is familiar with the underlying philosophical issues at stake. His thesis is clear from the first page in the book: "I have devoted my life to building intelligent robots, and these robots are just now starting to emerge from labs out into the real world. As these robots get smarter, some people worry about what will happen when they get really smart. Will they decide that we humans are useless and stupid and take over the world from us? I have recently come to realize that this will never happen. Because there won't be any us (people) for them (pure robots) to take over from…With all these trends we will become a merger between flesh and machines. We will have the best that machineness has to offer, but we will also have our bioheritage to augment whatever level of machine technology we have so far developed. So we (the robot-people) will be a step ahead of them (the pure robots). We won't have to worry about them taking over."

Brown, Guy. *The Living End: The New Sciences of Death, Ageing and Immortality*. St Martin's, 2007.

Buchanan, Allen; Dan W. Brock; Norman Daniels; and Daniel Wikler. *From Chance to Choice: Genetics and Justice*. New York: Cambridge University, 2000.
The authors provide a careful reflection on the ethics of genetic technology and the implications for public policy.

Cameron, Nigel, and M.Ellen Mitchell. *Nanoscale Issues and Perspectives for the Nano Century*. New York: Wiley-Interscience, 2007.

Chapman, Audrey R. and Mark S. Frankel. *Designing our Descendants: The Promise and Perils of Genetic Modifications*. Baltimore: John Hopkins University, 2003.
This is the second report of the program described in the next listing. One of the four sections of essays is devoted to ethical and religious issues. Most of the working group participants and essayists recommend that implementation of technologies that introduce inheritable genetic modifications be contingent on achieving consensus with regard to ethical and justice issues.

Chapman, Audrey R. and Mark S. Frankel, eds. *Human Inheritable Genetic Modifications Across Generations: Assessing Scientific, Ethical, and Policy Issues*. Washington: American Association of the Advancement of Science, 2000, online: www.aaas.org/spp/dspp/sfrl/projets/germline/report.pdf
This is a report of a two-and-one-half-year long working group of scientists, ethicists, theologians, and policy analysts by a respected association. While reflecting the typical compromise language of a committee, the report recommends great caution with regard to proceeding with research programs that could lead to inheritable genetic modifications, especially those involving human enhancement. Safety and justice concerns are prominent.

Chorost, Michael. *Rebuilt: How Becoming Part Computer Made Me More Human*. New York: Houghton Mifflin, 2005.
The book is a personal account of how a computer device (hearing implant) can change one's life for the better.

Cohn, Norman. *The Pursuit of the Millennium; Revolutionary Millenarians and Mystical Anarchists of the Middle Ages*. New York: Oxford University, 1970.

Cole-Turner, Ronald and Brent Waters. *Pastoral Genetics: Theology and Care at the Beginning of Life*. Cleveland: Pilgrim, 1996.
Developments in genetic science and medical technology, such as genetic screening, require complicated decision making processes with regard to having children. The book provides theological, ethical, and therapeutic reflection for pastors, counselors, and others who work with people struggling to make these decisions.

Cole-Turner, Ronald, ed. *Beyond Cloning: Religion and the Remaking of Humanity*. Harrisburg: Trinity, 2001.
These essays by scientists, ethicists, and theologians give attention to cloning and related related technologies that allow for the manipulation of human life.

Cole-Turner, Ronald. Ed. *Human Cloning: Religious Responses*. Louisville: Westminister/John Knox, 1997.

Twelve essays provide various religious perspectives on whether human cloning is "playing God."

Cole-Turner, Ronald. *The New Genesis Theology and the Genetic Revolution*. Louisville: Westminster/John Knox, 1993.
Cole-Turner is to be commended for his relatively early attempts to generate a broad conversation among thoughtful Christians about the coming genetic revolution.

Cole-Tuner, Ronald. *Design and Destiny Jewish and Christian Perspectives on Human Germline Modification (Basic Bioethics)*. New York: MIT, 2008.

Collins, Francis S. *The Language of God: A Scientist Presents Evidence for Belief*. New York: Free Press, 2006.
Distinguished scientist and longtime head of the Human Genome Project, Collins argues for science and for God from a conservative/evangelical position. The book contains a section on bioethics.

Colson, Charles, and Nigel M. de S. Cameron. *Human Dignity in the Biotech Century: A Christian Vision for Public Policy*. Downers Grove: InterVarsity, 2004.
The publication of this book suggests that conservative Christians are beginning to weigh in on the biotechnology revolution. The authors survey developments such as cloning, nanotechnology, stem cell research, cybernetics, and pharmacogenomics and suggests conservative responses oriented around the notion of safeguarding human dignity.

Crawford, S. Cromwell. *Hindu Bioethics for the Twenty-First Century*. SUNY series in religious studies. Albany: State University of New York, 2003.

Davis, Erik. *Techgnosis: Myth, Magic, Mysticism in the Age of Information*. New York: Harmony Books, 1998.

d'Aquili, Eugene and Andrew Newberg. *Why God Won't Go Away: Brain Science and the Biology of Belief*. New York: Ballantine, 2001.

Deane-Drummond, Celia. *Future Perfect?: God, Medicine and Human Identity*. London: T & T Clark, 2006.

de Grey, Aubrey D. N. J., and Michael Rae. *Ending Aging: The Rejuvenation Breakthroughs that Could Reverse Human Aging in Our Lifetime*. New York: St. Martin's, 2007.

Dery, Mark. *Escape Velocity: Cyberculture at the End of the Century*. New York: Grove, 1996.

The Engineer of 2020: Visions of Engineering in the New Century. New York: National Academies, 2004.

Foerst, Anne. *God in the Machine: What Robots Teach Us About Humanity and God*. New York: Dutton, 2004.

Forte, Robert, ed. *Entheogens and the Future of Religion,* 2nd ed*.* Council on Spiritual Practices, 2000.

Freitas, Robert. *Naomedicine*. Austin: Landes Bioscience, 2002.
A leading nanotechnology researcher surveys nanomedicine, an accepted research field in medical schools.

