

FOREWORD

A Man with a Mission

Richard J. Pendergast, SJ, was my friend. Although we were both New Yorkers, our meeting in the summer of 1984 was not a chance encounter. Quite the contrary, it was for me the end result of a targeted search.

A native of Budapest, Hungary, I had lived through the Second World War as a child, and come to the United States in my teens with my family in the subsequent wave of refugees from East Central Europe. I attended public high school, and my early love of mathematics was joined by a growing interest in philosophy as I completed a broad liberal arts program on scholarship at Manhattanville College. Further support was provided by Bell Labs, where I worked in systems engineering while studying for a doctorate in mathematics at the Courant Institute of New York University. Readings in the history of science led to the desire to participate in the introduction of mathematical techniques in medicine.

By this time, I had been engaged in medical research and education for nearly two decades at a large medical center on the Upper East Side of Manhattan, where I also lived. My work was engrossing and meaningful, but I sensed with increasing intensity the absence of a dimension in the totally secular framework of my professional life: issues upon issues that cried out for exploration and analysis in the full context of our rich traditions that include the world of the spirit. I kept buying books, I kept reading. There was the recurring thought that perhaps I need not be alone, perhaps there were others somewhere, others I could join in a common quest. The two authors whose work had made a special impression on me were Teilhard de Chardin and Karl Rahner. Since both were Jesuits,

I thought I should find out what the Jesuits were doing. But I did not know any Jesuits. Then one day, browsing in the literature rack in the vestibule of St. Ignatius Jesuit Church near my apartment, I came across the announcement of a one-week directed retreat to take place shortly at Loyola Retreat House in New Jersey, not far from Manhattan. I had no idea what a directed retreat was; I knew only about preached weekend retreats that I had attended. But it said here that participants had their personal director with whom they met for an hourly session each day. Speak with a Jesuit for an hour every day for a week? That seemed perfect for me, and I signed up. Under comments, I added that I would like an older director and I wanted to discuss my work.

My director was Father Harvey Haberstroh, a kind, gentle man in his early seventies. He listened intently as I told my story, then said that he would think about it. He suggested that in the meantime I enjoy the week ahead. And I did just that. It turned out that I was the only lay member of the group. The others were priests and nuns making their annual one-week retreats, and many seemed to know each other. But I was rapidly drawn into the spirit of the event. The beautiful setting of thirty acres of lawns and gardens, the open, friendly environment, the intimacy of daily Mass with the community gathered in the small chapel—a new experience for me, used to large city churches—contributed to a peaceful, joyous stay.

The day before the end of the retreat, Father Haberstroh returned to the subject of my visit. He said that he had been praying about it, to discern how to help me in my search. The best advice he could offer was that I should meet another Jesuit priest, Richard Pendergast, who had been on the staff here and had just been assigned to St. Ignatius in Manhattan. A few years older than I, he had a doctorate in physics and had published a book called *Cosmos* that was available in the retreat house library. “You should meet Dick Pendergast,” Father Haberstroh said, “because you are soulmates.” I did find a copy of *Cosmos* in the library. Its dedication read: “To Karl Rahner and Pierre Teilhard de Chardin, masters and older brothers in Christ.”

When I called Richard Pendergast shortly afterward, he had already heard about me from Father Haberstroh. We agreed to meet

at St. Ignatius at one o'clock on a day later that week. He was waiting for me when I arrived at the rectory and we sat down in the parlor. The conversation flowed easily and became absorbing. So much so, that the next time I looked at my watch, I was surprised to see that it was six o'clock. He understood and responded to the issues I raised, and I in turn was familiar with concepts and titles he mentioned, books I had read on my own over the years. He spoke of the significance of *The Cloud of Unknowing*, the fourteenth-century English classic of mysticism, a work that I knew and owned. When I got home, I took the little book off the shelf and read it again that evening.

Although the circumstances and settings would vary, that first meeting set the pattern for the next twenty-eight years: five to six hours of rambling conversation, about anything and everything. We would generally meet every few weeks, with phone calls in between.

