

Mathematics Metaphysics And The Multiverse

This Festschrift volume has been published in honor of Cristian Calude on the occasion of his 60th birthday and contains contributions from invited speakers and regular papers presented at the International Workshop on Theoretical Computer Science, WTCS 2012, held in Auckland, New Zealand, in February 2012. Cristian Calude has made a significant contribution to research in computer science theory. Along with early work by Chaitin, Kučera, Kurtz, Solovay, and Terwijn his papers published in the mid-1990s jointly with Khoussainov, Hertling, and Wang laid the foundation for the development of modern theory of algorithmic randomness. His work was essential for establishing the leading role of New Zealand in this area. The research interests of Cristian Calude are reflected in the topics covered by the 32 papers included in this book, namely: algorithmic information theory, algorithms, automata and formal languages, computing and natural sciences, computability and applications, logic and applications, philosophy of computation, physics and computation, and unconventional models of computation. They have been organized into four parts. The first part consists of papers discussing his life achievements. This is followed by papers in the three general areas of complexity, computability, and randomness; physics, philosophy (and logic), and computation; and algorithms, automata, and formal models (including unconventional computing).

Science Without Numbers caused a stir in philosophy on its original publication in 1980, with its bold nominalist approach to the ontology of mathematics and science. Hartry Field argues that we can explain the utility of mathematics without assuming it true. Part of the argument is that good mathematics has a special feature ("conservativeness") that allows it to be applied to "nominalistic" claims (roughly, those neutral to the existence of mathematical entities) in a way that generates nominalistic consequences more easily without generating any new ones. Field goes on to argue that we can axiomatize physical theories using nominalistic claims only, and that in fact this has advantages over the usual axiomatizations that are independent of nominalism. There has been much debate about the book since it first appeared. It is now reissued in a revised edition containing a substantial new preface giving the author's current views on the original book and the issues that were raised in the subsequent discussion of it.

Roberto Mangabeira Unger and Lee Smolin argue for a revolution in our cosmological ideas. Ideal for non-scientists, physicists and cosmologists.

Of all the writings of Plato the Timaeus is the most obscure and repulsive to the modern reader, and has nevertheless had the greatest influence over the ancient and mediaeval world. The obscurity arises in the infancy of physical science, out of the confusion of theological, mathematical, and physiological notions, out of the desire to conceive the whole of nature without any adequate knowledge of the parts, and from a greater perception of similarities which lie on the surface than of differences which are hidden from view. Aeterna Press

The Emergent Multiverse

Aristotle and Mathematics

International Workshop on Theoretical Computer Science, WTCS 2012, Dedicated to Cristian S. Calude on the Occasion of His 60th Birthday, Auckland, New Zealand, February 21-24, 2012, Revised Selected and Invited Papers

Physics and Metaphysics of Music and Essays on the Philosophy of Mathematics

The Multiverse and Participatory Metaphysics

What Number Is God?

Probability in the Philosophy of Religion

Recent years have seen an explosion of interest in evolutionary debunking arguments directed against certain types of belief, particularly moral and religious beliefs. According to those arguments, the evolutionary origins of the cognitive mechanisms that produce the targeted beliefs render these beliefs epistemically unjustified. The reason is that natural selection cares for reproduction and survival rather than truth, and false beliefs can in principle be as evolutionarily advantageous as true beliefs. The present volume brings together fourteen essays that examine evolutionary debunking arguments not only in ethics and philosophy of religion, but also in philosophy of mathematics, metaphysics, and epistemology. The essays move forward research on those arguments by shedding fresh light on old problems and proposing new lines of inquiry. The book will appeal to scholars and graduate students interested in the possible skeptical implications of evolutionary theory in any of the above domains.

This book offers a new theological approach to the multiverse hypothesis. With a distinctive methodology, it shows that participatory metaphysics from ancient and medieval sources represents a fertile theological ground on which to grapple with contemporary ideas of the multiverse. There are three key thinkers and themes discussed in the book: Plato and cosmic multiplicity, Aquinas and cosmic diversity, and Nicholas of Cusa and cosmic infinity. Their insights are brought into interaction with a diverse range of contemporary theological, philosophical, and scientific figures to demonstrate that a participatory account of the relationship between God and creation leads to a greater continuity between theology and the multiverse proposal in modern cosmology. This is in contrast to existing work on the subject, which often assumes that the two are in conflict. By offering a fresh way to engage theologically with multiverse theory, this book will be a unique resource for any scholar of Religion and Science, Theology, Metaphysics, and Cosmology.

