"Probably no theological challenge is as pressing as the need to recover a worldview in which faith and science can relate constructively, informing and critiquing each other in the interest of helping humans find their place in God's universe. In writing *Trinity in Relation: Creation, Incarnation, and Grace in an Evolving Cosmos*, Gloria Schaab has done the theological community a great service. The text is comprehensive and informed by the very best science and theology available to us. Schaab demonstrates a masterful grasp of the theological and philosophical sources that have shaped Christianity. She is able to bring forth the deep value of that tradition while also pointing to insights and challenges from the natural and social sciences that can further the development of the Christian tradition and enhance its relevance today. This superbly written text is an excellent choice for upper-level undergraduate and graduate courses that explore the Trinity, the theology of God, Revelation, or the relationship between faith and science. I highly recommend this text."

—Dave Gentry-Akin, professor of Roman Catholic theology
Saint Mary's College of California

TRINITY
In Relation

Creation, Incarnation, and Grace in an Evolving Cosmos

GLORIA L. SCHAAB

ANSELM
ACADEMIC

Created by the publishing team of Anselm Academic.

Cover and interior art: *Strange Attractor*, by Margie Thompson

Printed in the United States of America

7042

ISBN 978-1-59982-602-8, Kno

AUTHOR ACKNOWLEDGMENTS

With great delight, I look forward to the publication of this text and wish to thank those who helped me bring it to fruition. Each is living proof that all being, the very being of this text included, is constituted by relation! I extend my heartfelt gratitude to Margie Thompson, SSJ, my dear friend, Sister, and companion in dialogue, who read, reviewed, and responded to each chapter of this book with an eye to its cogency, accuracy, and accessibility. Her clarifying questions and perceptive comments challenged me, even as her unflagging encouragement and good cheer sustained me. Margie's talent and grace as a professional artist further enhance this text with her compelling work of art *Strange Attractor* as its cover image.

Jerry Ruff and Anselm Academic whose breadth of vision, respect for the Catholic intellectual tradition, receptivity to creative ideas, and commitment to publishing engaging and stimulating texts for the contemporary college student gave this book the marvelous opportunity to reach so rich and vital an audience. I am especially grateful to Kathleen Walsh, my editor, whose literary skills, theological sensibilities, incisive observations, and obvious zest for this project made its completion both expeditious and enjoyable.

My colleagues in theology and philosophy at Barry University, especially Sandra Fairbanks who provided exactly the resources I needed on the philosophical understanding of personhood; Raymond Ward who generously permitted me to "think out loud" with him at particularly perplexing points in this project; and Mark Wedig, OP, whose enlightened and accommodative vision as department chair afforded me the time and space to bring this endeavor to a successful conclusion.

The undergraduate and graduate students at Barry University whose desire to delve into the infinitely knowable mystery of God

and willingness to engage the process of theology as "faith seeking understanding" continuously enliven and enrich my work. I thank especially the students in my fall 2011 undergraduate course "The Christian Understanding of God"—Wilner St. Phar, Isaac Washington, Leslie Redmond, Alex Musibay, Kwamain Williams, Shenique King, Orin Harris, Amor del Mar Pagán Irizarry, and Anthony Fabio—for the valuable feedback they gave me concerning the accessibility of the text for upper-level undergraduate students. The enthusiasm and astuteness that they brought to their exploration of and engagement with the theology of the Triune God stimulated profound thought and inestimable delight.

Elizabeth A. Johnson, CSJ, my mentor, colleague, Sister, and friend, whose passion for Divine Mystery, embrace of her vocation of theologian, fidelity to the living tradition, and commitment to the rigors of research inspire and reinforce my own.

Finally, my religious congregation of the Sisters of Saint Joseph of Philadelphia, especially Anne Myers, our President, and our General Council—Mary Dacey, Regina Bell, Carol Zinn, and Constance Gilder—whose wisdom, warmth, and unwavering encouragement hearten and support my ministry as theologian.

Ad majorem Dei gloriam!

PUBLISHER ACKNOWLEDGMENTS

Thank you to the following individuals who reviewed this work in progress:

Kurt Buhring
Saint Mary's College, Notre Dame, Indiana

Suzanne Franck
St. Joseph's College, Patchogue, New York

Catherine Punsalan-Manlimos
Seattle University, Seattle, Washington

CONTENTS

Introduction

This is a book about relations—*intimate relations*—that exist *between* all that is living: between the cosmos and humanity, between the cosmos and God, and between God and humanity. It is also about relations—*essential relations*—that exist *within* all that is living: within an evolving cosmos, within a developing humanity, and within the living God. It is moreover about relations that are fundamentally constitutive of cosmic, human, and divine being and thus provide a clue to the nature of reality itself.

The experience of relation—relatedness, relationality, or relationship—often stimulates a response of curiosity and appeals to us as humans. However, relatedness is not only of curiosity and appeal but also of the very essence of cosmic, human, and divine life. What Margaret Wheatley says of quantum physics in her book *Leadership and the New Science*, ought to be claimed concerning all of life: "Relationships are not just interesting . . . they are *all* there is to reality. . . . None of us exists independent of our relationships with others."[1] Thus, it is with the cosmos and with humans; thus, it is as well with God.

If relatedness is the essence of all life—cosmic, human, and divine—then how is God present and active within the unfolding history of creation? To answer this question in the twenty-first century, we must take into account a worldview shaped by the insights of the sciences, especially those of evolutionary biology and quantum physics. In dialogue with Christian theology, scientific insights have begun to broaden and challenge the way that many people have interpreted

1. Margaret Wheatley, *Leadership and the New Science: Discovering Order in a Chaotic World* (San Francisco: Berrett-Koehler, 2000), 34 and 35.

God's presence and action in the world. Such insights concern the age and size of the evolving universe, the complexity and diversity of life on the planet, the inherent creativity of the cosmos, the interplay of law and chance in the development of life forms, the inevitability of death and the emergence of life, the effect of whole systems on their fundamental parts, and the interdependent nature of elements and events at the subatomic level.

Traditionally, Christianity has viewed and described divine action as occasional, episodic interventions that disrupted the laws of nature or human events. Nowhere was this truer than in the divine acts of creation, incarnation, and grace. Creation has generally been thought of as a singular occurrence that happened at a moment forever past, through which the cosmos came into being from nothing by the act of a lone Creator. Christian tradition proclaims the event of the Incarnation in which the Word of God became flesh in Jesus of Nazareth as a once-and-for-all phenomenon that lasted for some 30 years more than 2,000 years ago. Finally, although Christians still consider grace as operative and ongoing in the midst of life, it is most often understood as a *thing that God gives*, rather than as a *way in which God relates* to the world.

Respectful of these understandings, this book, nonetheless, intends to revisit the question of how God is present and active in the world through creation, incarnation, and grace, in dialogue with a wide variety of resources from the Jewish and Christian traditions and the physical, biological, and social sciences. Informed by these disciplines in dialogue with an evolutionary worldview, it proposes that these divine activities are less adequately understood as *discrete and occasional acts* and more fittingly understood as *intimate and enduring relations* between the God and the evolving cosmos. In doing so, it sets forth a view of the Triune God of Christianity as intimately and ceaselessly present and active in the evolving history of the cosmos and dynamically engaged in the full flourishing of creation and its creatures.

What is it about an evolutionary worldview that might enable us to see and speak in new ways about God's interactions with the world? Answering this question requires that we first say something about our human capacity to know and to say anything about God at all!

God as Incomprehensible Mystery

Of all the assertions that religious traditions have made about God, the most fundamental is that God is an incomprehensible mystery. This means that God so utterly transcends the world of our experience that our finite minds are unable to grasp or express anything about God in Godself. Unlike the created world, God is Spirit (John 4:24) and as Spirit cannot be seen, touched, or heard in the same ways in which the physical elements of the natural world can. We must, therefore, observe certain "rules" in our speech about God.

Three such rules are suggested by twentieth-century Catholic theologian Elizabeth A. Johnson. The first rule, as mentioned previously, is that "the reality of the living God is an ineffable mystery beyond all telling. The infinitely creating, redeeming, and indwelling Holy One is so far beyond the world and so deeply within the world as to be literally incomprehensible."[2] As a result of this incomprehensibility, Johnson's second rule indicates that there is "no expression for God [that] can be taken literally."[3] As a result, quoting scholastic theologian and philosopher Thomas Aquinas, Johnson's third rule concludes, "we see the necessity of giving to God many names."[4]

God as Self-Communicating

In view of divine mystery, however, one must then question how persons come to truly know and speak of God. The Christian tradition teaches that persons of faith can come to know the Divine because God has chosen to reveal Godself in freedom and in love. In creation, in human experience, in the sacred writings of the religious traditions, and preeminently in Jesus Christ, God has revealed Godself out of love for creation. Twentieth-century Jesuit theologian Karl Rahner taught that God's very nature is that of free and self-communicating love and that the very existence of the cosmos and

2. Elizabeth A. Johnson, *Quest for the Living God: Mapping Frontiers in the Theology of God* (New York: Continuum, 2007), 17.

3. Ibid., 18.

4. Thomas Aquinas, *Summa Contra Gentiles* (*SCG*), 1.31:4. The *SCG* is accessible online in an annotated and abridged version from the *Jacques Maritain Center*, University of Notre Dame; available from *http://www2.nd.edu/Departments/Maritain/etext/gc.htm*.

its creatures is a result of this divine freedom and love. According to Rahner, God communicates *to* human beings *through* all that God has created, both human and nonhuman, and preeminently in Jesus Christ. Therefore, those seeking to explore and express the mystery of the living God must begin in those places through which God reveals Godself. In an evolutionary paradigm, this means, in creation and its creatures.

The Christian understanding of God as Creator and the cosmos as creation begins in the book of Genesis, which proclaims in its opening lines,

> In the beginning when God created the heavens and the earth, the earth was a formless wasteland, and darkness covered the abyss, while a mighty wind swept over the waters. Then God said, 'Let there be light' and there was light. God saw how good the light was. (Genesis 1:1–4a)

"*Then God said.*" God spoke—God communicated Godself—at the advent of creation. While most theologians regard this creation story in Genesis as a form of sacred allegory or myth, it nonetheless expresses an important truth for our attempt to speak of the divine mystery. It reveals God as the source of all creation and all of creation as the self-expression of God. Therefore, we can come to know God by attending carefully to God's self-communication through the natural world. As God's own creation, everything is full of sacred presence; everything has the capacity to reveal the living God.