I asked him at the start what he was doing. He explained, and this I also knew, that the best exposition of Catholic doctrine was held to be that of St. Thomas Aquinas, based on the philosophy of Aristotle. But the latter has a static worldview, whereas science today thinks in terms of process, of evolution. An approach especially suited to properly modify the expression of Church teaching was the process philosophy of Alfred North Whitehead, who had important insights that had not been developed from a Catholic perspective. Making use of these to seek a modern synthesis of Thomistic thought based on reality as process was Richard Pendergast's aim. I already knew of Whitehead as a major figure in mathematics, and all this made a lot of sense to me. People try to find the meaning of life as experienced in their own culture, and the eternal message of the Church is clearly most meaningful if proclaimed in the framework of a compatible cosmology.

In fact, to reconcile modern science and Christian faith was the reason Richard Pendergast became a Jesuit. He had served in the Navy, was an electrical engineer, had a girlfriend. In the end, the desire to devote his life to seeking a resolution of conflict between science and religion became decisive, and he felt that he could best do that as a member of the Society of Jesus. By the time we met, however, he had been a Jesuit for over three decades and had a realistic picture of the situation. This was

not an age of syntheses, he said; there was virtually no interest. The focus was entirely on science, its stunning feats and promises. His own hope now was to develop the synthesis outlined in his 1973 work *Cosmos*,¹ publish his insights in a book and leave it for posterity, for the Lord to make use of it at the proper time as he willed.

Zachary Hayes, OFM, devotes a section of his book *What Are They Saying about Creation?* to a review of *Cosmos*. “Perhaps the most sustained attempt to map out the contours of a new theological model is the little-known study by R. Pendergast entitled *Cosmos* (Fordham University Press, 1973). . . . Throughout he expresses the implications of the basic conviction that dynamic process is a fundamental feature of cosmic reality which theology ignores only at a great price.”²

The Cosmic Hierarchy, the title of Volumes 1 and 2, reflects the primary roles of the nature of time and of teleology in Richard Pendergast’s crystallized vision. He saw evolution as the progressive, step-by-step actualization of the successive levels of what he called the cosmic hierarchy (six or more levels from the smallest particles to living beings), with progress in terms of ontological value. He did not see aimless wandering through the space of all possible configurations of inanimate matter. An early draft of his manuscript was already in existence when we met. He gave me a copy to read, and I had the opportunity to see and discuss later versions as his material continued to develop.

An author significant in Richard Pendergast’s work who would become central to my own thinking about scientific activity was the scientist-philosopher Michael Polanyi. Challenging positivist concepts of objectivity with his theory of personal knowledge, Polanyi argued that all explicit knowledge relies on tacit knowledge, a vast domain of tacit assumptions, perceptions, and commitments of the persons who hold them. Science is a more formalized type of knowledge, but not distinct in kind from other human knowledge. It is an affirmation of our beliefs; these must be responsible beliefs consistent with the evidence, but the ultimate commitment is that of personal judgment.

Polanyi’s thought complemented in my own mind the revolutionary

insight of twentieth-century mathematics concerning the intrinsic limitations of scientific knowledge, achieved by Kurt Gödel's incompleteness theorem. According to this theorem, any consistent mathematical system that includes even as little as the arithmetic of whole numbers contains statements that cannot be proved either true or false within the system. No mathematical system can encompass all truth; there will always be some truths that are beyond it. This means that science will never be able to explain all of reality.

My main focus was on issues of uncertainty and evidence in medicine, and I sought an approach that could be meaningful to all in our pluralistic culture. I called it the Ethics of Evidence.³ Why ethics? The aim of evidence is to promote some belief or action, and thus it has an intrinsic moral dimension. Evidence is complex and fragile, with standards that vary by discipline. Developed initially for medicine, the approach has since been seen to be widely applicable to other areas of decision making in human affairs. Summed up in two simple rules or imperatives, it calls for (1) the creation and use of the best possible evidence in each relevant field, and (2) increased awareness and acceptance of the extent and ultimately irreducible nature of uncertainty—scientific and existential uncertainty. The desired outcome is a conscious act of personal judgment.

