

HOLMES ROLSTON III

# Science & Religion

A CRITICAL SURVEY

WITH A NEW INTRODUCTION

## 20TH ANNIVERSARY EDITION

"A monumental work . . . [The] book is truly outstanding."

—*Theological Studies*

"A superb and subtle book."

—*Christian Century*

"Commendable for its clarity and critical acumen."

—*Choice*

"Filled with admirably argued and powerfully presented treatments of critical issues."

—*Zygon: Journal of Religion and Science*

This acclaimed book is back in print with a new introduction by its award-winning author. An interdisciplinary approach to the central themes of scientific and religious thought, it uses the scientific method of inquiry to distill key issues from science. These issues are then integrated in a study that highlights crucial issues in a logical and historical analysis that begins with matter and moves through life, mind, culture, history, and spirit.

"Never in the histories of science and religion have the opportunities been greater for fertile interaction between these fields, with mutual benefits to both," states Holmes Rolston. The re-publication of this book provides current researchers and students in the field an invaluable, timeless methodological resource.

**HOLMES ROLSTON III** is a world-renowned philosopher, widely recognized as the father of environmental ethics as a modern academic discipline. The winner of the Templeton Prize in 2003 and the Mendel Medal in 2005, he currently holds the position of University Distinguished Professor of Philosophy, Colorado State University. He is associate editor of the journal *Environmental Ethics* and the author of six books that have won acclaim in both academic journals and the mainstream press.

TEMPLETON FOUNDATION PRESS

Philadelphia & London  
www.templetonpress.org

Cover design: Kachergis Book Design

ISBN 13: 978-1-59947-099-3

ISBN 10: 1-59947-099-3



9 781599 470993

*Templeton Foundation Press helps intellectual leaders and others learn about science research on aspects of realities, invisible and intangible. Spiritual realities include unlimited love, accelerating creativity, worship, and the benefits of purpose in persons and in the cosmos.*

# CONTENTS

Preface

## Chapter 1. Methods in Scientific and Religious Inquiry

### 1. Theories, creeds, and experience

The hypothetico-deductive method and theory-laden facts  
Verification and falsification  
Testing creeds in experience

### 2. Models, patterns, paradigms

Scientific and religious paradigms  
Pervasive and persuasive characteristics of paradigms  
Paradigms, anomalies, and "blik's"

### 3. Objectivity and involvement

Dedication and universal intent  
Informed judgment and decision  
Observer involvement in science and religion

### 4. Scientific and religious logic

Science as the systematic search for causes  
Religion as the systematic search for meanings  
Causal laws and patterns of meaning  
Self-implicating meanings

## Chapter 2. Matter: Religion and the Physical Sciences

### 1. Newtonian mechanism

A revolution in explanations  
Matter-in-motion: the mechanistic world  
Primary and secondary explanations and qualities  
The Divine Architect

### 2. Quantum mechanics and indeterminacy

Electronic characteristics of nature  
Uncertainty and indeterminacy  
Observer involvement and loss of picturability  
Randomness and interaction  
Organisms in the microphysical world

### 3. Relativity and matter-energy

The relativity of time, mass, energy, simultaneity  
Matter in the spacetime field  
God and relativity

### 4. Microphysical and astrophysical nature

Humans on the scale of complexity  
The anthropic principle and the fine-tuned universe  
Mutability and permanence in nature  
Mathematics and historical experience

## **Chapter 3. Life: Religion and the Biological Sciences**

### **1. Biochemistry and the secret of life**

Electronic and molecular characteristics of life  
Biological molecules as informational molecules  
Historical continuity in life  
Particular individuality in life

### **2. Evolution and the secret of life**

The Darwinian revolution  
Incremental evolution and natural selection for biofunction  
Troubles in evolutionary explanation  
Evolution as a random walk  
Chemical evolution and the incubation of life  
The evolution of mind  
Evolutionary development as a trend upslope  
The incompleteness of evolutionary theory

### **3. The cybernetics of life**

Life as a cybernetic system  
Genetic sets as propositional, logical, normative  
Randomness and trial-and-error learning  
Evolution as a prototype of rationality  
Evolutionary theism

### **4. The life struggle**

Suffering in the prolife struggle  
The backup pelican chick  
Sickle cell anemia and the hemoglobin molecule  
The way of nature as the way of the cross

## **Chapter 4. Mind: Religion and the Psychological Sciences**

### **1. The possibility of a human science**

A science of persons?  
Causal laws and personal agency  
Objective science and the subjective life

### **2. Religion and Freudian psychoanalysis**

The unconscious mind  
Religion as psychological projection and illusion  
Difficulties in the psychoanalytic model  
The search for a Parenting Cause

### **3. Religion and behavioral science**

Stimulus, response, and conscious life  
Difficulties in the behaviorist model  
Rationality, freedom, and responsible decision  
Behaviorism and religion  
Cognitive psychology: persons as cognitive processors

