Quantum Physics And Theology An Unexpected Kinship

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The Entangled God
Science and Theology
Lifting the Quantum Veil

ARIANA HAYNES

Fifty-one Responses to Questions about God, Science, and Belief Monarch Books
The new discoveries in physics during the twentieth century have stimulated intense debate about their relevance to age-old theological questions. Views range from those holding that modern physics provides a surer road to God than traditional religions, to those who say that physics and theology are incommensurable and so do not relate. At the very least, physics has stimulated renewed theological discussions. In this critical introduction to the science-theology debate, Peter E. Hodgson draws on his experience as a physicist to present the results of modern physics and the theological implications. Written for those with little or no scientific background, Hodgson describes connections between physics, philosophy and theology and then explains Newtonian physics and Victorian physics, the theories of relativity, astronomy and quantum mechanics, and distinguishes the actual results of modern physics from speculations. The connections with theology are explored throughout. The concluding section draws discussions together and makes an important new contribution to the debate.
Quantum Physics Meets the Philosophy of Mind Cosmo Publishing
This book introduces mathematicians, physicists, and philosophers to a new, coherent approach to theory and interpretation of quantum physics, in which classical and quantum thinking live peacefully side by side and jointly fertilize the intuition. The formal, mathematical core of quantum physics is cleanly separated from the interpretation issues. The book demonstrates that the universe can be rationally and objectively understood from the smallest to the largest levels of modeling. The thermal interpretation featured in this book succeeds without any change in the theory. It involves one radical step, the reinterpretation of an assumption that was virtually never questioned before - the traditional eigenvalue link between theory and observation is replaced by a q-expectation link: Objective properties are given by q-expectations of products of quantum fields and what is computable from these. Averaging over macroscopic spacetime regions produces macroscopic quantities with negligible uncertainty, and leads to classical physics. - Reflects the actual practice of quantum physics. - Models the quantum-classical interface through coherent spaces. - Interprets both quantum mechanics and quantum field theory. - Eliminates probability and measurement from the foundations. - Proposes a novel solution of the measurement problem.
Energy in Orthodox Theology and Physics Crossroad
I hope that this volume of spiritual reflections from scientists around the globe will help its readers find a calm and valuable refuge from a tempest of conflict about science and spirit.
What Is Real? IOP Publishing Limited
Quantum physics studies the boundary zone between the physical part of the universe and the nonphysical realm. The Bible frequently refers to the non-physical realm as the unseen or spiritual realm. So, quantum physics has a lot to say about how the spiritual realm works, but there are many confusing and inaccurate interpretations out there in popular media these days. This book will provide simple and easy ways to demystify quantum physics and to understand the Bible. We will lift the veil of the confusion surrounding the unseen realm as we explore many intriguing scientific discoveries that show us about Heaven's reality. We will also see how well the latest discoveries about the unseen realm point back to realities revealed in Scripture.
Coherent Quantum Physics University of Notre Dame Pess
Quantum theory has shaken our understanding of the universe to its deepest foundations. Quantum theory raises deep and profound scientific, philosophical and theological issues. Consider several scientific issues: Is quantum indeterminism ontological (a reflection of reality) or epistemological (a reflection of human ignorance)? Does the universe have a place for chance? What is the famous Bohr-Einstein debate? Who won? What is Schrödinger's famous cat and what does it teach us? Some philosophical issues: How do our metaphysical commitments affect the interpretation of quantum theory? How, given quantum theory, should we understand the laws of nature? What are the implications of quantum theory for the traditional metaphysics and epistemologies of, for example, Kant, Leibniz and Spinoza? Finally, what are the implications of this revolutionary theory for theology? Is it possible to construct a natural theology -a case for God based on nature- given quantum theory? Is "Divine action" possible given quantum uncertainties? Are there implications for the ongoing debates about miracles, free will and the problem of evil? This book, which seeks to answer these and many other questions, is highly recommended for those who value understanding quantum theory from and for philosophical and theological perspectives.
Theology and Modern Physics University of Notre Dame Press
From black holes to holograms, from relativity theory to the discovery of quarks, an original exposition of quantum theory tht unravels profound theological questions
How John Polkinghorne found God in science and religion Simon and Schuster
Three decades ago, federal policymakers - Republicans and Democrats - embarked on a general strategy of deregulation. In the electricity, gas delivery, and telecommunications industries, the strategy called for restructuring to separate production from transmission and distribution, followed by elimination of price controls. The expected results were lower prices and increased quality, reliability, and scope of services. Paul MacAvoy, an economist with forty years of experience in the regulatory field, here assesses the results and concludes that deregulation has failed to achieve any of these goals in any of these industries. MacAvoy shows that we now have only partial deregulation, a mixture of oligopoly structure with direct price control. He explores why this system leads to volatile and high prices, reduced investment, and low profitability, and what policy actions can be implemented to address these problems.
New Essays on the Mind-Body Relation in Quantum-Theoretical Perspective WestBow Press
Science and faith have had a long intertwined history. The relationship has run the gamut from a total disconnect to an adversarial battleground where proponents of each claim total victory. However, if God created the physical world and remains active in the physical world, we cannot

