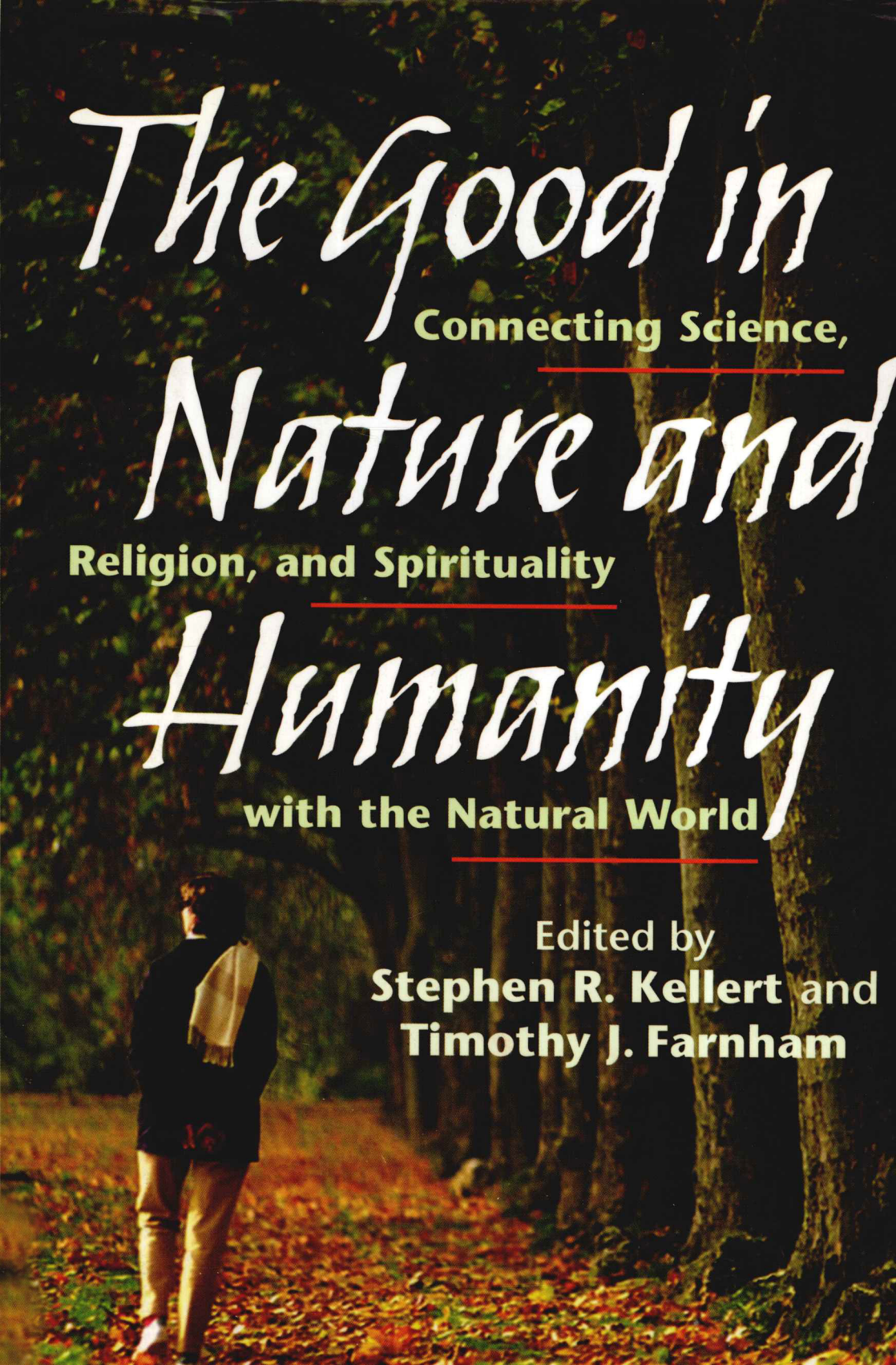
The Good in Nature and Humanity
Connecting Science, Religion, and Spirituality with the Natural World
Edited by
Stephen R. Kellert and
Timothy J. Farnham

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Preface

This book, and the conference that inspired it—"The Good in Nature and Humanity," held at Yale University in May 2000—originated in the conviction that the root causes of modern society's environmental and spiritual crises cannot be understood nor effectively resolved until the split between religion and science, or, more generally, between faith and reason, has been effectively reconciled. By comprehending and strengthening the bonds between spirituality, science, and nature, we may come closer to achieving an environmental ethic that better equips us to confront two of the most imperiling crises of our time—global environmental destruction and an impoverished spirituality. By bridging the gap between rationality and religion through the concern of each for understanding the human relation to creation, we may better pursue the quest for a more secure and meaningful world.