A vivid and captivating narrative about how modern science broke free of ancient philosophy, and how theoretical physics is returning to its unscientific roots. In the early seventeenth century Galileo broke free from the hold of ancient Platonic and Aristotelian philosophy. He drastically changed the framework through which we view the natural world when he asserted that we should base our theory of reality on what we can observe rather than pure thought. In the process, he invented what we would come to call science. This set the stage for all the breakthroughs that followed--from Kepler to Newton to Einstein. But in the early twentieth

century when quantum physics, with its deeply complex mathematics, entered into the picture, something began to change. Many physicists began looking to the equations first and physical reality second. As we investigate realms further and further from what we can see and what we can test, we must look to elegant, aesthetically pleasing equations to develop our conception of what reality is. As a result, much of theoretical physics today is something more akin to the philosophy of Plato than the science to which the physicists are heirs. In *The Dream Universe*, Lindley asks what is science when it becomes completely untethered from measurable phenomena?

Interrogating the work of four contemporary French philosophers to rethink philosophy's relationship to science and science's relationship to reality *The Technique of Thought* explores the relationship between philosophy and science as articulated in the work of four contemporary French thinkers—Jean-Luc Nancy, François Laruelle, Catherine Malabou, and Bernard Stiegler. Situating their writings within both contemporary scientific debates and the philosophy of science, Ian James elaborates a philosophical naturalism that is notably distinct from the Anglo-American tradition. The naturalism James proposes also diverges decisively from the ways in which continental philosophy has previously engaged with the sciences. He explores the technical procedures and discursive methods used by each of the four thinkers as distinct “techniques of thought” that approach scientific understanding and knowledge experimentally. Moving beyond debates about the constructed nature of scientific knowledge, *The Technique of Thought* argues for a strong, variably configured, and entirely novel scientific realism. By bringing together post-phenomenological perspectives concerning individual or collective consciousness and first-person qualitative experience with science's focus on objective and third-person quantitative knowledge, James tracks the emergence of a new image of the sciences and of scientific practice. Stripped of aspirations toward total mastery of the universe or a “grand theory of everything,” this renewed scientific worldview, along with the simultaneous reconfiguration of philosophy's relationship to science, opens up new ways of interrogating immanent reality.

The Error of Kant

On Some Metaphysical Problems of Many Worlds Interpretation of Quantum Mechanics

Resolving the Problem of Universal Ethics

The Technique of Thought

THE FIRST BEING

Computation, Physics and Beyond

Univalent Foundations, Set Theory and General Thoughts

Probability theory promises to deliver an exact and unified foundation for inquiry in epistemology and philosophy of science. But philosophy of religion is also fertile ground for the application of probabilistic thinking. This volume presents

original contributions from twelve contemporary researchers, both established and emerging, to offer a representative sample of the work currently being carried out in this potentially rich field of inquiry. Grouped into five parts, the chapters span a broad range of traditional issues in religious epistemology. The first three parts discuss the evidential impact of various considerations that have been brought to bear on the question of the existence of God. These include witness reports of the occurrence of miraculous events, the existence of complex biological adaptations, the apparent 'fine-tuning' for life of various physical constants and the existence of seemingly unnecessary evil. The fourth part addresses a number of issues raised by Pascal's famous pragmatic argument for theistic belief. A final part offers probabilistic perspectives on the rationality of faith and the epistemic significance of religious disagreement.

Based on author's thesis (Ph. D., University of Victoria, 2010).

The central thought of this book is that definite predictions of classical physics can be explained by mathematics of special relativity. The probabilistic nature of quantum mechanics is determined by peculiar mathematics which can only describe the quantum phenomena – this mathematics gives statistical explanations to these phenomena and no other explanations could in principle be given to them; as well, the phenomena of classical physics which are to be described definitely (but not in principle probabilistically) can be described this way only because, in its turn, it is determined by peculiar mathematics and – as it is argued in the book – this simple mathematics can be straightforwardly inferred from the special relativity theory. It is shown that these important results correspond to the approach accepted in modern physics due, in particular, to Bell's inequalities and their tests. However, the author concentrates on the philosophical consequences that should be inferred from these physical results. Naturally, metaphysical views which can be congenial to this kind of physical picture of the world must agree with the concept of non-homogeneity. Such metaphysics was firstly exposed by the author in his work devoted to the non-linearity of natural language: *The World and Language: The Ontology for Natural Language* (Lanham: University Press of America, 2006). But one does not need to be familiar with this book in order to read *Physics and Metaphysics*; nor is it necessary for the reader to have any mathematical skill or serious knowledge in physics. This book will be of benefit to those interested in the fields of physics, quantum mechanics and mathematics.