### **4. Religion and humanistic psychologies**

The self in personality theory  
Self-actualizing persons  
Value assumptions and inadequacies in humanistic psychologies  
The self in historical and cosmic contexts

## Chapter 5. Culture: Religion and the Social Sciences

### 1. Society and the individual: models, laws, causes

The law of the three stages

Models of society: organismic, equilibrating, structural-functional and cybernetic systems

Conflict and change in historical society

Individual agency in the social system

### 2. Interpretive social science

Communities of shared meaningfulness

The scientific study of religious "prejudice"

Meaning systems and causal laws

Society as a text to be interpreted

### 3. Religion as a social projection

The collective function of religion

Nonsocial dimensions in religious life

The religious problem in secular society

Sociology and the future of religion

### 4. Values in social science

A value-free science?

Value presumptions and consequences in social theory

Naturalistic and therapeutic tendencies in social science

Good and evil in the cultural community

## Chapter 6. Nature and History

### 1. Nature after science

Immensity, diversity, unity in the natural world

Energetic, formational, informational nature

Intelligibility and mystery in nature after science

Discontinuity and continuity in the human place in nature

Natural history

### 2. Hard naturalism

An economical and scientific worldview

Nature without supernature

Persons as epiphenomenal in nature

Difficulties in hard naturalism

### 3. Soft naturalism

Creative and transformative nature

Nature as a realm of values

Persons as children of nature

Difficulties in soft naturalism

### 4. Eastern perspectives

Nature as *maya*, illusion, and *samsara*, spinning world

Brahman and *sunyata* as explanatory of natural history

The Tao and binary nature

Difficulties in the Eastern perspectives

### 5. The dimension of history

Idiographic richness in history

The dramatic character of history

Narrative and causal explanations

Meanings and directions in history

## 6. Suffering

- ""Suffering in nature and history
- A cruciform naturalism

## Chapter 7. Nature, History, and God

### 1. Nature and supernature

- Emergence, the natural, and the supernatural
- Supernature and supercharged nature
- Superintending levels in the Earth story
- The Divine Spirit in historical nature

### 2. Scientific-existentialist theism

- God beyond nature and history
- God in the existential self
- Difficulties in scientific-existentialist theism
- Causes and meanings: the complementary languages

### 3. Process theism

- Nature as organic process
- God as the ground of order and novelty
- God as creative persuasion and conserver of values
- The becoming God
- Religious adequacy of the process God

### 4. Transscientific theism

- God as the One who loves in freedom
- God in nature, history, Jesus Christ
- God in righteous love and personal life
- Counterevidence to the gracious Presence

### 5. Insight in science and religion: Doing the the truth

- Correspondent truthfulness
- The transformation of science into interpretive history
- Information and reformation: science, values, and truth
- Doing the truth on the cutting edge of nature and history

## Selected critical notice of Science and Religion: A Critical Survey

Langdon Gilkey (Theology, University of Chicago Divinity School), says of *Science and Religion*, "It is, I think, the finest volume in this field to date." "Rolston is one of three "impresarios of religion-science events" whose "example and organizing talents have encouraged a great deal of my work in the field." In understanding the "four major categories in terms of which nature has been experienced and known, ... I am especially and vastly indebted to Micea Eliade, Lawrence Sullivan, and, for modern science, Holmes Rolston, III." Rolston makes a "fascinating, perceptive and (to me) very original exploration of the theme of the intertwining of energy and pain, life and suffering (and their common result: more life, new life, and new life forms)." "The great Dying yields the great Renewal." "No one has made this point more perceptively, clearly, and profoundly than Rolston." In *Nature, Reality, and the Sacred: The Nexus of Science and Religion* (Minneapolis: Fortress Press, 1993), citations passim.

Donald Musser (Philosophy, Stetson University), in a critical review for *The International Journal for Philosophy of Religion*, says, "Rolston ... has produced a book that rivals Ian Barbour's *Issues in Science and Religion* as the best in the field. ... I highly recommend this book ... it will become the standard in the field." (*International Journal for Philosophy of Religion* 26(1989):185-192)

John J. Compton (Philosophy, Vanderbilt University): *Science and Religion* "marvelously combines the elements

needed for any thoughtful examination of the intersections of science and religion today--it is comprehensive ... it is rich in scientific and theological detail, it is methodologically self-aware and circumspect at every point, both in respect of the sciences and religious thought and in respect to its own developing argument, and it has a developing argument, inspired by a powerful constructive vision of the wholeness of the human endeavor to understand, of which, it is argued, the sciences and religious reflection form complementary parts. And as sheer grace for the reader, the book is engagingly and trenchantly written, perfused with insightful epigram, a text to delight as well as to illumine. ... This is a robust challenge (made) with rare erudition and skill." (*Critical Review of Books in Religion: Annual Supplement to the Journal of the American Academy of Religion* 2[1989]:425-427.