Scientists traditionally examine the natural environment in seeking knowledge that enhances our physical and mental security. The religious or spiritual practitioner analogously pursues an understanding of creation that points the way toward meaning and salvation. For both scientists and the spiritually and religiously inclined, the recognition grows that in our abuse of the earth we diminish our moral as well as our material condition. This mutual realization forges an understanding of the link between an environmentally degraded planet and a spiritually depauperate humanity. Conservationists, ever more cognizant of this connection, have increasingly acknowledged that both scientific and spiritual understandings are necessary in achieving an ethical sensibility capable of confronting the global crisis of pervasive environmental pollution, resource depletion, atmospheric degradation, and enormous biodiversity loss.

This book is based in the premise that neither science nor religion by itself can resolve the prevailing malaise of environmental and moral decline. The contributors to this volume pursue an ethic of right relation between nature and humanity that balances theory with practice and relates each to the enormous challenge of generating a practical ethic for managing the natural envi-

ronment. Scientists, theologians, spiritual leaders, and writers, working with foresters, farmers, fishers, wildlife managers, and land developers, embrace an environmental perspective that links utilization of nature with the preservation of its beauty, health, and integrity. A basic objective is to advance human wisdom in order to avert environmental catastrophe but, more affirmatively, to achieve a more harmonious human relationship with the natural world that moves us toward a measure of goodness and grace. The phrase *the good in nature and humanity* reflects the realization that in pursuing a more nurturing relationship with the natural world, we see our own salvation in the preservation of the health, integrity, and beauty of creation.

The book originated, as noted, in a conference, organized by the Yale School of Forestry and Environmental Studies, the Yale University Divinity School, The Wilderness Society, and the National Religious Partnership for the Environment. Over a period of four days, some seven hundred participants confronted issues of science, religion, spirituality, and the natural world and the related challenge of ethical environmental and resource management. Most of the conference speakers contributed to this volume. Some not represented in the book include Sylvia Earle, Paul Gorman, Gary Nabhan, and Seyyed Hossein Nasr, occasionally cited in the chapters that follow.

The volume is organized in three parts. Corresponding chapters are introduced in greater detail at the beginning of each part; what follows is a brief overview. Part I, "Scientific and Spiritual Perspectives on Nature and Humanity," explores how science, spirit, and religion can guide our experience and understanding of the good in nature and its relevance to our ongoing relationship with the natural world. Richard J. Wood, former dean of the Yale University Divinity School, introduces this part with a thoughtful reflection on the relevance of traditional philosophical approaches to ethics in the generation of an environmental ethic grounded in both scientific and religious understandings of creation. Part II, "Linking Spiritual and Scientific Perspectives with an Environmental Ethic," written largely by resource managers and users, focuses on how the integration of science and spirituality can equip us to make wiser choices as procurers and consumers of resources obtained from the natural world. William H. Meadows, president of The Wilderness Society, introduces this part by calling for a land ethic wherein advocacy based in moral passion leads us to land and resource use that honors the sacredness of the earth. Finally, part III, "From the Perspective of the Storyteller," embraces a more narrative understanding of the relation between science, spirit, and nature.

Stephen R. Kellert and Timothy J. Farnham

Acknowledgments

This book, and the conference that preceded it, came into being as a result of the considerable assistance and inspirational guidance of others. We owe particular thanks to Robert Perschel of The Wilderness Society, Paul Gorman of the National Religious Partnership for the Environment, and Dr. Richard J. Wood, dean emeritus of the Yale University Divinity School, all of whom were instrumental in the organization and realization of the conference. The original concept and implementation of the meeting benefited greatly from the creativity, commitment, and hard work of Greg Hitzhusen, a joint degree student at the Yale School of Forestry and Environmental Studies and the Yale University Divinity School. Richard Fern, a professor at the Yale University Divinity School at the time, was an important intellectual force in the conference's development. We owe special thanks to Nature Johnston, a student at the Yale University Divinity School, for her remarkable energy and competence in helping to organize the conference, as well as the invaluable assistance of many other students at the Yale School of Forestry and Environmental Studies. We also received material and moral support from Professor Mary Evelyn Tucker of Harvard University's Forum on Religion and Ecology and Gus Speth, dean of the Yale School of Forestry and Environmental Studies. Additionally, we thank Nathan Garland for his superb design of the conference program and poster. Finally, we very much appreciate Barbara Dean's invaluable editorial suggestions and advice in the development of this book.