Fukuyama, Francis. *Our Posthuman Future: Consequences of the Biotechnology Revolution*. New York: Farrar, Straus and Giroux, 2002.
After summarizing brain, pharmacological, genetic, and life extension science, Fukuyama competently discusses questions relating to human nature, rights, and dignity. A respected voice in the debate and a member of President Bush's Council on Bioethics, Fukuyama expresses concern over where biotechnology could take us and argues strongly for state regulation.

Fumento, Michael. *B I O Evolution: How Biotechnology is Changing Our World*. San Francisco: Encounter Books, 2003.

Garces-Foley, Kathleen. *Death and Religion in a Changing World*. Armonk: M.E. Sharpe, 2005.

Gardner, Howard. *Multiple Intelligences: The Theory in Practice*. New York, NY: Basic Books, 1993.

Gardner, James. *The Intelligent Universe.* New Page Books, 2007.

Garreau, Joel. *Radical Evolution: The Promise and Peril of Enhancing Our Minds, Our Bodies—And What It Means to Be Human.* New York: Broadway, 2005.
Garreau, a journalist with *The Washington Post* and a chronicler of cultural revolutions, provides a well-researched, detailed, and balanced guide to the science and scientists who are changing what it means to be human. One of the more fascinating sections of the book is his analysis of the Defense Advanced Research Projects, known as DARPA, the government agency charged with bringing new technologies to the military.

Gehring, Verna V. *Genetic Prospects: Essays on Biotechnology, Ethics, and Public Policy*. Lanham: Rowman & Littlefield, 2004.

Glannon, Walter. *Genes and Future People: Philosophical Issues in Human Genetics*. Cambridge: Westview, 2001.
A biomedical ethicist examines genetic technology, with attention to the impact on personal identity and future people. Glannon argues against radical life extension.

Gosden, Roger. *Cheating Time: Science, Sex, and Aging*. New York: W. H. Freeman, 1996.
The acclaimed researcher tells us what scientists have learned so far, particularly in the investigation of hormones and the paramount role they play in the aging process.

Graham, Elaine L. *Representations of the Post/Human: Monsters, Aliens, and Others in Popular Culture*. New Brunswick: Rutgers University, 2002.

Green, Ronald. *The Embryo Research Debates: Bioethics in the Vortex of Controversy.* New York: Oxford, 2001.
The author, a member of the National Institute of Health's Human Embryo Research Panel, summarizes embryo research, which holds the promise of cures for many serious diseases such as diabetes and Alzheimer's.

Grosso, Michael. *The Millennium Myth: Love and Death at the End of Time*. Wheaton: Quest Books, 1995.

Guarente, Lenny. *Ageless Quest: One Scientist's Search for Genes That Prolong Youth*. New York: Cold Spring Harbor Laboratory, 2002.
Guarente is a MIT molecular biologist working to identify longevity-regulating genes. This book is similar to a number of others that have appeared with a biographical or autobiographical look at key developments in the biotechnology revolution. Guarente gives a fascinating look at the people, politics, and scientific procedures inside his lab at MIT.

Haidt, Jonathan. *The Happiness Hypothesis: Finding Modern Truth in Ancient Wisdom*. New York: Basic Books, 2006.

Hall, Stephen. *Merchants of Immortality: Chasing the Dream of Human Life Extension*. Boston: Houghton Mifflin, 2003.
Hall gives insight to the persons and companies that are behind radical life extension science.

Halperin, James L. *The First Immortal: A Novel of the Future*. New York: Del Ray, 1998.
This novel is based on the anticipated success of cryogenic preservation.

Hamer, Dean H. *The God Gene: How Faith is Hardwired into Our Genes*. New York: Doubleday, 2004.

Harris, John. *Enhancing Evolution: The Ethical Case for Making Better People*. Princeton: Princeton University, 2007.

Hayles, N. Katherine. *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*. Chicago: University of Chicago, 1999.
Hayles, UCLA professor of English, tells the scientific story and, refreshingly, relates the

scientific theories to practical applications and literary texts. She shows how the literature help shapes what the technologies mean and what the theories signify in different cultural contexts.

Hayward, Jeremy W., and Francisco J. Varela. *Gentle Bridges: Conversations with the Dalai Lama on the Sciences of Mind*. Shambhala, 1992.

Hick, John. *Evil and the God of Love,* 2nd ed. New York: Harper & Row, 1978.

Holland, Suzanne, Karen Lebacqz, and Laurie Zoloth. *The Human Embryonic Stem Cell Debate: Science, Ethics, and Public Policy*. Cambridge: MIT, 2001.

Horgan, John. *Rational Mysticism: Dispatches from the Border between Science and Spirituality*. Boston: Houghton Mifflin, 2003.

Hughes, James. *Citizen Cyborg: Why Democratic Societies Must Respond to the Redesigned Human of the Future.* Boulder: Westview, 2004.
This provocative work by a medical ethicist argues that technologies pushing the boundaries of humanness can radically improve our quality of life "if" they are controlled democratically and made equally available in a liberal society. He calls his view "democratic transhumanism."

Huxley, Aldous. *Brave New World*. Scranton: Harper, 1931.
This is the disturbing novel about a state that controls human reproduction so completely that the state determines the nature of people. The novel has become relevant for a new generation in light of the biotechnology revolution.

Jedicke, Peter. *Extreme Science: Transplanting Your Head and Other Feats of the Future*. New York: St. Martin's Griffin, 2001.

Johnson, Don. *The Meaning of Life in the 21st Century: Tensions among Science, Religion and Experience*. Bloomington: iUniverse, 2008.

Kass, Leon. *Life, Liberty and the Defense of Dignity: The Challenge for Bioethics*. San Francisco: Encounter Books, 2002.
Kass argues that the new biotechnologies threathen human dignity. He addresses cloning, embryo research, and the sale of organs. Chapter nine is a reprint of his article "L'Chaim and Its Limits: Why Not Immortality?"

Klein, Bruce J. and Sebastian Sethe, eds. *The Scientific Conquest of Death.* Buenos Aires: LibrosEnRed, 2004.
This collection is published by the Immortality Institute (www.imminst.org) and contains articles on the science and ethics of radical life extension. Contributors include leading names in the field, such as Aubrey de Grey, Cambridge University scientist; Robert Freitas, a nanotechnology expert; Raymond Kurzweil, acclaimed inventor and author; Marvin Minsky, MIT artificial intelligence expert; and Michael D. West, an expert in

telomerase molecular biology and stem cells and founder of the biotechnology Geron Corporation that has made important discoveries.