God as Creator Revealed through Creation

Thomas Aquinas formalized this understanding of how God as Creator can be known through what God creates. In his *Summa Theologiae* (*ST*), Aquinas presented this argument:

> When an effect is better known to us than its cause, from the effect we proceed to the knowledge of the cause. And from every effect the existence of its proper cause can be demonstrated, so long as its effects are better known to us; because every effect depends upon its cause, if the effect exists, the cause must pre-exist. Hence the existence of God,

> in so far as it is not self-evident to us, can be demonstrated from those of His effects which are known to us.[5]

In his *SCG*, Aquinas summarized this idea in a simpler fashion: "There is some manner of likeness of creatures to God. . . . [Thus] from the attributes found in creatures we are led to a knowledge of the attributes of God."[6] Theologians term this likeness the analogy of being. The idea of analogy suggests a correspondence between the created order and God because of God's role as the Creator of the cosmos. This analogy between created being and divine being allows us to draw inferences about the attributes of God and the purposes of God based on objects and relationships in the natural order that God created. This is so because, in creating the world, God, whose essence or nature is Being Itself, shares "being" in the form of life and existence with creation. Thus, everything that *has* being participates *in* Being Itself; all that has life and being in creation participates in the very Being of the One who creates. Aquinas explains this in terms of *essence* and *cause*, *participation* and *effect*:

> Whatever is of a certain kind through its essence is the proper cause of what is of such a kind by participation. Thus, fire is the cause of all things that are afire. Now, God alone is actual being through divine essence itself, while other beings are actual beings through participation.[7]

While words constrained by time and space are inadequate to explain this concept fully, one can explain Aquinas's meaning in this way: God, whose essence *is* Being Itself, whose very nature *is* "To Be" without beginning or end and without before or after, causes a creature to come into being by sharing a moment or a portion—and here is where time and space strain our language—of God's Being in the very act of giving life and existence to that creature. In a way analogous to a fire that sets other things aflame by sharing a portion of itself and yet is in no way diminished, God who is *essentially* Being

5. Thomas Aquinas, *ST*, I.2.1. The *ST* is accessible online from Kevin Knight, *New Advent*; available from *http://www.newadvent.org/summa/*.

6. Aquinas, *SCG*, 1.33.

7. Ibid., 3:66.7.

causes *a being* to come into existence at a moment in history while in no way diminishing the nature of God. Furthermore, because God as Being causes a creature to come into being, the creature can be said to share in the Being of God and to be a unique manifestation of it. However, because the creature has being in a limited way—there was a time when the creature did not exist, and there will come a time when the creature will no longer exist—the creature cannot be said to exist *as* Being Itself; rather, the creature exists only by participation in it.

Speaking Rightly of God

If the discussion just concluded demonstrates anything, it shows that the limits of human language and concepts make speaking about the mystery of God and the God-world relationship a challenge at best and risky at worst. As T. S. Eliot said, words often "strain, crack, and sometimes break under the burden" of speaking rightly about the incomprehensible mystery of God.[8] Nonetheless, knowledge of God and relationship with God is so significant to human experience that we are literally compelled to speak about God lest the source and end of existence be unacknowledged and unnamed. So while the mystery of God need not leave us speechless, it must make us cautious because no creaturely word or concept, bounded as they are by time and space, can ever fully express the nature, existence, or attributes of God. No matter how fitting it seems, the speech of finite humans inevitably falls short of the infinite Being of God. As Aquinas reminded in the *ST*,

> [No] name belongs to God in the same sense that it belongs to creatures; for instance, wisdom in creatures is a quality, but not in God. . . . When we apply wise to God, we do not mean to signify anything distinct from his essence or power or being. And thus when this term wise is applied to man, in some degree it circumscribes and comprehends the thing signified. . . . Hence, no name is predicated

8. T. S. Eliot, "Burnt Norton V," from *Four Quartets. Art of Europe*; available from *http://www.artofeurope.com*.

> univocally of God and creatures. Neither, on the other hand, are names applied to God and creatures in a purely equivocal sense. . . . Because if that were so, it follows that from creatures nothing at all could be known or demonstrated about God; for the reasoning would always be exposed to the fallacy of equivocation. Therefore it must be said that these names are said of God and creatures in an analogous sense, that is, according to proportion. For in analogies the idea is not, as it is in univocals, one and the same; yet it is not totally diverse as in equivocals; but the name which is thus used in a multiple sense signifies various proportions to some one thing.[9]

From this, one can see that, while contingent and partial, speech about God is truly appropriate. Here and in other places, Aquinas clearly maintains that one may apply names to God based on human experience[10] and form positive affirmations concerning God.[11] For, in the face of our human experience of this Mystery, nearer to us than we are to ourselves, it is far more misleading to say nothing about God than to humbly attempt to say something, however conditional and inadequate.

This way of understanding the mutual relation between God as Creator and the cosmos as creation is not just reserved to thirteenth-century thinkers like Aquinas. Karl Rahner, as previously noted, pointed out that, because the natural world shares in the Being of God, creation is able to mediate God's communication to us. Furthermore, this analogy of being enables us to express an understanding of God in words and images drawn from the natural world despite the fact that God exceeds anything that we can say or imagine. In so doing, Christians acknowledge that God does not exist in isolated splendor, but in relationship to a cosmos dependent on God for its existence and sustenance. The cosmos speaks eloquently of its Creator—each creature a unique channel of God's self-communication to people of faith.

---

9. Aquinas, *ST*, Ia. 13, a. 5, 64.

10. Ibid., Ia. 13, 3, 62.

11. Ibid., Ia. 13, 12, 7–72.

Theology and Science in Dialogue

In the last century, this belief has received a new dynamism in the dialogue between Christian theology and evolutionary science. This dialogue, however, has not always proceeded smoothly. For many, Sir Francis Bacon's counsel in his 1605 commentary on the human search for the meaning of existence holds true: "Let no [persons] . . . think or maintain, that [they] can search too far or be too well studied in the book of God's word or in the book of God's works . . . only let [them] beware . . . that they do not unwisely mingle or confound these learnings together."[12] While Copernicus' discovery that the sun—not Earth—was the center of the universe changed the way humans understood their place in the universe and the writings of Charles Darwin radically challenged traditional ideas of how life began and develops on our planet, these revolutions in thinking have more often provoked contention rather than cooperation between the two disciplines. Science is accused of being a threat to the biblical and religious traditions. Theology is considered irrelevant to the scientific world of observation, measurement, and prediction. Even in the twenty-first century, the majority of scientists and theologians continue to insist that the two areas of study remain totally separate. This insistence on separation stems from several preconceptions.

Points of Difference

First, many insist upon the separation between theology and science because each allegedly concerns its own distinct realm. Science concerns itself with finite, observable reality, while theology concerns itself with infinite, unfathomable reality. Second, each supposedly serves and is defined by its own objects of study. Science studies natural being and phenomena, while theology focuses on supernatural being and phenomena. Third, each presumably strives for different ends. Science probes the realm of the natural world with a goal of prediction and control. Theology probes the realm beyond the natural order with the goal of personal commitment and moral purpose. Fourth and finally, each characteristically employs its own language system and vocabulary, which hinders communication.

12. Sir Francis Bacon in Arthur R. Peacocke, "Rethinking Religious Faith in a World of Science," in *Religion. Science and Public Policy*, ed. Frank T. Birtel (New York: Crossroad, 1987), 3–29 at 4.

Points of Commonality

There are, nevertheless, a growing number of scholars in both theology and science who point out the shortsightedness of this separation and instead emphasize the need for both Christian theology and science to reevaluate and reinterpret their ways of thinking by taking into account the insights and observations of the other. While the differences between the disciplines seem insurmountable, these scholars contend that if one delves beneath the apparent differences, several commonalities between theology and science come to light that make dialogue not only possible but also, in fact, indispensable.

First, both theology and science actually base their claims on what their participants experience and observe in the world. They do this by figuring out the underlying reasons and relationships that seem to produce what they experience and observe. For example, theologian Thomas Aquinas observed phenomena in the natural world that exhibited relationships of cause and effect, such as a hammer driving a nail or a fire burning wood. He noticed that creatures shared natural attributes, such as color or shape or size, but did so in different amounts or to different degrees. He witnessed decay and death in a world of change, yet experienced regularities in nature and saw life constantly sustained and renewed. Based on these observations, Aquinas reasoned that there must be a First Cause on which all other causes depend. He deduced that the varying amounts and degrees of attributes must point to an Ultimate Reality that possesses the fullness of such attributes. He inferred that the transient, yet enduring being of the natural world must depend for its existence upon a Necessary Being who did not change or pass away. He compiled these and other arguments in his *Summa Theologiae* to attempt to answer the question of whether God exists. In each case, Aquinas concluded that the First Cause, Ultimate Reality, and Necessary Being are what "everyone understands to be God."[13]

In a manner not unlike that of Aquinas, English naturalist Charles Darwin used his powers of observation and experience to reason out his proposals about the origin and development of life. He brought these observations and conclusions together eloquently in the final paragraph of his most noted work *On the Origin of Species*

13. Aquinas, *ST*, I.2.3.

by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life.