Implementation of the conference and publication of the book would not have been possible without the generous financial support of many institutions and individuals. We especially thank The Nathan Cummings Foundation, the Heinz Family Philanthropies, the Oliver S. and Jennie R. Donaldson Charitable Trust, the Edward J. and Dorothy Clarke Kempf Fund at Yale University, the Center for Resource Economics, the H. Boone Porter and Violet M. Porter Charitable Foundation and the family of H. Boone Porter, Reverend Albert Neilsen, The Wilderness Society, the Yale School of Forestry and Environmen-

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Contents

Chapter 1

Building the Bridge: Connecting Science, Religion, and Spirituality with the Natural World

Timothy J. Farnham and Stephen R. Kellert

There is a perception in modern society, as reflected in many of the chapters that follow, that a significant divide exists between science and religion. These two modes of inquiry—the empirical and the faith-based—represent ways we search for answers to questions both practical and timeless. Yet in Western culture the two are often envisioned as occupying different realms of thinking and practice. The goal of this collection is to find connections, through humanity's relation to the natural world, that help bridge the chasm separating the scientific from the spiritual and religious.

But as often occurs when two entities have grown apart, there exist fundamental language and communication problems that obstruct a possible reconciliation. The words themselves impede what could be fruitful exchanges between science and religion concerning the human ethical relationship with nature and creation. As William H. Meadows comments in his introduction to part II of this book, "we are still in search of the right language, the comfortable language." George W. Fisher similarly declares in chapter 8 that a significant language problem exists when we converse outside the familiar confines of a faith or a discipline. David Petersen, in his essay on hunting and spirituality (chapter 13), further notes the need for a "lexicon" that allows discussions of spirituality and nature to move freely between secular and religious worldviews. In short, we need a common vocabulary, a language that allows thoughtful people to cross over safely and share ideas about science, religion, spirituality, and the natural world.

Definitions, of course, are the basis of any language, especially one seeking to bring together separated constituents. While the words *science* and *religion* obviously have complex, multilayered meanings, we can propose relatively simple characterizations that partially reveal how contemporary culture often understands each term. For example, the *Oxford English Dictionary* observes that the modern notion of science has become "restricted to those branches of study that relate to the phenomena of the material universe and their laws," whereas in past centuries the term *science* often enjoyed a broader usage indicative of the search for knowledge in a wide variety of fields.[1] In contemporary times, the practice of science typically involves specialized instruments that measure quantities and qualities in the context of experiments or carefully controlled studies specifically designed to test hypotheses. This activity derives from and results in theories that seek to explain the workings of the natural world through physical causation alone. Investigators who use the scientific method generally ask questions that can be answered only by experimental or controlled testing procedures, and the answers must meet certain levels or standards of proof. Science implies the use of reason and the pursuit of empirical "facts" to increase our understanding of how the universe functions.

By contrast, again quoting the *Oxford English Dictionary,* religion represents the "recognition on the part of man of some higher unseen power" and the beliefs, traditions, and ceremonies that formally represent this understanding and recognition.[2] Often, this "unseen power" is considered responsible for the origin of life and may even be regarded as continuing to exercise a measure of control over present and future human activities and other aspects of creation. Whatever the specific details, religion and spirituality require some degree of belief in, reverence for, and worship of a higher power. Moreover, because this power typically is believed to possess qualities existing beyond the known material world (hence the term *metaphysical*), religious and spiritual thought incorporates a significant element of mystery and questions whose answers cannot be demonstrated or proven by scientific and empirical examination alone. In apparent opposition to science and reason, spirituality and religion depend on faith, the human recognition of and deference to the unknowable, and the related realization that answers to some of life's most profound questions can exist beyond complete human understanding.

Using these broad definitions as a foundation, we recognize that the pursuits of both science and religion can have their extremes, and perhaps here is where the divide between the two becomes most evident. For example, as Ursula Goodenough notes in chapter 2, something exists deep within humans that resists scientific explanation because of "a fear of reductionism." This fear

involves the view that science entails an impulse toward continuous analysis, a dissection (and, by implication, destruction) of the whole in search of the mechanism. Science is seen as neglecting the larger emergent and holistic qualities of nature that humans intuitively experience without the aid of a microscope. These reductive practices represent what biologist Edward O. Wilson calls "scientism" or "science run rampant."[3] In an effort to describe the fear that science often elicits, Wilson quotes scientist and social critic C. P. Snow, who expresses well the frequent protest of science's analytic ways:

> Science reduces and oversimplifies
> Condenses and abstracts, drives toward generality
> Presumes to break the insoluble
> Forgets the spirit
> Imprisons the spark of artistic genius[4]