Kristol, William and Eric Cohen, eds. *The Future is Now: American Confronts the New Genetics*. Lanham: Rowman & Littlefield, 2002.
This collection charts the debate about the genetic revolution through selections from books, journals, news media, and congressional testimony. Many of the selections reflect a conservative point of view.

Kurzweil, Ray. *The Age of Intelligent Machines.* Cambridge: MIT, 1990.
This is an earlier book, the themes of which are addressed in more detail in the later books.

Kurzweil, Ray, with Robert Bauer and Steven R. Flier. *Ten Percent Solution for a Healthy Life: How to Reduce Fat in Your Diet.* New York: Crown, 1994.
Kurzweil advocates using cutting edge medical knowledge and technique to extend one's life long enough to participate in the coming "singularity" that will allow humans to transcend their biology in a radical fashion.

Kurzweil, Ray. *The Age of Spiritual Machines: When Computers Exceed Human Intelligence.* New York: Viking, 1999.
Kurzweil has been amazingly accurate in many of his predictions about technological advance. Here he details his prediction about how the line between humanity and technology will fade in the 21st century.

Kurzweil, Ray. *Are We Spiritual Machines: Ray Kurzweil Vs. the Critics of Strong AI.* Edited by Jay W. Richards. Seattle: Discovery Institute, 2002.
This book makes available a very interesting, lively, and important debate about "strong AI," the notion that artificial intelligence can eventually be powerful enough to produce consciousness. It includes contributions by respected voices in the debate, including John Searle, professor of philosophy at the University of California at Berkeley.

Kurzweil, Ray. *The Singularity Is Near: When Humans Transcend Biology.* New York: Viking, 2005.
In his latest book, a massive 652 pages long, Kurzweil details the coming "singularity," an era when our intelligence will become increasingly nonbiological and yield the dawning of a new civilization that enables us to transcend our biological limitations and amplify our creativity. While the social and philosophical ramifications of these changes will be profound, and threatening, Kurzweil remains forever the inspiring optimist about how it will all turn out.

Kurzweil, Ray and Terry Grossman. *Fantastic Voyage: Live Longer to Live Forever*. New York: Rodale, 2004.
Kurzweil is an acclaimed inventor and leading advocate of biotechnology that is intended to free human beings from the limitations of biology. Kurzweil has many honors, including the Dickson Prize, Carnegie Mellon's top science prize, and MIT's

Inventor of the Year award. This book is a practical guide to current medical and alternative medical information that, in Kurzweil's opinion, could allow one to live long enough to enjoy the extreme life extending technologies he believes will appear in the coming decades.

McGraw, John J. *Brain & Belief: An Exploration of the Human Soul*. Del Mar: Aegis, 2004.

McKibben, Bill. *Enough: Staying Human in an Engineered Age*. New York: Owl Books, 2003.
McKibben, famous for issuing an early call to global warming, provides an informed, articulate, passionate argument against the more radical attempts to engineer our future. He sets biotechnology in a meaningful context and argues that we have gone far enough. While his concern is not solely religious, he brings theological maturity and a deep spiritual sensitivity to his position. The book's last sentences, illustrative of his position and passion, are worth quoting: "To call the world enough is not to call it perfect or fair or complete or easy. But enough, just enough. And us in it."

Medina, John. *The Genetic Inferno: Inside the Seven Deadly Sins*. Cambridge: Cambridge University, 2000.

Mitchell, Ben, Edmund Pellegrino, Jean Bethke Elshtain, John Frederic Klner and Scott Rae. *Biotechnology and the Human Good*. Washington, D.C.: Georgetown University. 2007.

Moravec, Hans P. *Robot: Mere Machine to Transcendent Mind*. Oxford: Oxford University, 1999.
A leader in the field, working at the important Stanford Artificial Intelligence Laboratory, Moravec gives a review of robotics, with due attention to the philosophical issues. Here is a quote that gives the flavor of the book: "I see robotics progress as roughly recapitulating the *evolution* of biological minds, producing a succession of machines whose capabilities resemble those of animals with increasingly complex nervous systems… These machines will, at first, be in the physical world what personal computers have been in the world of data—literal-minded followers of prearranged sequences of commands. Gradually they will grow in skill and autonomy—and eventually surpass us in everything." (pp. 24-25)

Moravec, Hans P. *Mind Children: The Future of Robot and Human Intelligence*. Cambridge: Harvard University, 1988.
This is an early book from Moravec, the important artificial intelligence researcher.

Naam, Ramez. *More Than Human.* New York: Broadway Books, 2005, online: www.morethanhuman.org (accessed September 24, 2009)
A respected software expert, Naam provides a favorable survey of biotechnology, with significant attention to the progress of superlongevity science.

National Academy of Engineering. *The Engineer of 2020: Visions of Engineering in the New Century*. Washington: National Academies, 2004.

Newberg, Andrew B., Eugene G. D'Aquili, and Vince Rause. *Why God Won't Go Away: Brain Science and the Biology of Belief*. New York: Ballantine Books, 2001.

Noble, David F. *The Religion of Technology: The Divinity of Man and the Spirit of Invention*. New York: A.A. Knopf, 1998.

Olshansky, S. Jay and Bruce A. Carnes. *The Quest for Immortality: Science at the Frontiers of Aging*. New York: W. W. Norton, 2001.
This book for laypersons gives the state of anti-aging research, with the goal of separating science from pseudoscience. The authors are pioneers in the emerging field of biodemography.

Overall, Christine. *Aging, Death, and Human Longevity: A Philosophical Inquiry*. Berkeley: University of California, 2003.
This is a thoughtful philosophical examination of the arguments for and against increasing the length of human life. Overall contends that extending life is a rational desire. She defends a qualified version of extreme longevity she calls “affirmative prolongevitism,” where increased longevity is viewed within a context of realism with respect to the biological potential of the species, pragmatism with respect to the material limits on health care and other resources, and equity.

Pattison, George. *Thinking About God in an Age of Technology*. New York: Oxford University, 2005.
Pattison uses the philosophy of Heidegger to reflect on God in an age of radical technological advance, especially in biomedicine.