Frederick Ferré (Distinguished Research Professor, Philosophy, University of Georgia), says, "This book is a delight. ... It is up to the minute on methodological developments, ... clear and responsible.... Everyone in the field will need to work with this text." (Book endorsement)

Robert J. Russell (Physics, Theology, Director of the Center for the Study of Theology and the Natural Sciences, Berkeley), says, "I value this work greatly for attempting and, by and large, succeeding at bringing science and religion into a meaningful and creative relationship." (Book endorsement)

John F. Haught (Theology, Philosophy, Georgetown University, says that *Science and Religion* is "a monumental work, one deserving of widespread usage by theologians and scientists alike. Carefully organized and beautifully written, ... the book is truly outstanding. One may safely predict that it will enrich discussion of science and religion for many years to come." (*Theological Studies* 49(1988):368-370)

David Foxgrover, in a review for the *Christian Century*, says that *Science and Religion* is "a superb and subtle book that will become a standard in the field. ... It stands on its own as a creative attempt to deal with one of the 20th century's central theological issues." (*Christian Century* 105, no. 4, 1988, pages 132-133)

Ian Barbour (Physics, Theology, Carlton College), the leading world authority in science and religion) says, "This is a remarkable book and I predict its widespread use. ... This first rate book can be highly recommended to anyone seeking access to the best of recent thought." (Book endorsement)

Karl Peters (Religion, Rollins College, former editor of *Zygon: Journal of Religion and Science*) says that Rolston's is "the best current comprehensive treatment of science and religion," written with "particular genius," "an excellent text that should be studied by every seminary student and graduate student in religious studies who wishes to relate religious thinking to the contemporary sciences." He adds that it "is to be placed alongside Ian G. Barbour's *Issues in Science and Religion* and A. R. Peacocke's *Creation and the World of Science*." (Book endorsement)

Donald W. Shriver (President, Union Theological Seminary, New York), says that *Science and Religion* is "one of the most important books I have read in years and absolutely the best on science and religion that I have ever read."

Joseph Pickle (Religion, Colorado College): *Science and Religion* is "notable for its breadth and depth ...filled with admirably argued and powerfully presented treatments of critical issues. ... the most substantial argument for a position on the relationship of science and religion that is eminently worth arguing ... finely nuanced and carefully developed." *Zygon: Journal of Religion and Science* 23(1988):203-205)

Charles Birch (Biologist, University of Sydney, Australia, winner of the Templeton Prize), says that *Science and Religion* is "quite the best on that subject." (Personal correspondence)

James W. Jones (Department of Religion, Rutgers University), in a discussion of systems theory, cites *Science and Religion* as providing "stunning examples of the theological use of such a systems perspective." (*Zygon: Journal of Religion and Science* 27[1992]:201-202)

Jeff Astley (School of Education, University of Durham, England): *Science and Religion* "is likely to become the standard text on this subject: a valuable source of information and reflection ... containing an up-to-date, large-scale map. ... The arguments are clearly presented and the language is often pithy and memorable. ... The theist will welcome

the depth of the author's spirituality as well as his learning, and relish his out-flanking attacks on scientists, and their camp-followers, who have overreached themselves in their claims for the explanatory power of the theory of natural selection, the adequacy of certain psychological models of the mind, and the possibility of value-free social science." (*British Journal of Religious Education* 11[1989]:49-50)

S. Mark Heim (Philosophy of Religion, Andover Newton Theological School, Newton Centre, Massachusetts) says, "Science and Religion is ... conceived on a very broad scale and carried through across a wide range of disciplines, from physics to psychology. The apparent superficiality of such a massive project is avoided by an impressive marshalling of specific cases, and by sustained attention to a few crucial questions. Since its publication in 1966, Ian Barbour's *Issues in Science and Religion* has served as a standard textbook in this area. Rolston's work provides a first rate alternative and supplement. ... The distinguishing feature of Rolston's book is the way in which he has organized the material around a sustained and nuanced argument. ... Rolston's study is careful, and yet freshly suggestive in the manner it probes the nature of scientific theory. ... The book deserves and will find wide use." (*Christian Scholar's Review* 17(1988):490-491).

Harold H. Oliver (Philosophical Theology, Boston University School of Theology) says that in the contemporary dialogue between science and religion, "Any list of the most notable contributors in this field would include the names of Thomas F. Torrance, A. R. Peacocke, Ian Barbour, Ralph Burhoe, Stanley Jaki and Holmes Rolston, III." *Journal of the American Academy of Religion* 60 (No. 3, 1992):379-404, on p. 390, p. 403)

John H. Wright (Jesuit School of Theology, Berkeley) calls *Science and Religion* "an extraordinarily complete basic treatment." in "Theology, Philosophy, and the Natural Sciences," *Theological Studies* 52(4)(1991):651-668.

[More Critical notice of Science and Religion: A Critical Survey](#)