

Can Science and Religion Better Save Nature Together?

Author: NORGAARD, RICHARD B.

Source: BioScience, 52(9) : 842-846

Published By: American Institute of Biological Sciences

URL: [https://doi.org/10.1641/0006-3568\(2002\)052\[0842:CSARBS\]2.0.CO;2](https://doi.org/10.1641/0006-3568(2002)052[0842:CSARBS]2.0.CO;2)

BioOne Complete (complete.BioOne.org) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Complete content is strictly limited to personal, educational, and non - commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

Can Science and Religion Better Save Nature Together?

RICHARD B. NORGAARD

We care because the broad events that had to happen, happened to happen in a certain particular way. Something almost unspeakably holy—I don't know how else to say this—underlies our discovery and confirmation of the actual details that made our world and also, in realms of contingency, assured the minutiae of its construction in the manner we know, and not in any one of a trillion other ways, nearly all of which would not have included the evolution of a scribe to record the beauty, the cruelty, the fascination, and the mystery.

—Stephen Jay Gould

The Structure of Evolutionary Theory

Many scientists privately hold religious beliefs. Others have had transformative spiritual experiences that lead them beyond science. Still others, like Stephen Jay Gould (1941–2002), link the awe of discovering the improbability of creation as it actually unfolded to “something almost unspeakably holy.” Some theologians have been trained in and have made contributions to science. Many theologians wrestle with how God’s creation is both being transformed by and is coevolving with science and technology. Yet publicly, science and religion have fairly successfully distanced themselves from each other since Galileo and the Inquisition.

Today, however, fundamentalist Christians, insisting that “intelligent design” be taught on a par with evolutionary theory, have inserted their views into political discourse and, in some cases, policy. Religious groups are asserting moral arguments to limit specific types of biological research. Religious opposition to family planning has become politically more potent. Furthermore, for the past quarter of a century, fundamentalist beliefs, across religions and throughout the world, have been gaining over more liberal religious beliefs that are open to the findings of science. In an atmosphere of rising tensions on key fronts between religion and science, especially biology, is there any hope of joining forces to save nature?

Implausible hope is probably as distinguishing a human characteristic as our presumably great intelligence, the complexity of our technology, and our ability to consciously, so-

cially reorganize to meet new challenges. So out of hope—though certainly in some cases out of desperation—a significant number of theologians and scientists are deliberately joining forces, linking theological and scientific arguments to save Earth. *The Good in Nature and Humanity: Connecting Science, Religion, and Spirituality with the Natural World*, edited by Stephen Kellert and Timothy Farnham (2002), is an excellent collection of essays on the confluence of faith-based and science-based arguments in defense of nature. The arguments elaborated in these essays evolved over several centuries.

In the century following Galileo and the Inquisition, an awkward division was initiated between science and Christianity, wherein each stayed on separate paths. One told an objective “is” story, the other an emotive “ought,” and each tried to ignore the other, even as their is’s and ought’s intertwined. The 18th century philosopher and historian of the scientific revolution, the Marquis of Condorcet (1743–1794), predicted that this separation would be temporary, arguing that religion naturally progressed from the mystical animism of pagans to more sophisticated grand designer theories and eventually to the complex science-based cosmology, from which a new “ought” story would somehow surely flow. Condorcet’s argument, however, entailed an ought–is fallacy—namely, he thought that how things ought to be could be deduced from a new, fuller awareness of how things are. August Comte (1798–1857) sought to resolve this error in the mid-19th century by arguing that the collective social organization and individual behavioral norms that would best promote progress could be deduced using the methods of science.

Richard B. Norgaard is professor of energy and resources and of agricultural and resource economics at the University of California at Berkeley. He participated in the Joint Appeal by Religion and Science for the Environment, served as president (1998–2002) of the International Society for Ecological Economics, and currently serves on the AIBS Board of Directors. © 2002 American Institute of Biological Sciences.

Though this solution ignores what “ought” to constitute progress, Comte argued that wholeness between the realms of religion and science, of “ought” and “is”, was after all just a matter of sufficient scientific progress. For many modern people, such arguments rooted in Western culture help fill what 20th century philosopher Jean-Paul Sartre (1905–1980) labeled the “God-shaped hole in the modern consciousness.”