Paul, Gregory S. and Earl Cox. *Beyond Humanity: CyberEvolution and Future Minds*. Rockland: InnerCity Press, 2001.
Two bestselling authors, a paleontologist and an artificial intelligence expert, provide a look at a future when brains are downloaded into receptacles and machines are more efficient than humans.

Peters, Ted. *For the Love of Children: Genetic Technology and the Future of the Family*. Louisville: Westminster/John Knox, 1996.
New reproductive technologies are giving families more choice in family planning. Peters helps navigate this risky new landscape by distinguishing love of children as a guiding principle.

Peters, Ted. *Playing God? Genetic Determinism and Human Freedom*. New York: Routledge, 1997.
Peters argues against genetic determinism, in the process contending for human creativity, moral responsibility, and freedom. The book grew out of a grant to the author

from the National Institutes of Health dealing with the theological and ethical questions raised by the Human Genome Project

Peters, Ted, editor. *Genetics: Issues of Social Justice.* The Pilgrim Library of Ethics. Cleveland: Pilgrim, 1998.
While not focused on extreme longevity *per se*, this earlier collection helped forward the discussion of the legal, social, and ethical reflection on genetics.

Peters, Ted and Gaymon Bennett, eds. *Bridging Science and Religion*. Minneapolis: Fortress, 2003 (2002).
Sponsored by the Center for Theology and the Natural Sciences at Berkeley, the contributors to this volume work to build bridges between science and religion. The religions represented include Buddhism, Christianity, Hinduism, Islam, Judaism, and new trends from Latin America.

Peters, Ted; Michael Welker; and John Russell Robert. *Resurrection: Theological and Scientific Assessments.* Grand Rapids: Eerdmans, 2002.
A team of scientists and theologians examines the Christian notion of *bodily* resurrection. They take the claim of resurrection seriously and try to understand it in light of a culture shaped by science.

Peters, Ted; Muzaffar Iqbal; and Syed Nomanul Haq. *God, Life, and the Cosmos: Christian and Islamic Perspectives*. Center for Theology and Natural Sciences. Burlington: Ashgate, 2002.
Part III of this comparative study is entitled "Life, Consciousness, and Genetics" and addresses various aspects of our increasing ability to intervene in and reshape nature, especially as a result of the genetics revolution. The book does not directly address extreme longevity.

Peters, Ted. *Science, Theology, and Ethics*. Ashgate Science and Religion Series. Burlington: Ashgate, 2003.
Two of the chapters in this book covers designer babies and germline genetic engineering. Peters generally adopts a moderate path forward. For example, he wants to leave the door open on germline genetic engineering, but move cautiously forward with the goal of improving the human genetic lot. Thus far he finds the arguments against germline genetic intervention unconvincing. Although he is not addressing extreme longevity directly, Peters' chapter on "The Physical Body of Immortality" can be useful in thinking through relevant theological issues.

Peters, Ted, and Brent Waters. *Pastoral Genetics: Theology and Care at the Beginning of Life*. Cleveland: Pilgrim, 1996.

Peters, Ted, and Martinez Hewlett. *Can You Believe in God And Evolution?: A Guide for the Perplexed*. Nashville: Abingdon, 2006.

Peters, Ted, and Martinez Hewlett. *Evolution from Creation to New Creation: Conflict, Conversation, and Convergence*. Nashville: Abingdon, 2003.

Peters, Ted. *Anticipating Omega: Science, Faith and Our Ultimate Future*. Gottingen: Vandenhoeck & Ruprecht, 2006.

Peters, Ted, Karen Lebacqz, and Gaymon Bennett. *Sacred Cells? Why Christians Should Support Stem Cell Research*. Lanham: Rowman & Littlefield, 2008.

Peters, Ted. *The Stem Cell Debate (Facets)*. New York: Fortress, 2007.

Peterson, Christopher. *Character Strengths and Virtues: A Handbook and Classification*. New York: Oxford University, 2004.

Pierce, David. *The Hedonistic Imperative.*(1996) http://www.hedweb.com/ (accessed April 14, 2009).

Polkinghorne, J. C. *Belief in God in an Age of Science*. New Haven: Yale University, 1999.

Post, Stephen G. and Robert H. Binstock. *The Fountain of Youth: Cultural, Scientific, and Ethical Perspectives on a Biomedical Goal*. New York: Oxford University, 2004.
This book provides scientific and ethical/social articles on aging. It includes an article on the Christian view by Diogenes Allen and an excellent article by Carol G. Zaleski, "In Defense of Immortality." A Jewish perspective is represented by Neil Gillman, "A Jewish Theology of Death and the Afterlife."

Quayle, Stephen. *Genetic Armageddon: Today's Technology - Tomorrows Monsters*. (2003) http://www.stevequayle.com/books/Genetic.Arm.intro.html (accessed April 14, 2009).

Rees, Martin J. *Our Final Century: A Scientist's Warning: How Terror, Error, and Environmental Disaster Threaten Humankind's Future in This Century - On Earth and Beyond*. London: Arrow, 2004.

Rifkin, Jeremy. *The Biotech Century*. New York: Putnam, 1998.
Rifkin is an influential and ardent critic of much of biotechnology science.

Rubenstein, R. and M. Benecke. *The Dream of Eternal Life: Biomedicine, Aging, and Immortality*. New York: Columbia University, 2002.
The authors survey many of the issues and controversies in the extreme longevity movement.

Satinover, Jeffrey. *The Quantum Brain: The Search for Freedom and the Next Generation of Man.* New York: John Wiley & Sons, 2001.
This respected Jungian psychiatrist shows how the combined technologies of artificial

intelligence, neural networks, and self-governing systems are transforming our understanding of how the brain works and opening up possibilities for synthetic brains.

Seligman, Martin E. P. *Authentic Happiness: Using the New Positive Psychology to Realize Your Potential for Lasting Fulfillment*. New York: Free Press, 2004.

Shostak, Stanley. *Becoming Immortal: Combining Cloning and Stem-Cell Therapy*. New York: State University, 2002.
While this book is written for the layperson, the biologist author gives quite detailed descriptions of cloning and stem-cell research in an attempt to explain the science behind a possible genetic solution to death.