After a year's assignment at St. Ignatius, Richard Pendergast served for six years as chaplain at a retreat house on Long Island. In 1991, he suffered a major stroke, from which he recovered almost completely, but an existing heart condition turned more serious, and he became a permanent resident at Murray-Weigel Hall, the Jesuit infirmary on the Fordham University campus. He engaged in pastoral ministry nearby and continued his scholarly work. He had taught physics in college in his early years as a Jesuit but had left academic life by the time we met. Pastoral ministry combined with his own research and writing was what he wanted to do. His closest friends were devout Catholic couples with large families who welcomed him into their homes. His parents were deceased. He had a younger sister, a Dominican nun, whom he brought over to meet me on

her next visit to New York; sadly, she died of cancer not long afterward. He had three cousins in New Jersey with whom he kept in touch. Through him I met other Jesuits, mostly at conferences we attended together.

When he came to Manhattan, at times we would go to see an exhibit at the nearby Metropolitan Museum of Art. When I visited him at Murray-Weigel, we attended the community Mass and had lunch with the community, then spent the afternoon at the New York Botanical Garden adjoining the Fordham campus. He enjoyed walking in the Garden and visited it almost every day.

When, calling him about something in the evening, I asked what he was doing, nearly always he was saying the Rosary. I asked him once how much time he spent in prayer each day, and he said three hours. During the 1995 papal visit to New York, when Pope John Paul II celebrated Mass in Central Park for 125,000, Richard Pendergast was one of two hundred priests concelebrating with the Holy Father and distributing Communion to the faithful.

On occasion we spent a weekend at my widowed mother's home in New Jersey, where he celebrated Mass for us. Early risers both, they would engage in wide-ranging conversation at the kitchen table, as she offered him a rich menu for breakfast. He also enjoyed her fine Hungarian cuisine at the holiday dinners he came to share with us. He visited my mother regularly at Memorial Sloan-Kettering during her final illness, and he was with me at the hospital on the day she died.

In his 2012 autobiography, the distinguished German Catholic philosopher Robert Spaemann makes the statement that, in his view, the most significant work of metaphysics of the twentieth century was *Process and Reality* by Alfred North Whitehead.⁴

But the situation was far from clear in America. A rejection letter Richard Pendergast received from a well-known Catholic publisher states, "I think that the topics covered are extremely important." But . . . "we are not quite ready to stake out a claim in the hylomorphism wars." There had been similar responses to previous attempts to have his book published. It may be, although I cannot of course be sure, that the

reticence of Catholic publishers to get involved was based on the perceived conflict between modern physics, with related process thought, and Aristotle's theory of matter, of substance as matter and form (hylomorphism), used in the philosophical formulation of the teaching of the Catholic Church on the Eucharist.

This important, highly specific theological topic did not appear in the Pendergast manuscript. He published a separate, long essay on the subject in a peer-reviewed journal of philosophy and theology. Titled "The Mass on the World," this essay presents a comprehensive historical review and sketches a modern theory of transubstantiation that is consistent with Church doctrine.⁵

Briefly, it involves the cosmic hierarchy, a form of holism discussed by Richard Pendergast, and his use of the original Hegelian term *aufheben*, translated into English here as "to sublimate." (Hegel introduced this German word with its diverse contradictory meanings in everyday use, exemplified by "to cancel" and "to preserve," into philosophical terminology. It has been employed by other scholars whose interest was in the word itself, unrelated to Hegelian philosophy.) When entities are sublated to a higher level of ontological value of the cosmic hierarchy, their own properties are preserved, while they themselves are integrated into the entity on the new level. In consecration, the Eucharistic bread and wine are sublated from their natural level to the highest level of the hierarchy and become the incarnate Word. The real presence of Christ in the Eucharist is a sign and promise of the final transformation of the world, and the essay here recalls the mystical prayer of Teilhard de Chardin reflected in its title.