This tractate is a process of stepping onto a surface of quicksand whose depth is indeterminable. The only tangible aspect of this tractate is an intuitive sense that the depth of this 'quicksand' will go well beyond Einstein and his concepts of relativity as it applies to metaphysical thought. To avoid such a journey, however, is to turn away from the true nature of metaphysics, which is to explore regions yet to be theoretically examined by science itself... To shun examining the full implications of a new metaphysical system including its impact upon the theoretical is to shun the obligations of the most

basic principles of metaphysics itself: 'To thine own self be true.' And why is the principle 'To thine own self be true.' so basic to metaphysics? Principles are so fundamentally basic to metaphysics because it is metaphysics, which deals with the most basic of principles, principles rooted in the purity of truth itself. The new metaphysical perception which the individual acting within God creates regarding Zeno, Newton, Einstein, relativity, and the modern physics of quantum mechanics is an unusual one to say the least. Modern physics is immersed in the realm of the physical universe. This is as it should be. What should not be the case however is the perplexing abstractual state of existence within which modern mathematics (the language of physics) and physics find themselves existing. Mathematics and modern physics find themselves immersed within the realm of physicality with no sense of understanding the abstractual significance of the very physical reality they are examining. Mathematics and physics are in a state of abstractual confusion. This state of abstractual confusion was not 'created' by mathematics and physics but rather was created by the inability of metaphysics to break out of its state of uncertainty regarding the most fundamental of first truths: 'I am.' 'The universe is.' '1st cause is.' This state of uncertainty regarding whether first truth is 'I am.', 'The universe is.', or '1st cause is.', once logically hurdled will allow metaphysics to once again lay down a model which can act as a challenge, act as a guide towards which the energies of mathematics and physics may be directed. Until a theoretical goal is established by metaphysical ingenuity, mathematics and physics will have no beacon towards which they can advance. Without such a beacon, mathematics and physics will have no choice but to visualize each new advance as a step into the blackness of the unknowable which they find surrounding their reality of the physical. Each step will no doubt expand their horizons, expand the very limits of their presently existing physical universe but each expansion will find itself forever being followed by the question: Into 'what' did our expanding universe just expand? ... It is this new metaphysical system, the individual acting within God which allows us to understand, in the metaphysical sense, the interrelationship between Newtonian physics and Einsteinian physics. If the new metaphysical system of the individual acting within God aids us in understanding the connection between metaphysical Newtonian physics and metaphysical Einsteinian physics, what then becomes of the 'i'. Is 'i' a grammatical error? 'i' is not a grammatical error. The 'i' is in fact, 'i' not I. ... It is through the process of following the trail the concept 'i' marks as it travels through the physics of Newton and then moves through the physics of Einstein that we gain an understanding as to the metaphysical concepts Einstein's introduction of relativity has to offer us as a species of rational, reasoning entities of individuality. So where do we begin? We begin by examining the most obvious aspect of our reality. We begin by examining what it is we find ourselves immersed within. We begin by examining the realm we call space.