Silver, Lee. *Remaking Eden: How Genetic Engineering and Cloning Will Transform the American Family*. New York: Avon, 1999 (1997).
Silver, a Princeton University biologist, provides the general reader with the scientific basis and the societal implications of engineering humanity. The scientific explanations (e.g., the structure and workings of cells, fertilization, cloning) are both detailed and clear. This is one of the best introductions for the non-specialist to the science and ethics of theses issues.

Smith, Huston. *Cleansing the Doors of Perception: The Religious Significance of Entheogenic Plants and Chemicals*. New York: Jeremy P. Tarcher/Putnam, 2000.

Stock, Gregory. *Metaman: The Merging of Humans and Machines into a Global Superorganism*. New York: Simon & Schuster, 1993.
In this early book, Stock, a leading advocate of biotechnological progress, envisions humanity as a super, global organism—metaman—initiating a new phase of evolution, bringing with it solutions to many problems.

Stock, Gregory, and J. Campbell, eds. *Engineering the Human Germline: An Exploration of the Science and Ethics of Altering the Genes We Pass to Our Children*. New York: Oxford University, 2000.
Written for the non-specialist and by leaders in the field, this excellent collection accesses the scientific state of the research and the ethical and public policy implications of human germline engineering. As stated in the introduction by the editors, and made clear by the various articles, the question is not whether germline genetic engineering will become feasible, but when and how. Stock, director of the Program on Medicine, Technology, and Society at the University of Los Angeles at California's School of Medicine, is a leading proponent of proceeding, thoughtfully and safely, with this research.

Stock, Gregory. *Redesigning Humans: Choosing Our Genes, Changing Our Future*. Boston: Houghton Mifflin, 2003 (2002, *Redesigning Humans: Our Inevitable Genetic Future*).
The director of the Program on Medicine, Technology, and Society at the School of Public Health of the University of California at Los Angeles and a key figure in this

discourse, Stock argues that biotechnology developments, especially genetic germline engineering that alters the future of the species, offer exciting choices we should embrace. He admits there will be challenges and pitfalls, but insists the technologies are inevitable, and so we should utilize them thoughtfully for the betterment of humanity. Consistent with his attempt to sway public opinion in favor of radical evolution, Stock suggests the term “germinal choice technology.”

Stross, Charles. *Accelerando*. New York: Ace Books, 2005.

Tandy, Charles, and Nick Bostrom. *Doctor Tandy's First Guide to Life Extension and Transhumanity*. Ed. Charles Tandy. New York: Universal Publishers, 2001.

Tipler, Frank J. *The Physics of Immortality: Modern Cosmology, God, and the Resurrection of the Dead*. New York: Doubleday, 1995.

Teilhard de Chardin, Pierre. *The Phenomenon of Man*. New York: Harper, 1959.

Tokar, Brian, ed. *Redesigning Life? The Worldwide Challenge to Genetic Engineering.* London: Zed Books, 2001.
Twenty-six critics discuss the science, ethics, and social implications of genetic engineering, with attention given to the redesigning of plants, animals, and human beings. The volume gives attention to the corporate role in genetic engineering and the growing worldwide resistance, especially to genetically modified food.

Ward, Peter and Donald Brownlee. *Rare Earth: Why Complex Life is Uncommon in the Universe*. New York: Springer, 2000.

Waters, Brent. *From Human to Posthuman: Christian Theology and Technology in a Postmodern World*. *Ashgate Science and Religion Series* (series eds. Roger Trigg and J. Wentzel van Huyssteen). Burlington: Ashgate, 2006.
Waters reflects on Christian theological ethics in light of emerging technology, including biotechnology, artificial intelligence, and robotics. The author views advancing technology as the faith of the postmodern world, but an ambivalent faith that includes both hope and fear.

Waters, Brent and Ronald Cole-Turner, eds. *God and the Embryo: Religious Voices on Stem Cells and Cloning*. Washington: Georgetown University, 2003.
The book provides a variety of religious perspectives on cloning and stem cell research and includes position statements from religious entities, including the Roman Catholic Church, Orthodox Church in America, United Methodist Church, Southern Baptist Convention, United Church of Christ, Presbyterian Church (USA), Union of Orthodox Jewish Congregations of America, and Rabbinical Council of America. A statement from the President’s Council on Bioethics concludes the book.

West, Michael D. *The Immortal Cell: One Scientist’s Quest to Solve the Mystery of Human Aging*. New York: Doubleday, 2003.

West, a major player in the scientific quest to defeat death, places his personal and religious (he was raised a fundamentalist Christian) journey in the context of the scientific story. We see displayed here the intensity that drives some scientists in this quest. In West's case, we follow his story through graduate school, the founding of the important biotechnology research company Geron, his work on telomerase (the "immortality gene"), and the embryonic stem cell controversy.

ARTICLES

Abrams, Jerold. "Pragmatism, Artificial Intelligence, and Posthuman Bioethics Shusterman, Rorty, Foucault." *Human Studies* 27 (3) (2004): 241-258.

Cryonics: A Publication of the Alcor Life Extension Foundation Scottsdale: Alcor Life Extension Foundation, 2002.

Allman John, Atiya Hakeem, Joseph Erwin, Esther Nimchinsky, and Patrick Hof. "The Anterior Cingulate Cortex: The Evolution of an Interface Between Emotion and Cognition." *Annals of the New York Academy of Sciences* 935 (2001): 107-17.

Babinski, Edward T. "C.S. Lewis' 'Argument From Reason' vs. Christians Who Reject Mind-Body Dualism and Accept the Possibility of Artificial Intelligence, Even 'Born Again' Machines!" http://www.edwardtbabinski.us/religion/cs_lewis_dualism.html (accessed April 13, 2009).

Bainbridge, William Sims. "The Transhuman Heresy." *Journal of Evolution and Technology* 14/2 (2005): 91-100.

Barna, George. "Americans Describe Their Views about Life after Death." (10/21/03) http://www.barna.org/ (accessed April 13, 2009).

Barna, George. "The God Gap? The Faith of Republicans and Democrats." (3/5/07) http://www.barna.org/ (accessed April 13, 2009).

Bauwens, Michel. "Deus ex Machina vs. Electric Gaia." *CMC Magazine* (4/97) http://www.december.com/cmc/mag/1997/apr/last.html. (accessed April 13, 2009).