Richard Pendergast had already published a study on his Thomistic-process theory of the Trinity,⁶ a process theory of Creation,⁷ and a process Christology,⁸ with two more studies to follow.^{9,10} At this point he decided on a radical revision of his manuscript. His primary aim had always been to reach a wide audience, the general public, readers seeking meaning in their own lives amid the fragmentation and noisy claims of the secular world. Retaining the main title of the book, he changed the subtitle from "The Universe and Its Many Irreducible Levels" to "God's Plan for the Evolution of the Universe."

This new, condensed version focuses on the important current concerns of science—the nature of matter, the problem of human consciousness, the interpretation of quantum mechanics and of biological evolution—and with extensive review of the literature offers a coherent view that is compatible with scientific findings as well as divine revelation.

But since every conclusion is based on a philosophy, there is an appendix on philosophy, where the author describes his own position. His early training had been in the Aristotelian-Thomistic tradition, as it was understood by Etienne Gilson and other neo-Thomists of the day. He had also been influenced by the ideas of Karl Rahner, Michael Polanyi, Alfred North Whitehead, and others. He explains some of the concepts that are accepted by most, or at least many, contemporary Thomists, with certain modifications of his own. He was basically a Thomist.

My brother John, also a physicist, offered to prepare a prepublication edition of this new version, and Pendergast gladly accepted. He did not see the cover, designed by my brother using an image of a star formation region from the Hubble telescope, until the carton of books arrived by mail at Fordham. It was meant as a surprise, and he loved it.

They had begun working together on the index when he died. He called me late one evening to ask about the results of some tests concerning my deteriorating eyesight. His death was sudden, due to a heart attack or stroke, and appears to have occurred shortly after we spoke. His last words to me were words of consolation and hope.

Always an optimist brimming with ideas, my brother insisted that we could continue on our own, and plans to get the book published were our top priority in the months that followed. Then John himself, having completed a manuscript of his own in physics, suffered a massive stroke. He survived for three years but was totally incapacitated.

Out of this, for me, devastating situation emerged a thought that has become reality—a foundation to carry on our work, mine and theirs. It is the Ethics of Evidence Foundation, a not-for-profit corporation incorporated in the State of New York. Funded initially by my personal resources,

it has been approved by the Internal Revenue Service as a 501(c)(3) tax-exempt corporation, so that others can contribute to support its mission of research and education. Richard Pendergast's work pertains to cosmology: integrating notions from science, philosophy, and theology to yield a coherent view of the universe.

THE PENDERGAST SERIES

The Church does not have a formal teaching on evolution at this time. But in 1981 Joseph Cardinal Ratzinger preached a series of homilies in the Liebfrauentempel, the cathedral of Munich, on the subject "In the Beginning: A Catholic Understanding of the Story of Creation and the Fall," in which the future Pope Benedict XVI offered a symbolic interpretation of the Bible narrative.¹¹

Richard Pendergast distinguishes between "ambitious" Darwinism, the theory that random variation and natural selection are sufficient to explain the evolution of the universe, and "modest" Darwinism, which includes the third factor of purpose. Examples of the latter are the cosmic vision of Teilhard de Chardin, with his by now classic essay on the interior life, *The Divine Milieu*,¹² and the intelligent design (ID) movement of recent years.

In his 1996 address to the Pontifical Academy of Sciences, Pope John Paul II stated that "new knowledge has led to the recognition of the theory of evolution as more than a hypothesis. It is indeed remarkable that this theory has been progressively accepted by researchers, following a series of discoveries in various fields of knowledge." But he added that there are in fact several theories, and he rejected those of the first category above, because they "are incompatible with the truth about man. Nor are they able to ground the dignity of the person."¹³

Summing up this book, the first volume of the Series: With the theme expressed in the words of Pope John Paul II on science, philosophy, and theology in common quest for understanding, the author develops what he calls a Christian cosmology—the integration of science and

divine revelation that reflects a dynamic worldview. He suggests that the horizon defined by specialization in science tends to limit more general awareness of reality. He observes the professed ambivalence of atheists concerning their personal experience of love. He notes that the reductionist claims of materialists in major areas of science have not been proved. He argues for teleology in quantum mechanics as well as biological evolution. The problems of evil, original sin, and evolution are discussed in the biblical context of cosmic powers, with the current crisis on Earth described as a ferocious guerilla war of these cosmic powers, which we know from revelation heaven has already won.¹⁴ Addressing both believers and nonbelievers, the author offers insight into problems that may disturb the faith of the former or impede the latter's search for God. He presents a living universe, a vision of meaning and hope.