History, however, did not unfold along the lines presumed by Condorcet and Comte. Science moved smartly ahead in the centuries after Galileo; Christianity changed more slowly. During this past century, evolutionary biologists and ecologists developed an intricate, awe-inspiring explanation of an ongoing development and interplay of life. Christianity, meanwhile, still preached the static six-day story, with awe directed largely to the creation’s Grand Designer. Many scientists still hold to Condorcet and Comte’s presumptions and await further progressive enlightenment (mostly of others). The divide between religion and progressive scientific beliefs is wide, and the general history recounted above would seem to inspire little hope for bridging the gap. Yet we should take care not to fall into the fallacy of emphasizing the mean rather than the variance. There is more than sufficient variation in thought among religious and scientific people for bridges to be built.

One of the most important bridges was made by Pierre Teilhard de Chardin (1881–1955), a Jesuit priest, a paleontologist who participated in the discovery of Peking man, and a scholar who pondered the human implications of evolution. He pleaded to his religious superiors that Catholicism be open and responsive to the evolutionary story. To Teilhard de Chardin’s thinking, the “ought” messages of Christianity are, by and large, independent of the sparse particulars of the creation story. Furthermore, the marvels of evolution and the questions they raise not only provide more than ample space for God, they make that space much more interesting, alive, and enduring. His superiors not only vehemently disagreed with his ideas but forbade him from publishing them—*The Phenomenon of Man* was published only after Teilhard de Chardin’s death. In this visionary work, he outlined a hierarchical form of evolution that included the noosphere, the living, evolving knowledge of our moral and intellectual pursuits. Though Teilhard de Chardin’s evolutionary arguments were troublesomely conflated with beliefs in human progress that trace back to Condorcet and Comte, his ideas foreshadowed much of the current interest in genetic and cultural co-evolution (see Wilson 1998, chap. 7, for a participant’s review and interpretation of this literature).

Loren Eiseley (1907–1977), also a paleontologist, wrote *The Immense Journey* in 1959, the first of an unusual series of books filled with essays—and eventually poetry—that were personal, yet beautifully transcendent, evolutionary reflections on humanity, nature, and time. Eiseley exudes wonder in every paragraph, attaching science to the big questions, the

known and unknown. He defies C. P. Snow’s famous essay (1959, chap. 1) on the cultural divide between the humanities and the sciences, connecting them with stunning prose.

As the new environmental movement was taking off, Lynn White Jr. (1967) argued that Christian beliefs were critical to why science and technology turned against nature. “The Historical Roots of Our Environmental Crisis,” clearly directed at scientists, was published in *Science*. White argued that Christianity inherited from Judaism the Genesis story of the creation, wherein God, portrayed as an omniscient, cold, central planner, established all of nature for the benefit of people. Furthermore, people, created in God’s image, share in His separation from, as well as dominion over, all of creation. White emphasized how early scientists appealed to Genesis, promoting science as a way of acquiring God’s plan so as to better equip people to control nature and exercise dominion to their due benefit. We still hear similar mixtures of religious and utilitarian arguments today. According to White, the opening story of the Bible set modern Western people, through science and technology, on a collision course with nature.

In his closing paragraph, he writes, “Both our present science and our present technology are so tinctured with orthodox Christian arrogance toward nature that no solution to the ecological crisis can be expected

from them alone.” White’s article linking science, religion, and environmental degradation continues to be cited in historical overviews of our environmental predicament, providing a key argument for the secular development of a new environmental ethic.

The theological community, however, did not fully accept White’s argument. This, along with rising popular concern for the environment, spurred many religious scholars into action. Most accepted that Christianity shared in the burden. Indeed, Ian Barbour, professor emeritus of physics and religion at Carleton College, argues that what White interpreted entirely negatively were exactly the conditions that spurred the development of science in Europe rather than elsewhere (Barbour 2000). If Christianity is to share the blame, than it should also share the credit. Most theological philosophers also painted a much richer picture of what Christianity has to say about nature, both to correct White’s excessive reliance on Genesis to the exclusion of the rest of the Bible and Christian history and to lay new ground for an ecologically more responsible Christianity in the future (see Nash 1991, chap. 3, for a good summary). Meanwhile, activist theologians organized the churches to play a more constructive role in teaching responsibility toward nature.