Bostrom, Nick. "Are You Living in a Computer Simulation?" *Philosophical Quarterly* 53, (211) (2003): 243-255.

Bostrom, Nick. "In Defence of Human Dignity." *Bioethics* 19/3 (2005): 202-214.

Bostrom, Nick. "Transhumanist Values." (2002) http://www.nickbostrom.com/ethics/values.html. (accessed April 13, 2009).

Bostrom, Nick. "What is a Singleton?" *Linguistic and Philosophical Investigations* (3/05) http://www.nickbostrom.com/fut/singleton.html. (accessed April 13, 2009).

Bostrom, Nick. "Existential Risks: Analyzing Human Extinction Scenarios and Related Hazards." *Journal of Evolution and Technology* 9. (3/02) http://www.jetpress.org/volume9/risks.html. (accessed April 13, 2009).

Boyer, Pascal. “Religious Thought and Behavior as By-Products of Brain Function.” *Trends in Cognitive Sciences* 7/3 (2003): 119-124.

Boyer, Pascal.“Why is Religion Natural?” *Skeptical Inquirer* 28/2 (2004): 25-31.

Brooke, John Hedley. “Visions of Perfectibility.” *Journal of Evolution and Technology* 14/2 (8/05) 1-12.

Broyde, Michael. " Cloning People and Jewish Law: A Preliminary Analysis." *Jewish Law* (2003) http://www.jlaw.com/Articles/cloning.html. (accessed April 13, 2009).

Cirkovic, Milan M. "On the Importance of SETI for Transhumanism." *Journal of Evolution and Technology* 13. (10/03) http://jetpress.org/volume13/cirkovic.html (accessed April 14, 2009).

Cole-Turner, Ronald. “More than Human: Religion, Bioethics, and the Transhuman Prospect,” prepared for *Continuity Change: Perspectives on Science and Religion* (06/3-7/2006). Philadelphia, PA.

Collins, Philip D. 2006. "Luciferianism: The Religion of Apotheosis." (1/10/06) http://www.conspiracyarchive.com/Commentary/Luciferianism.htm (accessed April 14, 2009).

Coward, H. “Hindu Bioethics for the Twenty-First Century.” *Journal of the American Medical Association* 291 (2004): 2759-2760.

Couzin, Jennifer. “How Much Can Human Life Span Be Extended?” *Science* 309 (2005) 83.

DeLashmutt, Michael. "A Better Life Through Information Technology? The Techno-Theological Eschatology of Posthuman Speculative Science.” *Zygon.* 41/2 (2006): 267-288.

Daly, Todd. "Life-Extension in Transhumanist and Christian perspectives: Consonance and Conflict." *Journal of Evolution and Technology* 14/2 (8/05), 57-75.

Davis, John Jefferson. “Artificial Intelligence and the Christian Understanding of Personhood” in *The Frontiers of Science & Faith: Examining Questions from the Big Bang to the End of the Universe*. Downers Grove: InterVarsity, 2002.

Dorff, Elliot N. “Embryonic Stem Cell Research: The Jewish Perspective.” *United Synagogue Review* (Spring 2002)

Eisenberg, Daniel. "The Ethics of Cloning." Jewish Virtual Library. (2007) http://www.jewishvirtuallibrary.org/jsource/Judaism/clone.html (accessed September 24, 2009)

Foerst, Anne. "Cog, a Humanoid Robot, and the Question of the Image of God." *Zygon: Journal for Religion and Science*,33 (1998): 91-111.

Foerst, Anne. "Robot: Child of God," in *God for the 21st Century,* (1998) Russell Stannard, ed. Templeton Foundation Press. http://www.kurzweilai.net/articles/art0180.html (accessed April 14, 2009).

Glenn, Joshua. "The Theological Robot." *Boston Globe* (2/6/05) http://www.boston.com/news/globe/ideas/articles/2005/02/06/the_theological_robot/ (accessed April 14, 2009).

Graham, Elaine. "Nietzsche Gets a Modem; Transhumanism and the Technological Sublime." *Literature and Theology* 16/1 (2002) 65-80.

Grosso, Michael. 1997. "Technology as a Psychic Phenomenon." *CMC Magazine* (4/97) http://www.december.com/cmc/mag/1997/apr/grosso.html (accessed April 14, 2009).

"H+ and Religion" 5/8/2007. Institute for Ethics and Emerging Technologies 34. (2007).

"H+ and Religion" 5/8/2007. Institute for Ethics and Emerging Technologies 35. (2007).

"H+ and Religion" 5/8/2007.Institute for Ethics and Emerging Technologies 36. (2007)..

"H+ and Religion" 5/8/2007. Institute for Ethics and Emerging Technologies 37. (2007).

"H+ and Religion" 5/8/2007. Institute for Ethics and Emerging Technologies 38. (2007).

"H+ and Religion" 5/8/2007. Institute for Ethics and Emerging Technologies 39. (2007).

Hanson, Robin. "The Great Filter - Are We Almost Past It?" (1998) http://hanson.gmu.edu/greatfilter.html (accessed April 14, 2009).

Hart, David. "The Anti-Theology of the Body." *New Atlantis* 9 (2005): 65-73.

Hick, John. "An Irenaean Theodicy," pp. 39-52. *In Encountering Evil.* Atlanta: John Knox, 1981.

Holt, Jim. " How Will the Universe End?" *Slate* (3/3/04) http://www.slate.com/id/2096491/entry/2096506/ (accessed April 14, 2009).

Hook, Christopher. "The Techno Sapiens Are Coming." *Christianity Today*. (1/1/04) http://www.ctlibrary.com/ct/2004/january/1.36.html (accessed April 14, 2009).

Hopkins, Patrick D. "Protecting God from Science and Technology: How Religious Criticisms of Biotechnologies Backfire." *Zygon: A Journal of Religion and Science* 37/2 (2002): 317-344.