ignore the interaction nor can we assume or expect a world of conflict. While nineteenth-century physics brought classical physics--which quite reasonably divorced God and nature--to a culmination, twentieth-century physics, especially quantum physics, has opened a new realm of possible interactions. Even though one can reasonably say that no one understands quantum physics, the fruits of the discipline overflow the cornucopia. People of faith can share the feast; and people of science are welcome at the table of faith. ""This is a unique, enlightening, chronological account of the development of modern physics through quantum mechanics. 75% of the content will not be found in textbooks because it concentrates on the personal history, philosophy, and theology of the scientists involved. Faries is also masterful at bringing his own theology into the discussion of quantum mechanics, letting them inform each other about a series of unresolved paradoxes. To benefit from this book the reader should have had at least a full year of college physics."" --William Wharton, Emeritus Professor of Physics, Wheaton College, Wheaton, Illinois ""This is a knowledgeable, credible, and challenging account that brings scientific causality and human life decisions and involvement into the ultimate definition of reality. Faries sets forth a beautiful example of how a meticulous, informed science and a committed, orthodox Christian faith can reason together in a harmonious manner."" --Alan F. Johnson, Professor of New Testament and Christian Doctrine, Wheaton College and Graduate School, Wheaton, Illinois ""I've never had a conversation with Dillard Faries in which I didn't come away with a deeper insight into Scripture or physics or whatever we happened to be talking about. This book has the same effect, with a subject that boggles the mind with the mysterium tremendum of the known universe."" --Mark Galli, Editor in Chief of Christianity Today Dillard Faries is Professor Emeritus of Physics at Wheaton College. His special interests have been nonlinear optics, physics of music, and quantum physics.

Quantum Theology Walter de Gruyter GmbH & Co KG

Argues that the discoveries of twentieth-century physics--relativity and the quantum theory--demand a radical reformulation of the fundamentals of reality and a way of thinking, that is closer to mysticism than materialism

The Unfinished Quest for the Meaning of Quantum Physics Yale University Press

In The Entangled God, Kirk Wegter-McNelly addresses the age-old theological question of how God is present to the world by constructing a novel, scientifically informed account of the God–world relation. Drawing on recent scientific and philosophical work in "quantum entanglement," Wegter-McNelly develops the metaphor of "divine entanglement" to ground the relationality and freedom of physical process in the power of God’s relational being. The Entangled God makes a three-fold contribution to contemporary theological and religious discourse. First, it calls attention to the convergence of recent theology around the idea of "relationality." Second, it introduces theological and religious readers to the fascinating story of quantum entanglement. Third, it offers a robust "plerotic" alternative to kenotic accounts of God’s suffering presence in the world. Above all, this book takes us beyond the view of theology and science as adversaries and demonstrates the value of constructively relating these two important areas of intellectual investigation.

Quantum Physics and Theology Princeton University Press

Quantum Mechanics, a collection of fifteen essays, explores the creative interaction among quantum physics, philosophy, and theology. This fine collection presents the results of the fifth international research conference co-sponsored by the Vatican Observatory, Rome, and the Center for Theology and the Natural Sciences, Berkeley. The overarching goal of these conferences is to support the engagement of constructive theology with the natural sciences and to investigate the philosophical and theological elements in ongoing theoretical research in the natural sciences. In the first section of this collection, contributors examine scientific and historical context. Section two features essays covering a wide range of philosophical interpretations of quantum mechanics. The final set of essays explores the theological implications of quantum theory. Abner Shimony, Raymond Y. Chiao, Michael Berry, Ernan McMullin, William R. Stoeger, S.J., James T. Cushing, Jeremy Butterfield, Michael Redhead, Chris Clarke, John Polkinghorne, Michael Heller, Philip Clayton, Thomas F. Tracy, George F.R. Ellis, and Robert John Russell all contributed essays to this volume.