In addition to having concerns about reductionism, many people regard science's close connection with modern technology as representing a dangerous liaison. As Jeremy Benstein notes in chapter 9, this relationship frequently implicates science in an increasing mechanization and dehumanization of society, resulting in a weakening of the physical, cultural, and spiritual ties between people and the natural world. Some further believe our technological prowess encourages an exaggerated obsession with and focus on the material and physical. As Goodenough observes, many fear that science and its offspring technology directly conflict with religious and spiritual values, forcing us to "encounter our context in [only] material form." Moreover, Goodenough continues, "to lose our spirituality, we fear, is to lose our humanness, our soulfulness, our capacity for transcendent experience. We fear we will become automatons." Such an end would seem to befit a society excessively focused on the mechanical and physical properties of the world.

Religion and spirituality can easily be perceived as the victims of this struggle with modernity and a hegemonic scientific perspective of creation. The importance of faith may seem diminished by a constant onslaught of scientific discoveries purporting to reveal and enable us to "know" the inner workings of the universe. But religion and spirituality cannot be so readily cast as innocents, given that they are often complicit in helping build the divide with science. Critics of religion, for example, note its seeming inflexibility and doctrinaire qualities, and many observe that spiritual thought has often lost its relevance for many, if not most, citizens in modern society. Moreover, faith is frequently depicted as a crutch; reliance on it is seen as a surrender to ignorance that is crippling precisely because faith requires no physical proof nor

can ever be proven wrong. A familiar example of religious immobility in the Christian tradition is literal adherence to the story of creation. As Margaret A. Farley notes in chapter 7, even though the facts of this story are "contradicted by the findings of modern science," some believers refuse to accept or even consider the theory of evolution. The battle between evolutionists and creationists is well documented, and some scientists evoke images of fundamentalists who insist the earth was created in six days to illustrate how traditional religious thought contradicts accepted science. Certainly, many believe a doctrine of creation is not incompatible with an evolutionary perspective, but those who choose to interpret religious texts most literally often find their beliefs in conflict with science and modernity.

Thus, one of the strongest critiques of religion and spirituality is that of "blind faith." While many fear the scientific tendency toward overanalysis, the corresponding fear of religion involves a lack of analysis. In a society in which individuality, inquiry, and independence are prized, traditions demanding submissiveness and the suppression of doubt tend to be rigorously criticized. Religion in the extreme often seems to leave little room for discovery and innovation. In many ways, Goodenough's description of people's worry of becoming automatons under the domination of science can also be applied to religion. The fear of spiritual and religious zealotry is based in part on a perception that it causes adherents to lose their desire and ability to explore and discover.

These are unpleasant characterizations, and they should not be exaggerated. But it is important to recognize that both science and religion have aspects that people fear and resist. Both possess the potential to deny or suppress essential facets of our humanity and our relation to nature and creation. For this reason, we must look for ways in which science and religion can prevent such extremes from dominating, as well as ways they can share common goals and language that offer guidance, particularly regarding our effects on the natural world. As Calvin B. DeWitt suggests in chapter 3, science and religion can and should be necessary complements in our modern worldview. Both seek understanding of, and answers to questions about, the world that humans experience. Both pursue the "truth," and this pursuit lies at the crux of the connection between science, religion, spirituality, and nature. Both share, in this search for truth and knowledge, the same ultimate objective of revealing the underlying causes in the patterns of the universe and determining our place in these patterns.

René Dubos, in his book *The GodWithin,* offered eloquent words to express these potential connections between religion and science:

> Religion and science . . . constitute deep-rooted and ancient efforts to find richer experience and deeper meaning than are found in the ordinary biological and social satisfactions. . . . Both the myths of religion and the laws of science . . . are not so much descriptions of facts as symbolic expressions of cosmic truths. These truths may always remain beyond human understanding, but at every stage of human development glimpses of them have enriched man in experience and comprehension.[5]

Scientists may take exception to the notion of their discoveries being "symbolic expressions" analogous to the "myths of religion." But Dubos, a molecular biologist, two-time Nobel laureate, and seminal environmental thinker and conservationist, offered a perspective that elevates science above the limited role of providing only facts while reminding us that religious and spiritual myths can contain as much truth as can accepted scientific discoveries. To Dubos, facts as mere "descriptions" are marginally important, but as "symbolic expressions of cosmic truths" they retain the magic that scientists experience when they seek to decipher the mysteries of the natural world. Facts as the gateway to more profound revelations can be an accurate description of the motivation of many scientists. Similarly, myths as symbolic expressions allow us "glimpses" of truths, enriching our understanding of the world beyond everyday experience. Science and religion can thus become unified through their ultimate goal.