Hopkins, Patrick D. "Barbie Bodies, Bacon Bodies, Plato Bodies, Nietzsche Bodies: Differing Visions of How Biotechnology Should be Used to Transform Human Bodies," delivered at "The Adaptable Human Body: Transhumanism and Bioethics in the 21st Century", Conference Presentation, Yale University, New Haven. (6/17-19/03)

Hopkins, Patrick D. "Transcending the Animal: How Transhumanism and Religion Are and Are Not Alike." *Journal of Evolution and Technology* 14/2 (8/13-28/05) http://jetpress.org/volume14/hopkins.html (accessed April 14, 2009).

Hughes, James. "The Struggle for a Smarter World." *Futures Guildford* 39/8 (2007): 942-954.

Hughes, James. "Beginnings and Endings: The Buddhist Mythos of the Arising and Passing Away of the World," in *Buddhist Perceptions of Desirable Societies in the Future: Papers Prepared for the United Nations (*1993).

Hughes, James. "The Illusiveness Of Immortality," *Death And Anti-Death* 3 (2006), *Fifty Years After Einstein, One Hundred Fifty Years After Kierkegaard*, Charles Tandy, Editor. http://Institute for Ethics and Emerging Technologies.org/index.php/INSTITUTE FOR ETHICS AND EMERGING TECHNOLOGIES/more/430/ (accessed April 14, 2009).

Hughes, James. "Transhumanism and Unitarian Universalism: Beginning the Dialogue. A Sermon." (8/14/2005) Unitarian Universalist Society, East Manchester. http://changesurfer.com/Bud/UUTrans.html (accessed April 14, 2009).

Hughes, James. "Beginnings and Endings: The Buddhist Mythos of the Arising and Passing Away of the World," In *Buddhist Perceptions of Desirable Societies in the Future: Papers prepared for the United Nations University*, eds. Sulak Sivaraksa et al. IRCD: Bangkok 1993. http://www.changesurfer.com/Bud/Begin.html (accessed April 15, 2009).

International Theological Commission. *Human Persons Created in the Image of God*. La Civiltà Cattolica, IV, 254-286. Rome, 2004 http://www.vatican.va/roman_curia/congregations/cfaith/cti_documents/rc_con_cfaith_doc_20040723_communion-stewardship_en.html (accessed April 14, 2009).

Jang, Kerry, Robert McCrae, Alois Angleitner, Rainer Riemann, and John Livesley. "Heritability of Facet-Level Traits in a Cross-Cultural Twin Sample: Support for a Hierarchical Model of Personality." *Journal of Personality and Social Psychology* 74/6 (1998): 1556-1565.

Kaku, Michio. "Could a Hole in Space Save Man from Extinction?" *Daily Telegraph* 5/1/05. http://www.telegraph.co.uk/connected/main.jhtml?xml=/connected/2005/01/05/ecrspace05.xml&sSheet=/connected/2005/01/05/ixconnrite.html (accessed April 14, 2009).

Kass, Leon R. "L'Chaim and Its Limits: Why Not Immortality?" *First Things: A Journal of Religion and Public Life* 113 (2001) 17-24.

Kass, Leon. "Preventing a Brave New World." *The New Republic* 5/17/01.

Krueger, Oliver. "Gnosis in Cyberspace? Body, Mind and Progress in Posthumanism," *Journal of Evolution and Technology* 14/2 (8/05): 77-89.

LaTorra, Michael. "Trans-Spirit: Religion, Spirituality and Transhumanism." *Journal of Evolution and Technology* 14/2 (8/05): 41-55. http://jetpress.org/volume14/latorra.html (accessed April 24, 2009).

Ledford, James McLean. *Prepare for HyperEvolution with Christian Transhumanism* (2005) http://www.hyper-evolution.com/ (accessed April 14, 2009).

Macer, Darryl. “UNESCO Bioethics Committee and International Regulation of Gene Therapy.” *Gene Therapy Newsletter* 4-5 (1994).

Macer, Darryl. "Universal Bioethics and the Human Germ-line.” *Politics and the Life Sciences: Journal of the Association for Politics and the Life Sciences* 13/2 (1994): 243-245.

Macklin, Ruth. "The New Conservatives in Bioethics: Who Are They and What Do They Seek?" *The Hastings Center Report* 36/1(2006): 34-43.

Macklin, Ruth. "Dignity is a Useless Concept.” *British Medical Journal (Clinical Research Ed.)* 327/7429 (2003): 1419-1420.

Mercer, Calvin. “Cryonics and Religion: Friend or Foe?” *Cryonics* 29/1 (2008): 10-21

Miller, Geoffrey. "The Asian Future of Evolutionary Psychology." *Evolutionary Psychology* 4 (2006): 107-119.

Mormon Transhumanist Association. *Parallels and Complements between Mormonism and Transhumanism*.(2006) http://transfigurism.org/community/files/1170/download.aspx (accessed April 14, 2009).

Oberman, Lindsay, Edward Hubbard, Joseph McCleery, Eric Altschuler, Vilayanur Ramachandran, and Jaime Pineda. "EEG Evidence for Mirror Neuron Dysfunction in Autism Spectrum Disorders.” *Brain Research. Cognitive Brain Research* 24/2 (2005): 190-198.

Palmgren, Henrik. "Cyborg Superman, Transhumanism and the Nephilim." *Red Ice Creations*, 02/23. (2006) http://www.redicecreations.com/specialreports/2006/02feb/superman.html (accessed April 14, 2009).

Pauls, David. "Transhumanism: 2000 Years in the Making." (2005) http://www.thecbc.org/redesigned/research_display.php?id=189 (accessed April 14, 2009).

Beyond Therapy: Biotechnology and the Pursuit of Happiness Washington, DC: President's Council on Bioethics. (2003) http://www.bioethics.gov/reports/beyondtherapy/index.html. (accessed April 14, 2009).

Persinger, Michael. "The Neuropsychiatry of Paranormal Experiences." *Journal of Neuropsychiatry and Clinical Neuroscience.* 13 (2001): 515-524. http://neuro.psychiatryonline.org/cgi/content/full/13/4/515 (accessed April 14, 2009).

"The Quest to Beat Aging" (issue title). *Scientific American* 11/2 (Summer 2000).

Schneider, Robert. "Evolution and the Image of God." (2007) http://community.berea.edu/scienceandfaith/essay06.asp (accessed April 14, 2009).

Shields, David. "The Thing About Life Is That One Day You'll Be Dead." *The New York Review of Books* 55/1 (2008): 24.