The Copenhagen Interpretation of Quantum Physics Routledge

Quantum Leap uses key events in the life of Polkinghorne to introduce the central ideas that make science and religion such a fascinating field of investigation. Sir John Polkinghorne is a British particle physicist who, after 25 years of research and discovery in academia, resigned his post to become an Anglican priest and theologian. He was a professor of mathematical physics at Cambridge University, and was elected to the Royal Society in 1974. As a physicist he participated in the research that led to the discovery of the quark, the smallest known particle. This cheerful biography-cum-appraisal of his life and work uses Polkinghorne's story to approach some of the most important questions: a scientist's view of God; why we pray, and what we expect; does the universe have a point?; moral and scientific laws; what happens next?

The Age of Entanglement Glistening Prospect Bookhouse

Bestselling author and acclaimed physicist Lawrence Krauss offers a paradigm-shifting view of how everything that exists came to be in the first place. “Where did the universe come from? What was there before it? What will the future bring? And finally, why is there something rather than nothing?” One of the few prominent scientists today to have crossed the chasm between science and popular culture, Krauss describes the staggeringly beautiful experimental observations and mind-bending new theories that demonstrate not only can something arise from nothing, something will always arise from nothing. With a new preface about the significance of the discovery of the Higgs particle, A Universe from Nothing uses Krauss’s characteristic wry humor and wonderfully clear explanations to take us back to the beginning of the beginning, presenting the most recent evidence for how our universe evolved—and the implications for how it’s going to end. Provocative, challenging, and delightfully readable, this is a game-changing look at the most basic underpinning of existence and a powerful antidote to outmoded philosophical, religious, and scientific thinking.

Quantum Mechanics Fordham University Press

Science and faith have had a long intertwined history. The relationship has run the gamut from a total disconnect to an adversarial battleground where proponents of each claim total victory. However, if God created the physical world and remains active in the physical world, we cannot ignore the interaction nor can we assume or expect a world of conflict. While nineteenth-century physics brought classical physics--which quite reasonably divorced God and nature--to a culmination, twentieth-century physics, especially quantum physics, has opened a new realm of possible interactions. Even though one can reasonably say that no one understands quantum

physics, the fruits of the discipline overflow the cornucopia. People of faith can share the feast; and people of science are welcome at the table of faith.

Reflections of a Bottom-Up Thinker Augsburg Fortress Publishers

A study of one of the fundamental concept of quantum physics examines the strange correlation between two separated particles, entitled "entanglement" by physicist John Bell, drawing on the work of leading physicists to explain the phenomenon.

Quantum Gods Prometheus Books

Since ancient times man has sought to understand the origins of the universe around him, and his place within it. Such speculations were once the sole purview of religion, but since the Enlightenment, science and rationality have also attempted to explain these mysteries, but from an opposing perspective. Conflict resulted and both sides dug in, clinging to dogmas that precluded any consideration of the other side. "Genesis, Zen and Quantum Physics" enters the fray with a very unique approach. Believing that harmony, rather than conflict, defines the relationship between the Genesis account and modern science; the authors have retranslated the creation story according to the ancient Hebrew pictographic language and in the context of the nomadic culture from which the language and narratives arose. The resulting translation and its accompanying commentary challenge the common understanding of God, science, and the very reason for man's existence. By harmonizing an accurate biblical account with cutting edge scientific understanding, the authors present a mature religious ideal and an appreciation for the understanding of the ancients for modern scientific concepts. This is a book that will redefine your understanding of God, the world around you and your role within it.

Quantum Theology Quantum Physics and TheologyAn Unexpected Kinship

Polkinghorne argues that the habits of thought that are natural to the scientist are the same habits of thought that can be followed also in the search for a wider and deeper kind of truth about the world.