Since the story involves a number of intellectual disciplines, readers are advised to skip over any material they find too technical and to read on to follow the thread of the narrative. There has been some minor editing, and an update on the ID movement has been added at the end of chapter 10. Otherwise, the text and references have been left unchanged.

For those interested in further discussion, the Foundation is releasing, as the second volume, the full text of the original manuscript, seen here as an expanded edition of Volume 1.¹⁵ Its more detailed look at the scientific issues with insights from philosophy and theology illuminates the richness of the conceptual development. The table of contents and a synopsis of this Volume 2 are included at the end of the present Volume 1, and its bibliography has become the reference list of Volume 1.

Three manuscripts representing the author's earlier work are being published as Volumes 3 to 5 of the Series. Volume 3 describes the present crisis and the need for a modern cosmology, introducing new concepts of physics and philosophy.¹⁶ In Volume 4, a philosophical interpretation of quantum theory developed by the author leads to a synthesis of Aristotelian with Whiteheadian concepts in a new cosmology compatible with Christian revelation.¹⁷ Volume 5 seeks to integrate this cosmology into a wider theological synthesis—a Thomistic process theology.¹⁸ Consisting of two parts, the latter is concerned with being and its trinitarian structure,

and with the pathology of being, which is evil. The first part takes up the doctrines of the Trinity, Creation, Christology, Redemption, and the Eucharist. The second considers the Christian answer to the problem of evil, including original sin and eschatology.

The work of Richard Pendergast is offered in a Series of five volumes, with its main ideas already published in the peer-reviewed literature. The Series is complemented by Volume 6, a reprint in three languages (English, German, and Spanish) of the author's essay on the Eucharist discussed above.¹⁹

As the fledgling Foundation grows and matures, plans call for the awarding of research grants to investigators who will carry on its mission. For what we are calling the Pendergast Project, this means continued study of the writings of the Jesuit scholar, with integration of emerging developments in science, for an ongoing synthesis that provides a coherent view of the universe.

It gives me joy to believe that the hope concerning his work, expressed to me by Richard Pendergast over thirty years ago, may in the end be realized.

Valerie Miké
President, The Ethics of Evidence Foundation
March 24, 2020

Acknowledgment. I had the opportunity to review Richard Pendergast's work with Bishop Attila Miklós-házy, SJ, professor emeritus of systematic theology at the Toronto School of Theology, and we discussed related theological issues. He read this manuscript, as well as the essay "The Mass on the World," and advised me to proceed with publication of the Pendergast material. Bishop Miklós-házy died on December 28, 2018.

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12. Pierre Teilhard de Chardin, *The Divine Milieu*, Harper Perennial Modern Classics (1960; New York: Harper, 2001).

13. Pope John Paul II, Address to Pontifical Academy of Sciences, October 22, 1996, see <http://inters.org/John-Paul-II-Academy-Sciences-October-1996>.

14. See ref. 9 above.

15. Richard J. Pendergast, *The Cosmic Hierarchy: The Universe and Its Many Irreducible Levels* (unpublished manuscript, 2007). Volume 2 of Series.

16. Richard J. Pendergast, *A Vision for Our Times: In the Sadness of the Modern World* (unpublished manuscript, 1988). Volume 3 of Series.

17. Richard J. Pendergast, *The Living Universe: An Organic Theory of Mind and Matter* (unpublished manuscript, 1990). Volume 4 of Series.

18. Richard J. Pendergast, *Creation, Evil, and the Trinity: A Christian Process Theology* (unpublished manuscript, 1990). Volume 5 of Series.