By the early 1990s, there was a substantial ecumenical literature devoted to religion and nature. For example, the International Union for Conservation of Nature and Natural Resources sponsored an ethics working group, led by J. Ronald Engel and Joan Gibb Engel of Meadville/Lombard Theological School, who put together *Ethics of Environment and*

During this past century, evolutionary biologists and ecologists developed an intricate, awe-inspiring explanation of an ongoing development and interplay of life.

Development: Global Challenges and International Response (1990). James Nash, executive director of the Church's Center for Theology and Public Policy, wrote *Loving Nature: Ecological Integrity and Christian Responsibility* (1991). The major interfaith dialogue among religious and spiritual leaders who gathered at Middlebury College in 1990 resulted in *Spirit and Nature: Why the Environment is a Religious Issue* (Rockefeller and Elder 1992). Feminist writer Charlene Spretnak (1986) and philosopher Max Oelschlaeger (1994) have also made important contributions to this body of literature on religious concern.

Berry argues that every culture has a "life story" that explains the creation of the heavens and the earth, a narrative that positions the mountains, streams, and great oceans, an account of relations between plants and animals, between people, and with the gods. The problem is that modern science has replaced the "natural" part of that life story for Westerners...with a compelling alternative narrative.

Among the most important modern treatments of the connections between religion and nature are those by Thomas Berry, a Passionist priest and historian of the religions of the world. Inspired by Teilhard de Chardin, Berry writes and speaks vividly and intensely for an evolutionary and ecological Christian cosmology. The Sierra Club published Berry's *The Dream of the Earth* in 1988; *The Great Work: Our Way into the Future* was published more recently (1999). Berry argues that every culture has a "life story" that explains the creation of the heavens and the earth, a narrative that positions the mountains, streams, and great oceans, an account of relations between plants and animals, between people, and with the gods. The problem is that modern science has replaced the "natural" part of that life story for Westerners—indeed, replaced all the stories of all the people of the globe—with a compelling alternative narrative. But it is an incomplete alternative that deliberately avoids dealing with how people fit into the picture, except as an unnatural force. Nor does the modern science story address how people should relate to each other directly, through nature, and over time. Of course, there is the economic story of how we relate to each other and nature, but the economic story is narrowly utilitarian with respect to ethical relations. Like an irrationally exuberant investor, it looks myopically at the future, and it is hopelessly simplistic relative to the rich picture science paints of the natural world (Berry 1987). The deficiencies in the economic story alone unite many theologians and environmental scientists. Thus, Berry argues, we need a new story, a whole story, an integrated story that makes sense of the world, who we are, and why we are here. Thomas Berry inspires many of today's re-

ligious and spiritual organizations dedicated to active ecological concern (see the box accompanying this article).

In May 1992, 150 American theologians and scientists—heads of churches, ecumenical leaders, and top scientists—came to Washington, DC, to deliberate over and fine-tune a "Joint Appeal by Religion and Science for the Environment." The rationale underlying the appeal reads thus:

We believe that science and religion, working together, have an essential contribution to make toward any significant mitigation and resolution of the world environmental crisis. What good are the most fervent moral imperatives if we do not understand the dangers and how to avoid them? What good is all the data in the world without a steadfast moral compass? Many of the consequences of our present assault on the environment, even if halted today, will take decades and centuries to play themselves out. How will our children and grandchildren judge our stewardship of the Earth? What will they think of us? Do we not have a solemn obligation to leave them a better world and to ensure the integrity of nature itself? Insofar as our peril arises from a neglect of moral values, human pride, arrogance, inattention, greed, improvidence, and a penchant for the short-term over the long, religion has an essential role to play. Insofar as our peril arises from our ignorance of the intricate interconnectedness of nature, science has an essential role to play.

(For the full statement, see www.webofcreation.org/education/policystatements/joint.htm.)

E. O. Wilson (1998) provides another avenue of thought about ethics and science in *Consilience*. He argues in chapter 11, "Ethics and Religion," that moral sentiments, including our attachment to nature, are deeply interconnected with biology, from our neural and endocrine responses to our genes. To be sure, culture plays an important role and has coevolved with our genetic makeup. Much of our cultural inheritance, however, is too recent to be genetically encoded, and it is out of synch with modern conditions. Nevertheless, the abilities to empathize, love, cooperate, and feel attachment to nature probably are encoded and provide a sound basis for the future.