> It is interesting to contemplate an entangled bank, clothed with many plants of many kinds, with birds singing on the bushes, with various insects flitting about, and with worms crawling through the damp earth, and to reflect that these elaborately constructed forms, so different from each other, and dependent on each other in so complex a manner, have all been produced by laws acting around us. These laws, taken in the largest sense, being Growth with Reproduction; Inheritance which is almost implied by reproduction; Variability from the indirect and direct action of the external conditions of life, and from use and disuse; a Ratio of Increase so high as to lead to a Struggle for Life, and as a consequence to Natural Selection, entailing Divergence of Character and the Extinction of less-improved forms. . . . There is grandeur in this view of life, with its several powers, having been originally breathed into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved.[14]

Beyond their common source material, a second commonality between science and theology is that each claims to speak about and deal with what is real. However, neither theology nor science speaks in a literal way, as if there is a one-to-one correspondence between the words they use and the realities they address. Yet, for each there is *some* correspondence between their words and reality that communicates what they have seen and experienced as accurately as possible. When scientists, for example, speak about the brain, they often use the model of a computer to describe the way the brain works. They employ terms such as *input*, *output*, *information processing*, and even *wired* as ways of speaking about brain function without meaning that

14. Charles Darwin, *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life* (London: John Murray, 1859), 489–90.

an inspection of the brain would reveal circuitry and memory cards. Theologians also use figurative language when they refer to Jesus as the *Word* or *Lamb* of God, when they speak about the members of the Trinity as *persons*, or when they represent the Creator as *Father*.

Simply because this language is figurative, however, does not mean that it has no basis in reality. As Ian Barbour wrote, although a model, a metaphor, or an analogy is not a literal picture of reality, neither is it simply "useful fiction." Models, metaphors, and analogies are "partial and inadequate ways of imagining what is not observable. They are symbolic representations, for particular purposes, of aspects of reality which are not directly accessible to us."[15] Arthur Peacocke agrees: "Not only does a good model allow logical inferences to be made about possible phenomena . . . but it functions . . . by throwing light forward . . . into new areas of investigation."[16]

It is important to realize that neither Barbour nor Peacocke is talking about the methods of science or theology. Rather, they are speaking about the nature of the language that both theology and science use. An example from science is the way that scientists refer to the theory of the origin of the universe as the Big Bang. Information about these original events came through experiments in chemistry and physics through which data were observed, collected, and interpreted within the scientific worldview. Then, because these events were "aspects of reality which are not directly accessible," events that, obviously, no one had observed directly, scientists extrapolated from this interpreted data a theory about the origin of the universe. When it came to naming this theoretical event, scientists chose a term that gave others a way of "imagining what is not observable"—a *Big Bang*. While by no means intended to be literal, this term enables scientists to communicate the spontaneous, explosive, and dramatic event through which the elements of a nascent cosmos were strewn throughout the vacuum that preexisted what we now understand as "space." Moreover, it does not stretch the point to suggest that a similar dynamic was in play in theology. As ancient religious writers composed the biblical narratives of creation, they

15. Ian A. Barbour, *Myths, Models and Paradigms* (London: SCM, 1974), 69.

16. Arthur R. Peacocke, *Theology for a Scientific Age: Being and Becoming—Natural, Divine, and Human* (Minneapolis: Augsburg Fortress, 1993), 31.

based their images and language on their worldview, experience, observation, and interpretation of God and the God-world relationship extrapolated backward.

Hence, whether in science or in theology, the use of such figurative language helps to illuminate critically important aspects of the natural world and of the faith tradition. Without it, neither theology nor science would be able to articulate the meanings and relationships beneath its observations in terms that are understandable and useful for further exploration. In addition, recognizing the figurative nature of theological and scientific language helps to safeguard against literal interpretations. Furthermore, it invites us to expand the models we use and to devise new ways of speaking about God and the God-world relationship. The most important thing to keep in mind is that although such speech expresses profound truth, it is nonetheless limited. It is, as Buddhist Patriarch Huineng reminds us, like a finger pointing to the moon:

> Truth has nothing to do with words. Truth can be likened to the bright moon in the sky. Words, in this case, can be likened to a finger. The finger can point to the moon's location. However, the finger is not the moon. To look at the moon, it is necessary to gaze beyond the finger, right?[17]

These insights point to a third characteristic that theology and science have in common, one that we have met before when talking about the nature of God. That common feature is *mystery*. Mystery truly surrounds and pervades both theology and science. Whether it tries to fathom the wonders of nature or the nature of God, the human mind is, after all, limited. The insights it grasps, the thoughts it formulates, and the language it uses can only know and express what it has been able to experience and observe. The rest depends upon speculation—such as the event of the Big Bang and the Genesis account of the seven days of creation. However, this mystery need not leave us speechless. While the language of theology and science is like "a finger pointing to the moon," it does not call for silence but for humility. This humility comes from the fact that, while all reality

17. "Finger Pointing at the Moon," *Stories of Wisdom*; available from *http://www.storiesofwisdom.com/finger-pointing-at-the-moon/*.

is deeply a mystery, reality is continuously communicating itself to us, and thus, it is infinitely knowable. As theologian Sallie McFague wrote, the ways in which theology and science express themselves are like "'houses' to live in for a while, with windows partly open and doors ajar."[18] When a theological or scientific statement "houses" us with hospitality and without restriction, it becomes an acceptable way of speaking about God or about the natural world. However, no statement is ever beyond revision.

Mutually Illuminative Interaction

How might these commonalities between theology and science lead to dialogue and yet preserve the unique character of both theology and science? One way is to look at the relationship between theology and science as one of "mutually illuminative interaction." In this kind of relationship, each area of study illuminates the other. Science illuminates the mysteries of creation. By doing so, science can deepen and expand what creation reveals about its Creator. Theology, on the other hand, illuminates the meanings and purposes that lie beyond the scope of scientific exploration. Such mutually illuminative interaction can produce a paradigm that guides Christian speech about God in an evolutionary cosmos.

In his approach through evolution to the theology of God, twentieth-century scientist and theologian Arthur Peacocke set forth four principles to guide human knowledge and language of God based on the natural world as observed by evolutionary science. First, Peacocke affirmed belief in God as Creator of the cosmos. Second, he maintained, like Aquinas, that if God is the Creator of the cosmos, then the cosmos as creation can reveal the nature and characteristics of its Creator. Peacocke took this idea a step further than Aquinas, however, based on the limits of human imagination and the limitless nature of God. Peacocke proposed that, third, one can *only* speak rightly about God as God is experienced in relation to the cosmos and its creatures, rather than in speculative terms or metaphysical concepts. Therefore, fourth and finally, one must use analogies, metaphors, and models rooted in the analogy of being

18. Sallie McFague, *Models of God: Theology for an Ecological, Nuclear Age* (Philadelphia: Fortress 1988), 27.

between Creator and creation to speak about the incomprehensible mystery of God.

God in an Evolving Cosmos

We can now return to our original question: What is it about an evolutionary worldview—one which includes a recognition of the age and size of the evolving universe, the complexity and diversity of life on the planet, the inherent creativity of the cosmos, the interplay of law and chance in the development of life forms, and the inevitability of death and the emergence of life—that might enable us to see and speak in new ways about God's interactions with the world? A simple response holds that evolutionary theory has enabled us to see and understand the cosmos in significantly different ways than the worldview that produced traditional conceptions of the God-world relationship. Because we derive our knowledge and speech about the Infinite Reality of God from our knowledge and speech about the finite reality of the cosmos and its creatures, then the new insights and vocabulary that spring from the evolutionary paradigm of creation not only permit but urge Christians to be open to new ways of thinking and speaking about God and God-world relationships. They do so in the spirit of the invitation God offered to Isaiah: "See, I am doing something new! Now it springs forth, do you not perceive it?" (Isaiah 43:19) And because, as Aquinas affirmed, "from every effect the existence of its proper cause can be demonstrated," the new perception of the entities, structures, and processes of the cosmos that springs from an evolutionary understanding invites us see anew the living God in the intimate relations of creation, incarnation, and grace revealed in the evolving cosmos.

As we see in the chapters that follow, a wide variety of scientific disciplines in dialogue with the wisdom of Judaism and of the rich and diverse traditions within Christianity affirm that the nature of this cosmos, its creatures, and its Creator is *essentially* relational, *intimately* relational. Moreover, the relations existing within and between the entities of an evolving cosmos and within and between its creatures ultimately reflect relations within the living God and between the living God and the cosmos—relations traditionally termed *creation*, *incarnation*, and *grace*.

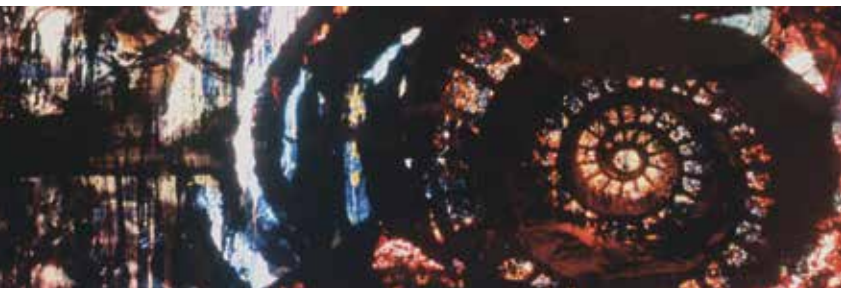
Introduction to

PART I

The first part of this book sets forth the concept of relational ontology, the philosophical study of the nature of being as constituted by essential relations. It examines the way this concept realizes itself in cosmic, human, and divine being through relations of origin, effect, and emergence. By design, the chapters on the cosmos and the human person focus primarily on philosophy and on the natural, physical, behavioral, and social sciences to substantiate claims about the relational nature of all reality. In doing so, these chapters resist the temptation to speak from a theological perspective in order to source their claims in a broader spectrum of disciplines and, thus, enlarge their relevance and base of support for readers not rooted in the Christian tradition. With chapter 4, on divine being, however, the line of thought takes a decided turn toward the theological and continues on that line throughout the remainder of the text. Concepts from these early chapters on cosmic, human, and divine being return in dialogue with Christian theologies and doctrines to examine ways in which the Triune Christian God interacts with the cosmos and its creatures in an evolutionary world. As a result, relations between and among

cosmic, human, and divine beings find expression in perhaps new and surprising ways that deepen and amplify the reality—and the mystery—of relation within and among all being, relations that the Christian tradition terms *creation*, *incarnation*, and *grace*.