Yet finding a common language and engendering trust between science and religion, especially regarding matters of the human relationship with the natural world, have proven difficult. Many scientists and conservationists avoid discussing their interests and endeavors in religious or spiritual terms. For example, David Takacs, in his book *The Idea of Biodiversity,* asked various conservation biologists a wide range of questions, including whether or not they found spiritual or religious value in their work and their efforts to preserve biodiversity. Most of the biologists expressed difficulty with the word *religious,* and some flatly declared their distaste for the ritualistic and restrictive beliefs they associated with an organized faith. The term *spiritual* elicited a wider range of responses, although many of the scientists seemed stymied by the word, claiming that the lack of a clear definition for such a "fuzzy" adjective, as one called it, made it difficult to express useful observations about the spiritual value in their work. Some further relied on scientific terms to explain spiritual feelings as biological or psychological adaptations humans acquired

during our evolutionary development. Others, faced with questions they regarded as falling outside their professional training, simply declined to consider possibilities beyond the scientific frame of reference.[6]

One scientist remarked when asked whether he found religious or spiritual value in his work:

> Not at all, no. Zero. I'm just a traveler in time, that's it. . . . As a scientist, you can't be an atheist and you can't be a believer because you can't test the hypothesis. So your only recourse is to be an agnostic. There is no other possibility if you're a real scientist.[7]

But interestingly, when asked what had motivated him to become an entomologist, this scientist related having experienced the following feelings when observing the beetles he studied:

> You see it and it's just, God, it's just beautiful, absolutely beautiful. How did it come about? The process behind it must be even more beautiful, more intricate, more complex, more sophisticated, whatever. And it's a challenge to the human mind to figure that out.[8]

Aside from the irony of invoking God to express what he saw when looking at a tiny life-form, this scientist unknowingly described the shared goal of science and religion as Dubos had earlier identified: Both of them search for origins; both seek an understanding of the mysterious processes through which life develops.

Science and religion can each reveal the curiosity, humility, and reverence humans experience when confronting expressions of creation far more complex than any single entity or being. Perhaps, as the entomologist asserted, no apparent way exists to test for God or some fundamental force in the universe, but it seems that the "process" of creation he described inspires an awe similar to the religious emotion felt by those worshiping in ways other than by studying insects. This shared sense of wonder emphasizes the similarities in science and religion rather than the differences between them.

The celebration of creation is perhaps the strongest link between the scientific and religious worldviews. The study of the earth and the complex relationships that link life together offers a common ground for both scientific and spiritual revelation. Dubos, again, provided wise words on the subject, suggesting that the broad field of ecology offers the prospect of a future relationship between science and religion:

> We may . . . be moving to a higher level of religion. Science is at present evolving from the description of concrete objects and events to the study of relationships as observed in complex systems. We may be about to recapture an experience of harmony, an intimation of the divine, from our scientific knowledge of the processes through which the earth became prepared for human life, and of the mechanisms through which man relates to the universe as a whole. A truly ecological view of the world has religious overtones.[9]

Ecology holds the promise of revealing the connections between living things and their environment. Rather than abandoning the effort to learn about the mechanics of the world, ecology emphasizes how these mechanisms serve to link humans and other life-forms to the surrounding world. This perspective can lead to an "experience of harmony" or, more strongly, "an intimation of the divine," which Dubos saw as a pathway to a "higher level of religion."

The ecology Dubos envisioned is not simply an effort to understand how nature works, a search for mere descriptions. A truly ecological view perceives complex systems of intertwining relationships that allow us to hear what Dubos termed "religious overtones." These overtones serve as a clarion call for humans to discover how to act in relation to the natural world. Ecological interdependence implies a moral obligation to consider how our activities affect the earth. Here we discern the potential convergence of scientific, religious, and spiritual thought, a means for considering ethical duties to nature that invoke the perspectives of both science and religion. Decisions about our role in conserving other living beings in an interdependent ecological system require us to combine scientific knowledge with our sacred beliefs. Science can lead to an understanding of our influence on other life and on the natural environment, but in becoming cognizant of this knowledge, we face choices that have spiritual consequences.

The successful completion of a bridge between science and religion will depend on the respect and reverence for the natural world cultivated on both sides of the spiritual and scientific divide. Ethics serves as the keystone, and if the bridge is carefully built, we can anticipate a free and fruitful flow in the exchange of scientific and spiritual views. This collection of essays will, it is hoped, offer a strong base from which to start constructing this enduring edifice.