Physics, Philosophy, and Theology Princeton University Press

Quantum Theory is the most revolutionary discovery in physics since Newton. This book gives a lucid, exciting, and accessible account of the surprising and counterintuitive ideas that shape our understanding of the sub-atomic world. It does not disguise the problems of interpretation that still remain unsettled 75 years after the initial discoveries. The main text makes no use of equations, but there is a Mathematical Appendix for those desiring stronger fare. Uncertainty, probabilistic physics, complementarity, the problematic character of measurement, and decoherence are among the many topics discussed. ABOUT THE SERIES: The Very Short Introductions series from Oxford University Press contains hundreds of titles in almost every subject area. These pocket-sized books are the perfect way to get ahead in a new subject quickly. Our expert authors combine facts, analysis, perspective, new ideas, and enthusiasm to make interesting and challenging topics highly readable.

A Universe from Nothing Routledge

Is it possible to think like a scientist and yet have the faith of a Christian? Although many Westerners might say no, there are also many critically minded individuals who entertain what John Polkinghorne calls a "wistful wariness" toward religion--they feel unable to accept religion on rational grounds yet cannot dismiss it completely. Polkinghorne, both a particle physicist and Anglican priest, here explores just what rational grounds there could be for Christian beliefs, maintaining that the quest for motivated understanding is a concern shared by scientists and religious thinkers alike. Anyone who assumes that religion is based on unquestioning certainties, or that it need not take into account empirical knowledge, will be challenged by Polkinghorne's bottom-up examination of Christian beliefs about events ranging from creation to the resurrection. The author organizes his inquiry around the Nicene Creed, an early statement that continues to summarize Christian beliefs. He applies to each of its tenets the question, "What is the evidence that makes you think this might be true?" The evidence Polkinghorne weighs includes the Hebrew and Christian scriptures--their historical contexts and the possible motivations for their having been written--scientific theories, and human self-consciousness as revealed in literary, philosophical, and psychological works. He begins with the words, "We believe," and presents understandings of the nature of humanity, showing, for example, that Cartesian theory, evolution, and natural selection do not tell the entire story of what humans are about, especially in light of many sources that attest to our spirituality. Moving through the Creed, Polkinghorne considers the concept of divinity and God as creator in discussions that cover the Theory of Everything, the Big Bang Theory, and the possibility of divine presence within reality so that God is not simply an outside observer. Chapters on Jesus analyze the different ways events are described in the Gospels and the way motivation for belief is conveyed--for example, how do these writings explain why a young man killed in public disgrace could inspire a following, when other major world religious leaders lived to become highly revered elders in their communities? "Faith seeking understanding" is, according to Polkinghorne, like the scientific quest. Both are journeys of intellectual discovery in which those who survey experience from an initially chosen point of view must be open to correction in the light of further experience. "Religion," he writes, "has long known that ultimately every human image of God proves to be an inadequate idol." The Faith of a Physicist, based on the prestigious 1993 Gifford Lectures, delivers a powerful message to scientists and theologians, theists and atheists alike. Originally published in 1994. The Princeton Legacy Library uses the latest print-on-demand technology to again make available previously out-of-print books from the distinguished backlist of Princeton University Press. These editions preserve the original texts of these important books while presenting them in durable paperback and hardcover editions. The goal of the Princeton Legacy Library is to vastly increase access to the rich scholarly heritage found in the thousands of books published by Princeton University Press since its founding in 1905.

God and the New Physics Westminster John Knox Press

Albert Einstein taught that imagination is more important than knowledge, probably having come to this conclusion through a realization that almost all science represents belieffaithas opposed to knowledge. It should come as no surprise, then, that scienceespecially modern physics with its theories of relativity and quantum mechanicshas revolutionized thinking about the likelihood of the existence of God. In The Physics and Philosophy of the Bible, author and physician James Frederick Ivey explains how science, particularly quantum mechanics and relativity, aided by Platos philosophy and the history of Jewish people, can be utilized in order to virtually prove that God exists, that he is unique, and that he is the biblical deity. Ultimately an exploration of Christian

philosophy and apologeticsincluding discussions of Christian history, secular retorts, the intersection of science and faith, and the relationship between physics and ultimate truthThe Physics and Philosophy of the Bible demonstrates that apologists are very close to the non-necessity of having to deal with whether God exists or not. From Platos earliest philosophical insights to the most groundbreaking discoveries in contemporary physics, we can find the fingerprints of God that prove He is with us. And. God seeks us just as we seek him, for he desires cognitive individuals with whom he can enjoy mutual love and intimacy.