Chapter 1



TO BE IS TO BE-IN-RELATION

INTRODUCTION

In a famous Shakespearean soliloquy, Hamlet, prince of Denmark, broods over his continuing existence:

> To be, or not to be: that is the question:
> Whether 'tis nobler in the mind to suffer
> The slings and arrows of outrageous fortune,
> Or to take arms against a sea of troubles,
> And by opposing end them?
> . . . . . .
> To grunt and sweat under a weary life,
> But that the dread of something after death,
> The undiscover'd country from whose bourn
> No traveller returns, puzzles the will
> And makes us rather bear those ills we have
> Than fly to others that we know not of?[1]

1. "The Soliloquy in Hamlet" by William Shakespeare; available from *http://www.friesian.com/notes/hamlet.htm*.

But even those who have not reached the brink of melancholy over which Hamlet peers still puzzle over the essential questions of what it means "to be" in the face of "the slings and arrows of outrageous fortune" or the "grunt and sweat" of life or "the dread of something after death." We ponder: "Why is there something rather than nothing? Why am I here? What is my purpose? Where have we come from, and where are we going? What does it mean 'to be'?" These questions about the meaning and purpose of life simmer subconsciously in the minds and hearts of humans. Now and then, these existential questions churn and bubble up into consciousness at critical junctures that require decision or direction. Conscious or not, they nonetheless shade and contour the ways in which we see the being within and around us and, for believers, the Being beneath and beyond us.

This first chapter explores the question of being, the issue of what constitutes reality, and the ways in which being and reality have been studied, understood, and described in the philosophical and, by extension, theological traditions. It investigates the nature of being through the branch of philosophy known as ontology and examines philosophy's traditional accounts of what constitutes the nature of reality.

These accounts, classically constructed by Aristotle in his *Categories* and *Metaphysics* and by Plato in his *Phaedo*, have exerted tremendous influence in the centuries since their formulation. Nonetheless, as this chapter reveals, the descriptions and classifications of the reality of being offered by these thinkers have limitations. Ontology reflects the level of knowledge and worldview of a given period in history; thus, each ontological proposal must be evaluated to see if it stands the test of time. Are the ontological systems of Aristotle and Plato—and those thinkers who follow their leads—adequate for *this* time in history? Are traditional accounts of what constitutes the reality of being consonant with an evolutionary worldview in which the reality of the cosmos is understood not as static in being but as dynamic in becoming? Are these accounts consistent with the insights of quantum physics that have raised questions about what constitutes the nature and reality of being at the subatomic level?

This chapter further inquires whether the accounts offered by Plato and Aristotle adequately address the anthropological, psychological, and sociological perspectives on human being that emphasize the impact of family, society, and culture on the development of

human persons. Finally, the chapter questions whether these philosophical accounts present a theologically valid and morally acceptable conception of the Divine consistent with God as Trinity and responsive to a suffering world. A theology for *this* time in history must take into consideration all the data and interpretations that the Christian tradition and the natural and social sciences have to offer today—even as philosophy and theology did in the time of Plato and Aristotle—if it is to speak credibly about the nature and reality of natural, human, and divine being and about the ways in which the cosmos, the human, and the Divine relate and interact.

BEING AND REALITY

Questions about the nature and constitution of reality have been studied in several academic disciplines, including the natural sciences, the social sciences, theology, and philosophy. Philosophy, in particular, has wrestled for centuries over the meaning of *reality* and "being *qua* being" (being *as* being), in the words of Aristotle, in the philosophical discipline known as *metaphysics.* Literally, the term *metaphysics* means, "beyond or outside of the physical" and refers to "a division of philosophy that is concerned with the fundamental nature of reality and being and that includes ontology, cosmology [the study of the origins of the universe], and often epistemology [the study of the nature of knowledge and how it is acquired]."[2] According to professor of philosophy Michael J. Loux, who is well known for his writing on metaphysics,

> What is distinctive about metaphysics is the way in which it examines those objects; it examines them from a particular perspective, from the perspective of their being beings or things that exist. So metaphysics considers things as beings or as existents and attempts to specify the properties or features they exhibit just insofar as they are beings or existents.[3]

2. "Metaphysics," *Merriam-Webster Online Dictionary* 2009; available from *http://www.merriam-webster.com/dictionary/metaphysics*.

3. Michael J. Loux, *Metaphysics. A Contemporary Introduction* (New York: Routledge, 2006), 3.

Moreover, as a study of beings or existents, metaphysics is also concerned with "first causes" of the creative processes, structures, and entities of the cosmos. Hence, the scope of metaphysics extends beyond natural or human being and reality to explore the very being and reality of God.

Closely related to metaphysics—and contained in its very definition—is the subject of ontology, the branch of metaphysics concerned with the nature of being. Described by Nicolai Hartmann, "ontology has to do with fundamental assertions about being as such . . . [that] we call categories of being."[4] Moreover, because it concerns the essential nature of everything that exists, the study of ontology does not exist as an independent branch of study but exists in dialogue with other means by which humans understand their reality. However, as discussed previously, because we understand reality within a particular worldview, "Ontology [too] mirrors . . . the level of our knowledge of the world at any given time."[5]

Hartmann's claim that ontology mirrors our worldview is demonstrated in the divergent viewpoints of two of the most noted philosophers in history, Plato and Aristotle. A student of Socrates and teacher of Aristotle, Plato (429–347 BCE) is arguably one of the most influential thinkers and writers in the history of philosophy. His philosophical thought was deeply shaped by both the political events and intellectual movements of his time, and his works, such as the *Republic* and *Phaedo*, remain influential to this day. In response to the question of what constitutes the being of the cosmos, Plato surmised that the general structures of the world derived from an ideal world of Forms or Ideas. Existing in the perfect realm of the mind, the Form or Idea of an entity is an abstract, eternal, and changeless paradigm of the objects and structures that exist only imperfectly in the world of experience. For Plato, it is the abstract Form or Idea that is the *really* real, not the object perceived by the senses, which is limited by time and space and is, therefore, defective. In his thinking, "the world was essentially intelligible, and so it must be the intellect and not the senses that had the ultimate 'vision' of this true being. The intellect

4. Nicolai Hartmann, *New Ways of Ontology*, trans. Reinhard C. Kuhn (Chicago: Henry Regnery, 1953), 13–14.

5. Raul Corazzon "Introduction," *Birth of a New Science: The History of Ontology from Suarez to Kant*; available from *http://www.ontology-2.com/history.htm*.

had to use the information of the senses to read what was behind, and beyond, sensation. . . . The forms that objects had here below were, therefore, imperfect cases of the perfect case or form that exists in the other intellectual realm."[6] Hence, in the quest to determine what constitutes reality or what best represents the essential nature of reality, Plato does not begin his journey in the experiential realm of tangible existence, but in the intellectual world of ideal Forms.

In response to the same question, however, Plato's student Aristotle came to a different conclusion. Like his teacher, Aristotle (384–322 BCE) made a profound impact on Western thought and wrote on such varied topics as logic, morality, aesthetics, science, and politics, as well as philosophy and metaphysics. Nevertheless, unlike his teacher, when Aristotle considered the nature of reality, he rejected Plato's theory of intellectual forms and asserted that the nature of being could only be identified through sense experience and knowledge of the world. Real being for Aristotle is not in the abstract form, but rather in the concrete individual thing; it is not in the universal concept, but rather in the particular object perceived by the senses. Therefore, in his quest to determine what constitutes reality or what best represents the essential nature of reality, Aristotle emphasized empirical observation and sense perception, rather than focusing on the realm of the intellect. Nevertheless, despite their different starting points and their different conclusions as to what is "the *really* real," both Plato and Aristotle referred to "substance" as what constitutes reality.

ONTOLOGY OF SUBSTANCE

While Plato, Aristotle, and their contemporaries commonly used the term *substance* in their philosophical analysis, it was Aristotle's account of substance that held influence for centuries after him.[7] For

6. Stephen Mc Grogan, "Plato's Theories of Forms," *Metaphysics*; available from *http://metaphysics.suite101.com/article.cfm/platos_theory_of_the_forms*.

7. The understanding of *substance* in philosophy has gone through many metamorphoses in the centuries since Aristotle. For some helpful overviews, see "Substance," *The Catholic Encyclopedia*; available at *http://www.catholic.org/encyclopedia/view.php?id=11137* or "Substance," *Stanford Encyclopedia of Philosophy*; available from *http://plato.stanford.edu/entries/substance/*.

this reason, his explanation serves as the basis for understanding the term in this text.

Definition of Substance

Because of his starting point in empirical reality, Aristotle first uses the term *substance* to refer to a particular individual or to a particular thing.[8] As such, "'substances' are the things which exist in their own right."[9] Aristotle named such individual entities "primary substances." Moreover, these primary substances can have particular qualities attributed to them, such as color or size. These qualities are said to be predicated of particular individuals, but in themselves are general terms. In Aristotle's schema, they "are said to be 'present in' primary substances, that is, they cannot exist independently or apart from individuals."[10] For example, this book is a primary substance called *Trinity in Relation.* Beyond that, qualities such as thick or thin, large or small, clear or confusing, costly or inexpensive can be predicated of it. Nonetheless, these qualities have no existence unless realized in a particular thing or individual. Aristotle called these qualities present in primary substances "accidents." The accidents predicated of a primary substance both distinguish one primary substance from another and classify it with another. Hence, the Granny Smith apple and the Macoun apple on a counter in a kitchen are each a primary substance. On the one hand, the Granny Smith has the qualities of green, hard, and tart, whereas the Macoun has the qualities of red, juicy, and sweet. These qualities, or predicates, differentiate the two primary substances from each other. Nonetheless, both of these primary substances are apples and, thus, can be classified with each other. In this way, qualities, or predicates, can identify both differences and similarities among various primary substances.

This example leads to another of Aristotle's central ideas about the nature of reality. As we have seen, qualities not only distinguish primary substances; they also classify them into *kinds* of substances.

8. Diogenes Allen and Eric O. Springsted, *Philosophy for Understanding Theology* (Louisville, KY: Westminster John Knox Press, 2007), 65.

9. "Substance," in *Routledge Encyclopedia of Philosophy*, ed. Edward Craig (London, Routledge, 1998), 205.