19. See ref. 5 above.

A COMMENT ABOUT LANGUAGE

When these works were written, inclusive language with regard to gender was already a major concern of our culture, and the author attended to it as he thought appropriate. Reading the texts again after all this time, I continue to feel comfortable with his language, and specifically his use of the male personal pronoun with reference to God and to the human person in philosophical discourse. In the latter case, keeping the concept of “man” singular with the proper personal pronoun seems the most direct way to convey the arguments. As for reference to God, readers will know that the author means the ultimate, transcendent reality, for whom use of the male personal pronoun has been the tradition in the English language. I am keenly aware of this linguistic issue, as my native tongue, Hungarian, does not distinguish personal pronouns by gender. Given the clarity and simplicity of presentation, there was no compelling reason to change the author’s original style.

Preface

In 1973, I published a book titled *Cosmos*, and during the next thirty years or so I gave a great deal of time to thinking about the problems I discovered then. The present book is the fruit of my reflections. In it I discuss cosmology from a point of view shaped by theology, philosophy, and science, one that is motivated by the desire to integrate these fields as coherently as possible. Our age needs a comprehensive vision to guide it. The core of that vision is the good news proclaimed to us two thousand years ago by Jesus Christ. But we also need to see how that divine revelation is related to the scientific understanding of the world that the human race has gained in the past few hundred years.

Nevertheless, neither it nor any merely human explanation of the world is able to compel the human mind. Certainty comes only through faith, which depends on divine grace. In this book, I do not attempt a full account of divine faith and how it comes to human beings. Merely reading it will not of itself make one a Christian, but I hope that a Christian will be convinced that what I say here seems to be correct, and a non-Christian will at least recognize that it is reasonable.

As discussed further in chapter 1, there are three fundamental kinds of truths. The first kind is supernatural truths that can be known with certainty only by faith. In contrast, the second kind can be known by our own natural powers without supernatural grace. The third kind is mixed truths that, in the abstract, human beings are capable of discovering for themselves but in the present sinful order of the world are not actually able to discern, at least not with clarity and certainty. In his mercy, God has revealed to us some truths of this third kind.¹ Having discovered

them with the help of faith, one can understand them rationally and may perhaps find oneself saying, how slow I was not to see it before.²

Most of the propositions I present in this essay belong to the second or third kind of knowledge. Nevertheless, I also discuss some of the first kind—that is, truths of faith that could never be known were they not given to us by divine revelation. They are dealt with mainly in the final chapters of the book. I speak of them because I think that, without them, neither this book, nor any book, could present a plausible account of all we know about reality. Though Christian revelation does not compel the intellect alone, it provides us with a way of looking at our experience that makes an act of faith in God and his love for us eminently reasonable. This book is intended to provide both believers and nonbelievers with a coherent view of the universe, one that will help dissolve intellectual problems that disturb the faith of the former and impede the latter's search for God. The class of people who have not yet found God but are consciously or unconsciously seeking him may be larger than one might think. Among them are many scientists and philosophers who expressly reject the concept of a personal God yet are at the same time earnestly seeking the truth. My hope is that the view presented here will both challenge and aid them in their search.

This manuscript is divided into a preface, four parts, and an appendix. Part One has three chapters. Chapter 1 is introductory; it discusses the present scene and words of Pope John Paul II on science, philosophy, and theology, leading up to the need for the development of a Christian cosmology. Chapters 2 and 3 deal with some important issues about the higher levels of what I call the cosmic hierarchy, including the questions of whether artificial intelligence is possible, whether the human mind can simply be reduced to the brain, and the nature of human consciousness.

Part Two includes the next four chapters, which deal with the lower levels of the natural hierarchy that pertain to physics, particularly John Cramer's interpretation of quantum mechanics (QM).

Part Three has three chapters that discuss in general the nature of various theories, mainly about biological evolution. This third part leads

to Part Four, which has two chapters. In chapter 11, I point out the difference between a “chronicle,” which consists of facts that seem to be correct, and a more ambitious theory that relates not only basic facts but also theorizes about the mechanisms that supposedly account for them. In this chapter, I present my own (Christian) theory of evolution. Finally, in chapter 12 I theorize rather briefly about the future of mankind as I conceive of it.