Sinclair, David A. and Lenny Guarente. "Unlocking the Secrets of Longevity Genes. *Scientific American* 294/3 (3/06): 48-57.

Singh, T.D. "Vedantic Perspectives on Bioethical Questions," prepared for "Continuity + Change: Perspectives on Science and Religion" (6/3-7/06) http://www.metanexus.net/conferences/pdf/conference2006/Singh.pdf (accessed April 15, 2009).

Smart, John. "Brief History of Intellectual Discussion of Accelerating Change" (2005) http://www.accelerationwatch.com/history_brief.html. (accessed April 14, 2009).

Tongen, Anthony. "Will Biological Computers Enable Artificially Intelligent Machines to Become Persons?" Center for Bioethics and Human Dignity (11/7/03) http://www.cbhd.org/resources/biotech/tongen_2003-11-07.htm (accessed April 15, 2009).

Vinge, Vernor. "Technological Singularity," presented at VISION-21 Symposium, sponsored by NASA Lewis Research Center and the Ohio Aerospace Institute (3/30-31/93) http://www-rohan.sdsu.edu/faculty/vinge/misc/singularity.html (accessed April 15, 2009).

Walker, Mark. "Prolegomena to Any Future Philosophy." *The Journal of Evolution and Technology* 10 (2002) http://www.jetpress.org/volume10/prolegomena.html. (accessed April 14, 2009).

Walker, Mark and Heidi Campbell. "Introduction to the Special Issue on Transhumanism and Religion." *Journal of Evolution and Technology* 14/2 (8/05): i-xiv.

Wikipedia. "Transhumanism" (2007) http://en.wikipedia.org/wiki/Transhumanis. (accessed April 15, 2009).

OTHER ELECTRONIC AND INTERNET RESOURCES

A number of organizations, websites, online forums, programs, and publications have sprung up to address the issue of and interest in radical life extension. Admittedly, there are organizations and websites that promote pseudoscience, questionable medical modalities, and adventurous marketing. Some of the more reputable organizations, forums, and websites are listed below. Many of them have newsletters and subscriber lists.

Acceleration Studies Foundation (www.accelerating.org) (accessed September 24, 2009)

Alcor Life Extension Foundation (www.alcor.org) (accessed September 24, 2009)

American Academy of Anti-Aging Medicine (A4M) (www.worldhealth.net) (accessed September 24, 2009)

American Society for Bioethics and Humanities (http://www.asbh.org/) accessed September 24, 2009)

Extropy Institute (http://www.extropy.org) (accessed September 24, 2009)

Foresight Institute (http://www.foresight.org) (accessed September 24, 2009)

Future of Humanity Institute (www.fhi.ox.ac.uk/) (accessed September 24, 2009)

Immortality Institute (http://www.imminst.org) (accessed September 24, 2009)

Institute for Global Futures (http://www.futureguru.com) (accessed September 24, 2009)

The Lifeboat Foundation (http://www.lifeboat.com/ex/main) (accessed September 24, 2009)

Life Extension Foundation (http://www.lef.org) (accessed September 24, 2009)

Longevity Meme (http://www.longevitymeme.org) (accessed September 24, 2009)

Maximum Life Foundation (http://www.maxlife.org) (accessed September 24, 2009)

Methuselah Foundation (http://www.methuselahfoundation.org) (accessed September 24, 2009)

SENS (www.sens.org) (accessed October 1, 2009)

Society for Venturism (http://www.quantium.plus.com/venturist) (accessed September 24, 2009)

Templeton Lecture Series (http://www.metanexus.net/lectures/winners/asu.asp) (accessed September 24, 2009)

World Transhumanist Organization (http://www.transhumanism.org/index.php/WTA/index/) (accessed September 24, 2009)

JOURNALS

A number of scholarly journals address issues in biotechnology, such as the ethics and social implications of extreme longevity.

The American Journal of Bioethics
Featuring a unique target article and peer commentary format, this journal inspires comprehensive and rigorous debate across the diverse disciplines of bioethics.

The Cambridge Quarterly of Healthcare Ethics
This journal is designed to serve as an international forum for addressing the increasingly complex challenges of biology, medicine, and healthcare. As a journal committed to expanding the community of bioethicists worldwide, it welcomes well argued papers from a variety of methodological and normative viewpoints.

The Hastings Center Report
The six issues a year from this well-regarded center provides respected, thoughtful, balanced inquiry and insight into bioethical issues

Journal of Clinical Ethics
With more than 70 percent of the articles written by physicians, the publication targets physicians, nurses, attorneys, clergy, ethicists, and others whose decisions directly affect patients.

Journal of Medicine and Philosophy
For three decades this journal has served as a forum for the discussion of issues in ethics and the philosophy of medicine. It draws contributors from across the globe, reflecting the diversity of scholarly approaches and commitments in the Americas, Europe, and Asia. Issues in this bimonthly journal have ranged from health care reform and the role of the family in consent to treatment to the definition of health and disease.

The Kennedy Institute of Ethics Journal
The journal provides a scholarly forum featuring international and domestic views, analysis, and insight on the important developments in bioethics.

Medical Humanities Review
This journal provides articles and book reviews in the evolving field of the medical humanities.

Perspectives in Biology and Medicine
Founded in 1957, this journal presents articles of current interest in medicine and biology in a context with humanistic, social, and scientific concerns. Perspectives cover a wide range of biomedical topics such as neurobiology, biomedical ethics and history, genetics and evolution, and ecology.

Rejuvenation Research
Aubrey de Grey, a contributor to the proposed book, is editor of this authoritative peer-reviewed journal that publishes leading work on the implementation of rejuvenation therapies in the laboratory and eventually in the clinic, as well as basic research relevant to the further elucidation of what such therapies must do at the molecular and cellular level in order to be truly effective. Sociopolitical and ethical issues relating to substantial extension of healthy human life expectancy are also covered. The journal is a relaunch of the Journal of Anti-Aging Medicine.

Theoretical Medicine and Bioethics
This journal provides an international forum for interdisciplinary studies in the philosophy, methodology, and ethics of medical practice and research. It features original philosophical investigations, theoretical reflections upon empirical studies, invited articles, special issues, and book reviews.