10. Allen and Springsted, *Philosophy*, 65.

Despite their differences, Granny Smith and Macoun share something essential between them; they are both *kinds* of apples. Hence, *apple* can be predicated of both of these primary substances and indicates to what group of substance each belongs. One can think of this in terms of the taxonomy used in the sciences to classify plants and animals according to their presumed relationships. In a scientific taxonomy, classifications move from the more general categories of domain, kingdom, and phylum to the more precise categories of genus and species. In a similar fashion, Aristotle recognized that primary substances could be classified through successive levels of specificity, from species to genus and beyond. These classifications of substances Aristotle termed *secondary substances*.

Returning to the apple, previously considered, we could differentiate the secondary substance or classification of species into *Malus domestica*, like the domestic Granny Smith and Macoun, or the *Malus sieversii*, their wild ancestor found in Central Asia. Despite the difference in their secondary substance or classification at the level of species, they share secondary substances or classifications higher in the taxonomy: kingdom Plantae, division Magnoliophyta, class Magnoliopsida, order Rosales, family Rosaceae, subfamily Maloideae or Spiraeoideae, tribe Maleae, and genus *Malus*. Furthermore, their unique product names—Granny Smith and Macoun—constitute another kind of secondary substance or classification.

What is important to remember in this discussion is that the meaning of substance in philosophical usage is not the same as the meaning of substance in general usage. In general usage, a substance is the physical matter of which a person or thing exists. Its substance is an aspect or a quality of a larger more complete whole. A statue is a statue whether its substance is concrete or marble. A chair is a chair whether its substance is plastic or wood. It follows then that a substance is not specific or unique to a particular person or thing. All kinds of things are made of comparable substances. Wood is a substance that we use to make tables and chairs. Plastic is a substance that we use to make spaceships and picnic utensils. Thus, in general use, substance does not indicate anyone or anything in particular. In philosophical usage, however, the word *substance* has a particularity to it. As a primary substance, it refers to a particular individual or

to a particular thing. As a secondary substance, it refers to specific attributes that characterize that particular individual or thing. The following quote effectively summarizes the preceding discussion and bears citing at length:

> The most important things we predicate of an individual . . . are its genus and species. They give us its essence; they tell us *what* the individual is; they tell us the *kind* of being it is. . . . The other things we predicate of a primary substance do not tell us the *kind* of thing it is. So there are two types of predicates: those that tell us the kind of thing that each individual thing is and those that do not. Secondary substances tell us what a substance is *essentially*; the other predicates tell us what it is *accidentally*. . . . [Thus] we have a major division between substance and accidents (between individuals and what is present in them). We have a distinction between substances themselves: individual substances (primary substances) and *kinds* of substances (secondary substances). Genera and species . . . and accidents are predicated of primary substances. But only genera and species give us what is essential to a primary substance, that is, tell us what a primary substance *must* have in order to be that particular kind of reality.[11]

In *Categories*, one of his earlier writings, Aristotle enumerates ten categories that weave throughout his discussion of substance and accident. The first of these categories is substance and includes both primary and secondary substances. The other nine categories represent logical groupings of the general qualities that can be predicated of substances. These categories are quantity, quality, relation, place, time, posture, possession, action, and being acted upon. Applied to our Granny Smith apple, one could say "The Granny Smith apple was large, green, next to the Macoun apple, on the countertop, at lunchtime, on its side, with a split skin, leaking juice, and sliced for a pie." One might ask, however, whether this description—in terms of primary substance, secondary substance, and accidents—reveals anything more than a sense perception of the apple and leaves open

11. Ibid., 66.

the question of its essential reality. If it does, at least, give a sense perception of the apple—or the person, the tree, the mountain, or the cat—it has met Aristotle's understanding of what constitutes "the real." Nonetheless, does more than what is perceived through the senses not constitute reality—natural, human, and divine? Furthermore, how does sense perception assist in knowing the reality of what is immaterial or spiritual, hence, the reality of God?

Duality of Substance

Beyond the notions of substance and accidents, philosophy and theology have further sought to characterize the nature of reality in still more encompassing categories. One such characterization attempted to classify kinds of reality into broad and dichotomous categories that resulted in a variety of arrangements called "dualisms." The term *dualism* is a wide-ranging designation that has had a variety of applications in the history of thought. Its references include mind-body dualism, epistemological dualism, metaphysical or ontological dualism, ethical dualism, and religious dualism, to name but a few. In general, dualism points to the theory or belief that "for some particular domain, there are two fundamental kinds or categories of things or principles."[12] Hence, as noted previously, dualisms are usually expressed in terms of oppositions: good or evil, mind or body, supernatural or natural, spirit or flesh, light or darkness, and the like. This section focuses on metaphysical or ontological dualism, described as a "philosophical system positing two basic non-reducible substances, typically matter (or body) and spirit (or soul)."[13] This is to say that the fundamental essence of any reality is either material in nature or spiritual in nature and never a combination of the two. The history of dualism in philosophical thought stretches from before the time of Socrates (469–399 BCE) to the present, with a particular ascendancy in the writing of René Descartes (1596–1650 CE). More than one hundred years before the time of Plato, philosophers such as Anaximander, Heracleitus, Empedocles, and Anaxagoras claimed

12. Howard Robinson, "Dualism," *Stanford Encyclopedia of Philosophy* (October 10, 2007); available from *http://plato.stanford.edu/entries/dualism/*.

13. "Dualism—Challenges to Dualism, Bibliography," *Science Encyclopedia: The History of Ideas, Vol. 2*; available from *http://science.jrank.org/pages/7636/Dualism.html*.

the existence of opposed natural substances that played a role in the development of the world. However, Plato can be credited with a classical formulation in his metaphysics of an ideal world of Forms.

In Plato's *Phaedo*, a dialogue between the characters identified as "Socrates" and "Cebes" represent Plato's reasoning about "Being in itself" as opposed to "the many beautiful things" perceived by the senses. Socrates proposes the following:

> The Being in itself which in our questions and answers we characterise as real existence—is that always in the same state and with the same aspect, or different at different times? Absolute equality, absolute beauty, absolute every thing which is—do these ever admit change of any kind whatever? Or does each of them of which we predicate real existence, uniform in its pure simplicity, constantly preserve the same aspect and condition and never in any way on any occasion whatever admit any variation? . . . But what of the many beautiful things, men for instance, or horses, or clothes, or any other whatever of the same kind . . . or all that bear the same name with the ideas? Are they permanent in their condition? Or just the reverse of the others, do they never . . . at all preserve any constancy, either in themselves or in their relations to one another? . . . Then let us assume . . . two kinds of existing things, one visible and the other invisible. . . . And the invisible constant and immutable, but the visible subject to perpetual change.[14]

For Plato, the real and true substances are the eternal Forms of "Being itself" and sense objects are merely deficient representations of them. Moreover, the Forms are unchangeable universals, while their copies are no more than passing reflections.

Despite the influence of Plato's metaphysical dualism, some aspects of his thinking have been opposed by noted philosophers. Aristotle did not accept Plato's dualism that Forms exist independently of their expression in individual entities. However, even with Aristotle's emphasis on the material nature of reality, he still believed

14. Plato, *Phaedo*, trans. E. M. Cope (Cambridge, MA: Harvard University Press, 1875), 41–42.

that the intellect within a material person must itself be immaterial. He reasoned that if the intellect itself were material in substance like the body that it inhabits, it could not grasp anything that was immaterial, such as concepts, ideas, or abstractions.[15] Building on Aristotelian thought, Thomas Aquinas distinguished between the soul of the human person—which, like Aristotle, he considered the "form"—and the person him- or herself. For Aquinas, the "soul" was only the "person" when united with the body, as the body was the carrier of the sense images that contribute to the wholeness of human "personhood."[16] Immanuel Kant denied that humans possessed the capacity to know "the thing-in-itself" or the "noumenon." Humans can only know the conscious experience of the thing-in-itself or the "phenomenon."[17]

This discussion of ontological dualism would be incomplete, however, without reference to the dichotomy of matter and spirit proposed by seventeenth-century philosopher René Descartes. "Cartesian dualism," as it is called, has spawned countless interpretations, responses, refutations, and defenses in the centuries since he expounded his theories.[18] In Descartes' own words, "I recognize only two ultimate classes of things: first, intellectual or thinking things, i.e. those which pertain to mind or thinking substance; and, secondly, material things, i.e. those which pertain to extended substance or body."[19] He arrived at this recognition after searching for an absolute certainty upon which to base his further quest for knowledge. The one certainty he found indisputable is expressed in his famous statement, "*Cogito ergo sum*," which means, "I think therefore I am."

Through his search for absolute certainty, Descartes arrives at the indisputable fact that he is a thinking being. The reality of his body could be doubted, but not the reality of his mind. From this,

15. Aristotle, *De Anima* III, 4; available from *http://classics.mit.edu/Aristotle/soul.3.iii.html*.

16. Robinson, "Dualism."

17. M. Alan Kazlev, "Dualism," *Kheper: Worldviews*; available from *http://www.kheper.net/topics/worldviews/dualism.htm*.

18. For a survey of and responses to such interpretations *and* misinterpretations, see Gordon P. Baker and Katherine J. Morris, *Descartes' Dualism* (New York: Routledge, 2002).

19. René Descartes, *Principles* I.48, in *The Philosophical Writings of Descartes: Vol. 1*, trans. John Cottingham, Robert Stoothoff, and Dugald Murdoch (Cambridge: Cambridge University Press, 1986), 208.

Descartes concluded that the mind and body were separate entities. The mind was a "thinking thing" and an immaterial substance, whereas the body was a nonthinking thing and a material substance. Such "substance dualism" suggested to him that the mind can exist apart from the body, and it reinforced the Platonic notion that the soul, as immortal, occupies a realm of existence distinct from that of the physical world, as, by extension, does God.

Consequences of Substance Ontology

The propositions of substance ontology with the ontological dualisms that often accompany them have had far-ranging consequences in the disciplines of cosmology, anthropology, and theology. While some propositions have benefited the aims of these disciplines, others have been problematic in the light of contemporary understandings of the cosmos, the human person, and the Christian God.