With this and more as background, the Yale School of Forestry and the Environment, the Yale University Divinity School, the Wilderness Society, and the National Religious Partnership for the Environment organized a conference at Yale in May 2000. Stephen Kellert and Timothy Farnham, editors of *The Good in Nature and Humanity* (2002), pulled together most of the presentations made at that conference. This book reflects the range and variety of the conference's 700 participants, not just the interplay among the well-established natural scientists, theologians, and ethicists who typically populate such conferences. Environmental writers—Wendell Berry, Barry Lopez, David Peterson, and Terry Tempest Williams—are included as equal participants. Biologist Carl

**This selection of Web sites illustrates the range of approaches taken
to link religion and/or spirituality and ecology.**

<http://environment.harvard.edu/religion/>

The Forum on Religion and Ecology. After 10 conferences and a series of books on the world's religions and ecology, the forum seeks to "bring the field of religious studies together with academic and activist discourse on the environment by highlighting the important roles that religious traditions play in constructing moral frameworks and orientating narratives regarding human interactions with the environment." This academic, ecumenical, and activist-oriented Web site, hosted by the Harvard University Center for the Environment, provides excellent access to curricular material and bibliographies on religion and ecology across the world's religions.

www.nrpe.org/

The National Religious Partnership for the Environment (NRPE). The US Catholic Conference, the National Council of Churches of Christ, the Coalition on the Environment and Jewish Life, and the Evangelical Environmental Network have joined to form NRPE. As stated on the Web site, "[T]he Partnership is integrating care for God's creation throughout religious life: theology, worship, social teaching, education, congregational life, and public policy initiative." It provides "inspiration, moral vision, and commitment to social justice for all efforts to protect the natural world and human well-being within it."

www.webofcreation.org/

Web of Creation. Sustained by the Lutheran School of Theology at the University of Chicago, this site provides access to a broad range of material on religion and ecology, alternative economics, eco-justice, and sustainability presented in a manner for use by individuals and congregations.

www.crle.org/

The Center for Respect of Life and Environment (CRLE). CRLE, a nongovernmental organization inspired by Thomas Berry, fosters an ethic of compassion toward all sentient beings and respect for the integrity of nature through publications and conferences. CRLE emphasizes our moral concern to future generations; to poor, oppressed, and disenfranchised human beings; and to animals, plants, and the earth as a whole. CRLE works with higher education and religious institutions. The Web site provides access to CRLE material and excellent links to other sites.

www.earthlight.org

EARTH Light: The Magazine of Spiritual Ecology. This magazine, also inspired by Thomas Berry, is ecumenical and spiritually inclusive; it is published by an independent, nonprofit organization with links to its Quaker heritage. The Web site highlights material in the magazine and provides links to supporting organizations.

www.sacredearthnetwork.org/

Sacred Earth Network (SEN). The Sacred Earth Network is an international nongovernmental organization with offices in Amherst, Massachusetts, and Moscow, Russia. SEN supports diverse environmental efforts that promote the core beliefs that "all of Nature is sacred and must be treated with respect and honor" and that humanity must restructure its relationship with our miraculous, interconnected, living Earth.

Safina is a coauthor with Dave Preble, a commercial fisherman. Coeditor Kellert is a sociologist with more than a professional interest in the field of environmental conservation. Coeditor Farnham and Jeremy Bernstein participated as doctoral students. Robert Perschel provided the perspective of the director of the Network of Wild Land Programs at the Wilderness Society and coleader of the society's Land Ethic Task Force. Though university presses are increasingly open to nonacademic authors, this mix naturally blends into the Island Press publication list.