In my view, evolution is a progressive, step-by-step actualization of the successive levels of “the cosmic hierarchy.” Rather than a mindless wandering through the space constituted by the possible configurations of inanimate matter, it is progress in terms of ontological value. Evolution, which the biologist Richard Dawkins (1986) calls *The Blind Watchmaker*, is not blind at all. The nature of the interfaces between different levels of the hierarchy, in this case the ones that biology deals with, is crucial. In particular, the relationship of the level of human intelligence to the sensate and vital levels below it is very important for understanding the moral and religious aspects of our human existence.

Darwin himself was very much influenced by his personal experience of evil in the world and the temptation it presents to Christian faith (Keynes 2001). But, unfortunately, he seems never to have believed, as Christian tradition clearly suggests, that the conflict between good and evil in our world is due to the war between “cosmic powers,” that is, the angels and demons of which the Bible speaks.

In the final chapter 12, I speculate briefly on the future of the human race in the light of Christian belief in Jesus Christ and his mission. The divine revelation that St. Paul called the “mystery hidden for ages in God” has now in our age found its proper setting. That setting is our modern scientific discovery of the vast universe around us. This scientific view enables us at least to guess at the vastness of God’s plan for the whole of his Creation.

In the appendix, I discuss rather briefly some philosophical concepts that may help clarify the point of view in terms of which my ideas are expressed. To me these ideas are important, and for those who may be interested, I have included them in an appendix.

It is evident that to deal with all the ideas presented in this book requires insights from several intellectual disciplines, especially science, philosophy, and theology. Each discipline has its own proper domain and contributes something to the integrated sum of human knowledge. Moreover, they all have “boundary conditions” by which they are related to one another. None of these disciplines can lord it over the others. They all need to negotiate the boundary conditions between them.³ This is certainly true of philosophy and theology, but today it is especially true of science. In conjunction with technology, its pragmatic success has led many modern people to overrate its undoubtedly genuine importance. For some it has even become what Paul Tillich called their “ultimate concern,” a kind of false god that wants to replace the real one.

Specialists in science, philosophy, or theology can suppose and sometimes have supposed that their favorite way of thinking is the only valid one. Galileo’s judges were sure that their theological point of view settled the case. Today some of Galileo’s heirs are quite convinced that their scientific point of view is all that is needed to understand the beautiful and vast material universe they study. In my opinion they have no more reason for their confidence than did Galileo’s judges. Each intellectual discipline tries from its own perspective to be careful in its reasoning, but they are all fallible products of fallible human beings. Recognition of that fact is grounds for a certain skepticism about science and other intellectual specialties. Above all, none of them can be right when it contradicts divine revelation.⁴

Personally, I have loved science from an early age. I recognize its proper place as one of the major accomplishments of modern Man. Yet I have also come to recognize that it is but one among many valuable intellectual disciplines. Science must learn to adjust its “boundary conditions” with its peers lest it inflate itself beyond its reasonable limits. As Pope John Paul II wrote in 1988:

Science can purify religion from error and superstition; religion can purify science from idolatry and false absolutes. Each can draw the other into a wider world, a world in which both can flourish. (John Paul II 1988, p. m13)

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June 16, 2012

NOTES

1. On the use of the third-person masculine singular for God, see “A Comment about Language” on p. xxv above.
2. One is reminded of a similar remark made by Huxley when he first heard of Darwin’s theory. (We think it might have been Thomas Huxley.—ed.)
3. In physics, the term “boundary conditions” is used frequently. Often a physical system is subject to a differential equation that contains quantities called boundary conditions. These quantities often determine the development of the system.
4. I am, of course, distinguishing between divine revelation and the human science of theology. For me, divine revelation is a presupposition of theology, and theologians sometimes discover that they have misunderstood the revelation they are trying to explain in our human language.