The Problem of Stasis

Plato's theory of Forms and Aristotle's empirical approach present lucid arguments for affirming the reality of both material and immaterial being. Nonetheless, their substance ontology implies that cosmic and human beings are static entities whose essence and identity do not change over time, because in substance ontology what constitutes a person or thing is a particular nature with more or less stable attributes. If you consider the apples that have journeyed with us through this chapter, the attributes of the apple such as large, red, crisp, and sweet are of no enduring significance for its identity, so to speak. Comparing it to an apple that is small, green, hard, and tart is irrelevant in substance ontology for which an apple is an apple is an apple! Hence, even if the attributes of a being change, whether that being is a person or thing, the characteristics that common sense suggests make individuals distinct from each other have no impact. Regardless of the attributes, the identities of beings categorized as similar in substance are indistinguishable from one another ontologically. As the upcoming chapters clearly demonstrate, however, the evolutionary and social sciences view life forms as dynamic, as beings in the process of becoming over time. The attributes they develop or discard have bearing on the reality of the person or thing in question. The size, shape, color, and weight of an object, as well as the ethnicity, race, height, and location of a

person constitute in large measure the reality of an individual over time. When this idea of stasis extends to the Divine, as both Plato and Aristotle have done, the Being of God is conceived in terms of immutability (inability to change) and impassibility (inability to be moved or affected). This is clearly inconsistent with the biblical tradition of the living God who is experienced in dynamic, personal, and passionate relationship with creation and its creatures.

The Problem of Self-Sufficiency

In a famous meditation in his work *Devotions upon Emergent Occasions*, poet John Donne reflected, "No man is an island, entire of itself; every man is a piece of the continent, a part of the main. . . . Any man's death diminishes me, because I am involved in mankind; and therefore never send to know for whom the bell tolls; it tolls for thee."[20] In this quote, Donne maintained that neither humans nor any other life form exists in splendid isolation from others, but in integral, effective relationship. Neither humans nor any other life form, therefore, is sufficient unto itself, needing nor desiring any other.

Nevertheless, "the traditional study of ontology has been dominated by the concept of 'substance' which embodies such notions as self-subsistence, self-maintenance, [and] unchanging presence as an independent self."[21] Thus, within their conceptions of substance ontology, Plato viewed the individual as simply a passing instance of a universal, and Aristotle considered the individual as an independent entity with particular qualities. Interaction and relationship with other cosmic, human, or divine beings were not only unnecessary but also, if occurring, were patently ineffective. Autonomy and independence were the rule, and the more autonomous and independent an individual proved to be, the more valued and perfected is that individual. In contrast to this unbridled autonomy, however, contemporary cosmology, physics, psychology, sociology, and anthropology have consistently emphasized the critical roles of interdependence rather than independence, of interrelationship rather than self-sufficiency, and of dynamism rather than immutability as the reality of the cosmic and

20. John Donne, "Meditation XVII," *Devotions upon Emergent Occasions*; available from *http://isu.indstate.edu/ilnprof/ENG451/ISLAND/text.html*.

21. G. Douglas Pratt, "Being and God: An Ontological-Relational Approach to the Concept of God," 36–38, in *The Religious Dimension* (Auckland, New Zealand: Rep Prep, 1976), 37.

human. Hence, human being, as well as cosmic being, "is neither a self-sufficient . . . substance nor an autonomous individual . . . but a being . . . [which] lives . . . only in I-Thou-We relations."[22]

Philosophers applied this attribute of self-sufficiency, moreover, not only to cosmic and human beings but also to the Divine. When substance ontology is applied to the Divine, God is conceived as "an objective, metaphysical, self-existent Being."[23] This should not be surprising "because [if] independence and self-subsistence are the basic characters of substantial being, its perfect embodiment must be self-produced or unproduced, uncaused, uncreated."[24] Despite the many twists and turns in the historical course of theology, this philosophical conception of the Divine has endured, although not without its critics. A famous critique of this conception of the Divine came from Blaise Pascal (1623–1662) who contrasted the God of Abraham, Isaac, and Jacob—the God of the Bible—with the God of the philosophers like Plato and Aristotle. While some belie this contrast, the fundamental disparity is this:

> The [God of the philosophers] is allegedly only a human conception—a product of rational theologizing, with no explicit basis in biblical revelation. While the philosophers' God is variously conceived, it is usually said to be, among other things, absolutely unlimited in all respects, wholly other, absolutely simple, immaterial, nonspatial, nontemporal, immutable, and impassible. By way of contrast, the biblical record describes the God of Abraham, Isaac, and Jacob as "the living God" who created man in his "own image and likeness" (Genesis 1:26), who spoke with Moses "face to face, as a man speaketh unto his friend" (Exodus 33:11). He is the loving God who is profoundly "touched with the feeling of our infirmities" (Hebrews 4:15) and salvifically involved in our individual and collective lives.[25]

22. Walter Kasper, *The God of Jesus Christ*, trans. Matthew J. O'Connell (New York: Crossroad, 1984), 290.

23. J. A. T. Robinson, *Exploration into God* (London: SCM, 1967), 61.

24. Magda King, *Heidegger's Philosophy* (Oxford: Basil Blackwell, 1964), 16.

25. David W. Paulsen, "The God of Abraham, Isaac, and (William) James," *The Journal of Speculative Philosophy* 13.2 (1999): 114–146, at 114.

Beyond these and other biblical warrants for questioning the philosophical self-sufficiency of God, several contemporary Christian theologians point to the core belief in God as Trinity. Such a pointing does not assert a God who lives as a solitary monad or unitary Being in a state of splendid isolation, but a God whose very essence and existence is characterized by relationship through which a diversity of Divine Persons exists as the unity of one God.

The Problem of Dualism

Indisputably the dualism in Platonic and Aristotelian metaphysics has preserved the ontological distinctions between substances of different orders and different species. Nonetheless, it has done so at the price of equality and at the cost of union.

The Price of Equality

At the time of Plato and Aristotle, people believed in a hierarchy of being with a corresponding hierarchy of value or of goodness. One of Plato's interpreters, Augustine of Hippo (354–430 CE), carried the notion forward into Christian theology. According to the hierarchy of being, "living beings are higher than nonliving, while within the category of the living, sentient beings are higher than non-sentient, rational higher than nonrational, and so on through the order of natural beings, and up the scale to god in Augustine's version. So far as the order of nature is concerned, humans are at the apex of the hierarchy."[26]

This perspective, with some assistance from the biblical creation stories, has contributed to the hierarchy of the human over the material world in which the nonhuman is subordinate to the human, serves the needs of the human, and has, therefore, only instrumental value to the human. Some suggest this hierarchical arrangement has contributed to the ecological crisis and the despoliation of the natural environment. Contemporary cosmology and evolutionary biology reject this anthropocentric perspective. Contemporary cosmology clearly tells a creation story in which the cosmos and its creatures share a common origin in an original singularity, a "primeval, unimaginably condensed

26. Ted Benton, "Realism about the Value of Nature?" in *Defending Objectivity: Essays in Honour of Andrew Collier*, edited by Margaret S. Archer and William Outhwaite (London: Routledge, 2004), 245, as it appears in the original.

mass of fundamental particles and energy," consisting of the most basic subatomic elements of matter-energy-space-time.[27] Not only does this common origin belie a substantial distinction between humans and the rest of the material world but also in tandem with evolutionary biology, it also implies an *inverse* hierarchy of being in which humans, the last to arrive on the scene, are critically dependent on the natural world for their sustenance and survival. Thus, the story of contemporary cosmology and evolutionary biology indicates that reality shares a common origin, a common nature, and an inherent relation and calls into question the ontological hierarchy based on substance.

The ontological hierarchy of the divine, human, and nonhuman also implies a dualism between spirit and matter. Though part of the natural world, humans occupy a higher place in the hierarchy of being not only because they are animate realities, as opposed to inanimate realities but also because humans are deemed to possess rationality, freedom, and a soul—that spiritual element within matter connecting them to the immaterial world of the supernatural. In addition to being immaterial, the soul is also considered to be immortal, destined to return after the death of the body to the spiritual realm from which it came.

While a material body and an immaterial soul clearly represent a dualism of substance, the union of body and soul is essential to what it means to be human. To explain how these two irreducible and opposite substances can nonetheless coexist in one being, adherents of substance ontology have proposed a variety of theories explaining how the spiritual soul and the material body are united. For Plato, the human was a sum of separate parts. For Augustine, the human was composed of a soul and body; but the soul was not the body, and the body was not the soul. Hence, no real union took place. Aristotle believed humans were composites of form and matter, which called into question the incorruptibility of the soul after the death of the body. Aquinas attempted to resolve the problem of soul-body dualism by proposing that the soul is the form and substance of the body and elevates the body to a spiritual existence.

The dualism between the mind and body has posed problems for human existence and has had other problematic effects. The

27. Arthur Peacocke, "Theology and Science Today," in *Cosmos and Creation: Science and Theology in Consonance*, ed. Ted Peters (Nashville, TN: Abingdon, 1989), 30.

problems stem from the fact that mind and body/matter and spirit are not only conceived dualistically but also interpreted hierarchically with the mind valued over the body and spirit valued over matter. This split leads to several negative consequences. First, it has been blamed for the denial and, in fact, denigration of the body. This view sees the body as the prison of the immaterial and infinite soul, which ceaselessly yearns for release. Hence, the body—its needs and well-being—has been subjected to indifference at best and abuse at worst, for the soul and its salvation are of primary importance. Such a viewpoint has mired countless people in oppression and suffering and left them seeking the world to come instead of rightfully demanding justice in the world here and now. Moreover, in patriarchal societies, the spirit/matter dualism has translated into a male/female dualism, which associates men with the spiritual, the rational, and the godly; and women with the natural, the nonrational, and the earthly. Like Earth and its resources, women were perceived as having only instrumental value to satisfy the needs of men, rather than sharing the intrinsic value born of the same substance, the same dignity, and the same potential as men.