Each of the 16 chapters is worthy of review, but I can only provide an overview and a sampling of ideas to entice potential readers to this book. First, the chapters by the theologians and ethicists—Calvin Dewitt, Strachen Donnelly, Margaret Farley, and Mary Evelyn Tucker, as well as the introduction to the first section, written by Richard Wood—are an excellent synthesis of the ethical and theological literature on the environment. The arguments put forward by the scientists—Doris Goodenough, Dorion Sagan and Lynn Margulis, George Fisher, and Carl Safina, writing with Dave Preble—are gen-

erally more personal, original efforts to address how the relationships, and lack of them, between science and religion affect environmental conservation. Though three of the four literary contributions were previously published elsewhere, they complement this collection very nicely. The chapter by Wendell Berry treats the inadequacies of our economic secular religion, focusing particularly on how it fosters increasing placelessness while stretching, thinning, and weakening chains of responsibility to each other and to nature. This rendition pulls together some of the best of Berry.

Let me close with two examples of the efforts of scientists to grapple with where they stand in the discourse on religion, science, and the environment.

Sagan and Margulis argue that nature gives us no ethical lessons. In contradiction of the arguments made by Wilson, though not explicitly so, Sagan and Margulis argue that people are an insignificant phenomenon in the overall, long-run history of Gaia. To focus on what appears natural in people as a basis for drawing "natural" ethical conclusions is to give false importance to people in an otherwise amoral, if

not downright ruthless, biological reality. Studying people may give us a better basis for our underlying moral possibilities, but studying ecology and evolution, looking at the big picture, does not. Sagan and Margulis are comfortable letting religion and ethical discourse be largely cultural phenomena peculiar to people, with importance to our survival, but not to Gaia, in the long run.

As activist conservation biologists concerned with Gaia's health today, Preble and Safina take quite a different standpoint. They find themselves comfortable with people of religion on quite different grounds. Conservation biologists already publicly assume the ethical stance that biodiversity should be conserved for future generations. From there they argue that they not only take this ethical stance but dedicate a fair portion of each day to actively promoting it. And then they ask, How much more religious can one be than this?

The awkward separation between religion and science since the time of Galileo is now in an equally awkward transition. The rapid unfolding of the relationship bears little relation to Condorcet and Comte's progressive vision of religion eventually flowing anew from science. It is not at all clear how it will turn out. I suspect, however, that the mutual interests of science and religion in nature provide a broad and critical base for working constructively on the relationship. The active, thoughtful involvement of scientists in the transition from this base could go a long way toward keeping particular differences in perspective. *The Good in Nature and Humanity* provides a good starting point for the initiate and an interesting set of reflections on efforts to date for those already engaged.

References cited

- Barbour IB. 2000. When Science Meets Religion: Enemies, Strangers, or Partners? San Francisco: HarperCollins.
- Berry T. 1987. Economics: Its effects on the life systems of the world. Pages 5–26 in Lonergan A, Richards C, eds. Thomas Berry and the New Cosmology. Mystic (CT): Twenty-Third Publications.
- . 1988. The Dream of the Earth. San Francisco: Sierra Club.
- . 1999. The Great Work: Our Way into the Future. New York: Bell Tower.
- Eiseley LC. 1959. The Immense Journey. New York: Random House.
- Engel JR, Engel JG, eds. 1990. Ethics of Environment and Development: Global Challenges and International Response. Tucson: Arizona University Press.
- Gould SJ. 2002. The Structure of Evolutionary Theory. Cambridge (MA): Harvard University Press.
- Kellert SR, Farnham TJ, eds. 2002. The Good in Nature and Humanity: Connecting Science, Religion, and Spirituality. Washington (DC): Island Press.
- Nash JA. 1991. Loving Nature: Ecological Integrity and Christian Responsibility. Nashville (TN): Abingdon.
- Oelschlaeger M. 1994. Caring for Creation: An Ecumenical Approach to the Environmental Crisis. New Haven (CT): Yale University Press.
- Rockefeller SC, Elder JC. 1992. Spirit and Nature: Why the Environment Is a Religious Issue. Boston: Beacon.
- Snow CP. 1959. The Two Cultures and the Scientific Revolution. New York: Cambridge University Press.
- Spretnek C. 1986. The Spiritual Dimension of Environmental Politics. Santa Fe (NM): Bear.
- Teilhard de Chardin P. [1959] 1975. The Phenomenon of Man. Reprint, rev. trans. New York: Harper and Row.
- White L Jr. 1967. The Historical Roots of Our Ecological Crisis. Science 3767: 1203–1207.
- Wilson EO. 1998. Consilience: The Unity of Knowledge. New York: Random House.