Finally, the spirit/matter dualism has posed difficulties for conceiving how God might be present and active in the natural world, both human and nonhuman. According to substance ontology, when primary substances of the same order unite, they do not retain their original substances but become a new substance. For example, adding the substance tin to the substance copper makes bronze; adding the substance zinc to the substance copper results in brass. In the animal world, a cama is the offspring of a camel and llama; in the world of fruit, a grapple emerges from crossing a grape and apple. One often finds examples of this sort of hybridity in the natural world. These examples highlight the point that, in substance ontology, the union of two substances compromises the integrity of each of the original substances.

The Cost of Union

The issue becomes more complex, however, when one contemplates the possibilities for union of God with the world. The substance of God, as noted previously, is immaterial, eternal, simple, immutable, impassible, and necessary (not dependent on anything else for its origin or sustenance). On the contrary, the substance

of the natural world is material, temporal, compound, contingent, changeable, and able to be affected. Because of this substance dualism between God and the cosmos, philosophers have generally conceived of God's presence and action in the world through the two paradigms of transcendence and immanence. These paradigms, in turn, have been expressed in the beliefs of deism, theism, and pantheism.

The paradigm of transcendence asserts the ontological distinction between God and the world or between Creator and creation. Its extreme form is deism, the belief that God created a law-abiding universe that God then left to run on its own. It stresses the unequivocal transcendence of God and allows no interaction or involvement between God and the world. Christian theology has tended to moderate this extremism while still emphasizing divine transcendence. Thus, it has tended toward theism, the view that God is a personal and purposeful eternal being who principally transcends the world and yet acts immanently within it. In this paradigm, God interacts with the world through particular acts of special providence or miracles that counter the freedoms, the natural laws, or the natural processes that God put in place. These interventions are perceived as episodic or intermittent, which begs the question of whether God's power and providence toward creation happens only on occasion or is in fact an ever-present and ever-active relationship. Finally, although theism incorporates both the transcendent and immanent aspects of the divine nature, it contends in its classical form that while God affects and transforms the universe, the universe cannot affect God.[28]

---

28. As Aquinas indicates in his *ST*, "Since therefore God is outside the whole order of creation, and all creatures are ordered to Him, and not conversely, it is manifest that creatures are really related to God Himself; whereas in God there is no real relation to creatures, but a relation only in idea, inasmuch as creatures are referred to Him. Thus there is nothing to prevent these names which import relation to the creature from being predicated of God temporally, not by reason of any change in Him, but by reason of the change of the creature; as a column is on the right of an animal, without change in itself, but by change in the animal." (*ST*, Ia. 13. 7) And further, "Therefore there is no real relation in God to the creature; whereas in creatures there is a real relation to God; because creatures are contained under the divine order, and their very nature entails dependence on God." Thomas Aquinas, *ST*, Ia. 28. 1, trans. Fathers of the English Dominican Province; online ed. Kevin Knight; available from *www.newadvent.org/summa/*.

In contrast, the paradigm of immanence asserts that God as God is truly present in the created world. Its extreme form is pantheism, a belief that identifies God with the totality of nature, with the laws of nature, or as the world soul inherent in nature. In direct contrast to deism, pantheism stresses the immanence of God in the universe, a universe that God in no way transcends. While this model responds to questions of divine intervention, presence, power, and providence, it compromises the ontological otherness of God in the following ways: As noted previously, substance ontology holds that the union of two substances of the *same* order produces a new one that subsumes the former substances. Perceiving God and the world as substances within the same order would result in pantheism. However, that the substance of God and the substance of the world are of two *different* orders precludes the possibility for union. This is reflected in the following explanation concerning the capacity of the union of the human mind and the Divine:

> Finite substance remains finite, and eternally distinct from the Absolute; the Absolute is the sole fountain and source of knowledge which alone can harmonize the antithesis of thought and its object. . . . Although there can be no interpenetration of mind and matter—the two substances being mutually opposed—yet there can be a true and permanent union between the mind of man and the Absolute, both being of spiritual substance. . . . Spiritual and extended material substances are diametrically opposed.[29]

Hence, in substance ontology, true God cannot remain true God and be truly immanent in the cosmos. Conversely, true cosmos cannot remain true cosmos and be conceived as filled with the being of God. Thus, substance ontology with its dualisms denies the affirmation that the living and true God indwells the cosmos and its creatures. Rather, it offers a "God of the gaps" in which the Divine is intrusive rather than intrinsic to the ongoing life and creativity of the cosmos. Moreover, it has critical consequences for Christian belief in the

29. See "Malebranche," in *The Dictionary of Sects, Heresies, Ecclesiastical Parties and Schools of Religious Thought*, edited by John Henry Blunt (Whitefish, MT: Kessinger, 2003), 284–5.

Incarnation, the belief that the Word of God became flesh in Jesus of Nazareth proclaimed the Christ.

An essential part of the doctrine of the Incarnation is belief in the hypostatic union. This belief held that Jesus the Christ possessed both a fully divine nature (a spiritual substance) and a fully human nature (a material substance) *fully united* in one person. Because this belief concerned the thoroughly unique event of the union of divine and human natures, this was clearly a step beyond the quandary of how body and soul could be united in one person. Here the question concerned how Christians could talk about the union of two irreducibly different substances—one fully human and one fully divine—in one person in a way that did not compromise the integrity of either. In response to this unique and unrepeatable event, the church fathers did not try to explain or reconcile the hypostatic union in philosophical terms, because it exceeded anything their categories had ever conceived. Neither did they attempt to clarify why the union of two substances did not result in an entirely new substance. Rather, the Council of Chalcedon in 451 CE chose to make a definitive pronouncement to be held on the basis of faith that, nonetheless, acknowledged and retained the principal terms of the ontology of substance by keeping the natures (substances) unconfused, unchanged, indivisible, and distinct:

> We also teach that we apprehend this one and only Christ-Son, Lord, only-begotten—*in two natures*; and we do this *without confusing the two natures, without transmuting one nature into the other, without dividing them into two separate categories, without contrasting them according to area or function. The distinctiveness of each nature is not nullified by the union. Instead, the "properties" of each nature are conserved and both natures concur in one "person" and in one reality* [hypostasis]. They are not divided or cut into two persons, but are together the one and only and only-begotten Word [Logos], God, the Lord Jesus Christ.[30]

30. "The Council of Chalcedon (451 AD): Definition concerning the two natures of Christ," *Eternal Word Television Network*; available from *http://www.ewtn.com/library/COUNCILS/CHALCHRI.HTM*, italics added.

As this Christological conundrum illustrates and upcoming chapters of this book demonstrate, many of the tenets and implications of substance ontology are inconsistent with contemporary understandings of cosmic, human, and divine being. Substance ontology cannot adequately conceive of a God-world relationship that works with an evolutionary worldview, that responds to the deepest yearning of the human heart for unconditional love and union, and that acknowledges the intimate and enduring presence and action of the Divine in all of reality and history. At this point of impasse, this book seeks an alternative that can move the understanding of cosmic, human, and divine reality forward. The alternative it proposes is the ontology of relation.

TOWARD A RELATIONAL ONTOLOGY

Relational ontology asserts that mutual relation rather than substance constitutes, classifies, and distinguishes the very being of all that exists. In contrast to substance ontology, a relational ontology upholds the distinction between the Creator and the created, and between creatures themselves, without insisting on a radical separation in order to maintain their own individual selfhood. It does not demand this separation because relational ontology contends that the ontological distinction between Creator and created and, in fact, between creatures themselves is a distinction of *subjects* rather than *substances*. The shift from substance to relational ontology is a shift from interpreting persons and things as discrete objects according to their primary and secondary substances in isolation to interpreting persons and things as subjects in active and interactive relation to all other subjects—cosmic, human, and divine.

The Theological Basis for Relational Ontology

Theologians often trace the basis for relational ontology to Thomas Aquinas and his reflection on whether the term *person* signifies *relation* in the Trinity. According to Aquinas, "a divine person signifies a relation as subsisting . . . although in truth that which subsists in the divine nature is the divine nature itself."[31] A close reading of this

31. Aquinas, *ST*, Ia.29.4.

passage from the *ST* reveals Aquinas's insight that the *nature* of God, the *reality* of God, is essentially *relational*. As Trinity, the three Persons share one divine nature but are distinguished as Persons by their relation to one another. In traditional language, the three Persons are distinguished by the relations of Father to Son, Son to Father, Father and Son to Holy Spirit, Holy Spirit to Father and Son; nonetheless, all are one God. The key point here for relational ontology is that these divine relations are not distinct from the divine nature but, in fact, subsist within it and are the divine nature itself.

This assertion by Aquinas has ramifications for both human and cosmic being. Christians profess, on the basis of Scripture, that humans are made in the image and likeness of God. Therefore, if the reality and the very nature of the God in whom we believe is constituted by relation—is relation itself—then, by extension, human reality and the very nature of human being itself is constituted by and is relation. Furthermore, Christians profess that God is Creator, the very Source and Ground of Being for all created being. This leads logically to the following propositions:

If God is the Source of Being for the being of all creation, *then* the being of all creation shares in the Being of God.

If God's Being *by nature* is relational, *then* the being of all creation *by nature* is relational.

Aquinas spoke eloquently of this essential relationship between divine being and created being. In the *ST*, Aquinas calls the essential relation between God and creation *participation*, and it is not participation reserved simply to humanity. "Because the divine goodness could not be adequately represented by one creature alone," Aquinas stated, "God produced many and diverse creatures. . . . Thus the whole universe together participates in divine goodness more perfectly, and represents it better, than any single creature whatsoever."[32]

Expanding the Foundations of Relational Ontology

For some, the claims that are made in the preceding section rate as mere theological speculation. Nevertheless, this conclusion would

32. Ibid., *ST*, Ia.47.1.

be ill-founded. For as the chapters that follow show, beyond the claims made on the basis of the relational nature of the Christian God, the relations that constitute the very life of the cosmic and human have been observed, studied, described, and demonstrated empirically by the physical and social sciences. In the chapters that follow, insights about the universe from contemporary cosmology, evolutionary biology, and physics; about humans from sociology and psychology; and about God from classical and contemporary theology essentially affirm the relational nature of all being. Whether we consider cosmic, human, or divine being, three categories of "constitutive" or "essential" relationship—that is, a relationship so integral to the very nature of a being that, without this relationship, the being would no longer be itself—shape the content throughout this book. These are (1) a *relation of origin*, (2) a *relation of emergence,* and (3) a *relation of effect*.

Relation of Origin

As the term implies, a *relation of origin* stems from the fact that various entities share a common source of being that inextricably binds them together ontologically and existentially. Because of this common origin, particular qualities can be gleaned from, presumed of, and/or applied to the group as a whole. One example of a relation of origin from the perspective of the cosmos is the "common creation story." This story looks to a time in the order of approximately 13.7 billion years ago when the cosmos was no more than a fraction of a second old and took the form of a compressed fireball, consisting of the most basic subatomic elements of matter-energy-space-time.[33] All elements of matter, energy, space, and time that would ever exist erupted as a single quantum gift of existence from what scientists have termed the Big Bang. From this original unity came "conditions of chemical composition and temperature and radiation, permitting, through the interplay of chance and necessity, the coming into being of replicating molecules and [all] life . . . on planet Earth."[34]

33. Peacocke, "Theology and Science Today," 30.

34. John Polkinghorne, *One World: The Interaction of Science and Theology* (London: SPCK, 1986), 56.

Relation of Emergence

The second kind of relation is the *relation of emergence*. In evolutionary theory, the principle of emergence implies that "the whole is more than the sum of its parts." It refers to the reality that certain novel forms of life that emerge or develop from more elemental forms of life are not reducible or explainable in terms of the form or elements that preceded them. These emergent forms, therefore, require new language and concepts capable of describing them accurately in new and nonreductionist ways. Nevertheless, they bear an inherent relation to the forms that preceded them, for the creative potential of the earlier levels of organization become actualized in these surprising new forms over great expanses of time.

In this book, for example, letters join as words; words link into sentences; sentences combine into paragraphs; paragraphs build into chapters; and so on until the emergence of the finished product, which is more than the simple sum of the parts that composed it. A similar dynamic occurs in any creative activity, whether the result becomes a symphony, a painting, a skyscraper, or a newborn child. None of these outcomes or effects can be reduced to their component parts. Yet none of them could have come into being without the relations that preceded them and none of them exist independent of their inherent relations.

Relation of Effect

Finally, the *relation of effect* suggests that the entity is a unique outcome or *effect* of the relationship among the elements that constitute it, such that, without the relationship of the elements, the effect or outcome would not exist. The *relation of effect* reveals itself in the very particle structure of matter at the subatomic level. As atomic physicist Henry Stapp has pointed out, "An elementary particle is not an independently existing unanalyzable entity. It is, in essence, a set of relationships that reach outward to other things."[35] Werner Heisenberg, one of the founders of quantum theory, substantiates

35. Henry Stapp, in Frithjof Capra, "The New Vision of Reality: Toward a Synthesis of Eastern Wisdom and Modern Science," in *Ancient Wisdom and Modern Science*, ed. Stanislav Grof (Albany, NY: State University of New York Press, 1984), 135–148 at 138.

Stapp's insight and contends, "The world thus appears as a complicated tissue of events, in which connections of different kinds alternate or overlap or combine and thereby determine the texture of the whole."[36]

Why These Three Relations?

While many other relationships exist among and within beings, there are compelling reasons for concentrating on these three. First, each applies to relations within all the categories of being to be discussed—nonhuman, human, and divine. Second, all three describe a relational concept applicable to a broad range of beings within each category itself. Third, each one identifies relations that are recognizably constitutive or essential. Without the relation, the entity would either become something entirely other or cease to be at all. Fourth, each relationship is supported by the data gathered by the discipline that studies each of the beings we consider in the chapters to come—the disciplines of evolutionary and physical sciences, of social and behavioral sciences, and of Christian theology. Finally, because of their pervasiveness, the three relations enable logical and coherent connections and inferences to be drawn among and about the nonhuman, human, and divine realms of being that are explored.

The chapters that follow examine these three relations in greater detail and apply them to cosmic, human, and divine being. The insights of the evolutionary and physical sciences and of cosmology point out the essential relatedness of cosmic being from the subatomic level to the expanses of the universe. Psychologists offer psychosocial theories of personality that affirm the indispensability of interpersonal, social, and environmental relationships in constituting human personhood over the course of a lifetime.

While each of the disciplines above sketches out its own foundation for its claims of how relationality is constitutive of cosmic and human being, Christian theologians, following Aquinas, ground their claims about the essential relationality of cosmic and human being in the essential relationality of God as Trinity. If God who is

36. Werner Heisenberg, *Physics and Philosophy: The Revolution in Modern Science* (New York: Harper, 1958), 96.

Being Itself is, as Trinity, relational by nature, then, as the Source of all created being, this Triune God constitutes the being of creation itself as relational.

SUMMARY

The nature and constitution of reality have provoked significant questions and answers in many academic disciplines, including the natural sciences, the social sciences, theology, and philosophy. As this chapter demonstrated, the philosophical discipline of metaphysics is noteworthy in this regard because it has wrestled for centuries over the meaning of *reality* and *being* qua *being*. The origin of the most common response of metaphysics to the question of reality and being derives from the work of Plato and Aristotle, both of whom posit the notion of substance as what constitutes reality.

Because of its starting point in empirical reality, Aristotle's understanding of substance served as the foundation for this chapter's exploration of the ontology of substance. Demonstrating how Aristotle used the term *primary substance* to refer to a particular individual or to a particular thing existing in its own right, the term *secondary substance* to discuss the categories into which these are classified, and the term *accidents* to refer to the particular qualities attributed to them, this chapter, nonetheless, asked whether this description of being in terms of *primary substance, secondary substance,* and *accidents* reveals anything more than a sense perception of an entity and leaves open the question of its essential reality. It further questioned how sense perception assisted one in knowing the reality of what is immaterial or spiritual, such as the reality of God. Moreover, it discussed several dilemmas inherent in substance ontology that have been problematic in the light of contemporary understandings of the cosmos, the human person, and the Christian God.

The first was the problem of stasis, which implied that cosmic and human beings are static entities and that what constitutes a person or thing is a particular nature with more or less stable attributes. Following from the problem of stasis was the problem of self-sufficiency, which asserted that the more autonomous

and independent an individual proved to be, the more valued and perfected it is—an assertion, however, challenged by contemporary cosmology, physics, psychology, sociology, and anthropology that have consistently emphasized the critical roles of interdependence, of interrelationship, and of dynamism in living entities and systems. Substance ontology also carried the problem of dualism. First, this dualism of substances was hierarchical, with a corresponding hierarchy of value or of goodness. The fact that mind and body/matter and spirit, for example, are not only conceived dualistically but also interpreted hierarchically posed difficulties for conceiving the value of the natural world. Moreover, the fact that spiritual and material substances cannot intermingle raised questions of how God might be present and active in the lives of human and nonhuman beings. Thus, adherence to substance ontology also comes at the cost of union between God and the world. In substance ontology, God cannot remain truly God and be immanent in the cosmos, and the cosmos cannot remain truly cosmos and filled with the being of God.

Because substance ontology, therefore, can neither adequately address a relational contemporary worldview nor respond to the deepest yearning of the human heart for union with the Divine nor acknowledge the intimate and enduring presence and action of the Divine in all of reality and history, this chapter proposed an alternative ontology, that of an ontology of relation. Relational ontology asserts that it is the relations within and between all that exists that constitute, classify, and distinguish the very being of each existent. While theology traces the basis for relational ontology to Thomas Aquinas's teaching on the Being of the Trinity, insights from contemporary cosmology, evolutionary biology, and physics, as well as from sociology and psychology affirm the relational nature of the universe. Moreover, three particular relations exist that arguably constitute all forms of being, whether cosmic, human, or divine. The first is the relation of origin that stems from the reality that various entities share a common source of being that inextricably binds and constitutes them ontologically and existentially. The second is the relation of emergence that contends that while novel forms of life emerge or develop from more elemental forms of life and bear an inherent relation to the forms that preceded them, they

are not reducible or explainable in terms of the form or elements that preceded them. They, therefore, require new language and concepts capable of describing them accurately as the creative potential of the earlier levels of organization become actualized in these surprising new forms over great expanses of time. Finally, the relation of effect suggests that an entity is a unique outcome or effect of the relationship among the elements that constitute it, such that, without the relationship of the elements, the effect or outcome would not exist.

The chapters that follow demonstrate that, when heard in the timbre of relational ontology, the scholarly claims of the evolutionary and physical sciences, of sociological and psychosocial theory, and of classical and contemporary theology ring with a singular resonance. They all affirm the principal point of the following statement based on quantum physics and chaos theory, namely, that we are, *in essence*, our relationships:

> The universe that quantum physics and chaotic dynamics reveal is a fundamentally relational universe where subject and object are interpenetrating presences. In a relational universe, to speak of 'an object' is to speak in a short-handed way of patterns of complex, dynamically interpenetrating relationships. These relationships are dynamic and nonlinear. The relational universe is not the world of discrete, atomistic objects that behave deterministically, therefore predictably, according to linear causality. As A interacts with B, the identity of A changes to reflect its interaction with B. Likewise for B. As A and B continue to interact, along with innumerable others, changes to their "identity" complexify beyond measure and prediction. . . . All of us, including non-human beings, are our relationships. We are nothing other than our relationships—with each other, with the world. We are patterns that connect.[37]

37. Heesoon Bai and Hartley Banack, "'To See a World in a Grain of Sand': Complexity Ethics and Moral Education," *Complicity: An International Journal of Complexity and Education* 3:1 (2006): 5–20 at 9–10.

FOR FURTHER READING

Kasper, Walter. *The God of Jesus Christ*. Translated by Matthew J. O'Connell. New York: Crossroad, 1984.

Peacocke, Arthur. "Theology and Science Today." In *Cosmos and Creation: Science and Theology in Consonance*, edited by Ted Peters. Nashville, TN: Abingdon, 1989.

Polkinghorne, John. *One World: The Interaction of Science and Theology*. London: SPCK, 1986.