The Cognitive-Theoretic Model of the Universe: A New Kind of Reality Theory

Mathematics, Metaphysics, Music, and Meaning

The Mathematical Universe

Timaeus

Panentheism Addressing Einstein and Imaginary Numbers

Nancy, Laruelle, Malabou, and Stiegler after Naturalism

This volume examines the very relationship of time and distance whether it is in a form of direct proportionality, a form of inverse proportionality, a form of time multiplied by time, or a form of space multiplied by space. This is a process of stepping onto a surface of quicksand whose depth is indeterminable. The only tangible aspect of this volume is an intuitive sense that the depth of this 'quicksand' will go well beyond Einstein and his concepts of relativity as it applies to metaphysical thought. To avoid such a journey, however, is to turn away from the true nature of metaphysics, which is to explore regions yet to be theoretically examined by science itself. To avoid addressing potentially hypothetical challenges, which a new metaphysical system may 'encounter', to avoid addressing potentially hypothetical dilemmas, which a new metaphysical system may 'suggest', is to show no confidence in the new system itself. To avoid the inevitable is in essence to shut down the very concept of what a new metaphysical system is required by its very nature to address. So how are we to delve into such an immense project as attempting to understand the concept regarding: 1. Metaphysically understanding the direct proportional interrelationship of time and distance. 2. Metaphysically understanding the interrelationship of inverse time being directly proportional to inverse of distance. 3. Metaphysically understanding the concept regarding the square of the interrelationships expressed in #1 and #2. To understand the complexity of direct, inverse, and square relationships of time and distance, we will focus upon mathematics and mathematics' fundamental explanation regarding the relationship between time and distance. If I were a mathematician, the following concepts could be seriously considered for their mathematical soundness. Since I am not a mathematician, rather than the mathematical soundness of the arguments being the points to consider, one might better focus upon the metaphysical implications of what bits and pieces may emerge from the following examination of mathematics and what clues mathematics might conceivably provide metaphysics regarding an understanding of what lies outside the physical. Having established a defense for any irrationality which may emerge from the remainder of this volume, let's explore where reason, fused with mathematics, might take us in regards to metaphysics as we attempt to resolve the puzzling state existing between Zeno's 'i', Newton's 'i', and Einstein's 'i'. The new metaphysical perception which the individual acting within God creates regarding Zeno, Newton, Einstein, relativity, and the modern physics of quantum mechanics is an unusual one to say the least. Modern physics is immersed in the realm of the physical universe. This is as it

should be. What should not be the case however is the perplexing abstractual state of existence within which modern mathematics (the language of physics) and physics find themselves existing. Mathematics and modern physics find themselves immersed within the realm of physicality with no sense of understanding the abstractual significance of the very physical reality they are examining. Mathematics and physics are in a state of abstractual confusion. This state of abstractual confusion was not 'created' by mathematics and physics but rather was created by the inability of metaphysics to break out of its state of uncertainty regarding the most fundamental of first truths: 'I am.' 'The universe is.' '1st cause is.' Until a theoretical goal is established by metaphysical ingenuity, mathematics and physics will have no beacon towards which they can advance. Without such a beacon, mathematics and physics will have no choice but to visualize each new advance as a step into the blackness of the unknowable which they find surrounding their reality of the physical.

Max Tegmark leads us on an astonishing journey through past, present and future, and through the physics, astronomy and mathematics that are the foundation of his work, most particularly his hypothesis that our physical reality is a mathematical structure and his theory of the ultimate multiverse. In a dazzling combination of both popular and groundbreaking science, he not only helps us grasp his often mind-boggling theories, but he also shares with us some of the often surprising triumphs and disappointments that have shaped his life as a scientist. Fascinating from first to last—this is a book that has already prompted the attention and admiration of some of the most prominent scientists and mathematicians.

This book is an attempt to integrate the knowledge gained from modern physics, cosmology and biology with some notions in metaphysics concerning being and time. The fragmentation of our knowledge due to the very narrow specialization of modern science led to the abandonment of the search for the meaning of the events along the history of the universe and the Master Plan behind these events. The creation of the universe and the appearance of life on earth and the development of intelligence and consciousness must have some purpose. The author wonders whether these major events are but the revelations of one Being. What are the attributes of this First Being and how may we gain knowledge of Him? these are some of the questions attempted for answers by the author.

This book uses modern mathematical metaphors to better understand religion and philosophy.

Science and Ultimate Reality

Ethics, Philosophy of Religion, Philosophy of Mathematics, Metaphysics, and Epistemology

Time and the Multiverse

Why Mathematics Is Unreasonably Effective In Physics

Reflections on the Foundations of Mathematics

The Error of Einstein

A Guide to Modern Metaphysics and Manifestation

Regarding paradoxes, Wittgenstein stated: 'It is the business of philosophy not to resolve a contradiction by means of a mathematics or discovery but to get a clear view of the state of ... affairs before the contradiction is resolved. (And this does not mean that one is side-stepping a difficulty.) Wittgenstein believed philosophy has the responsibility to resolve paradoxes through an interpretation of what seems most reasonable. It is then mathematics and logic, which follow and validate or invalidate such a view. It is the function of the philosopher's field known as metaphysics to examine the concept of the whole. Is the physical the whole? If the physical is not the whole then what is beyond the physical, meta - beyond, physics - the physical? Kant proposed a metaphysical system of limited existence 'containing' infinite possibilities. Such a perception is metaphysical in nature for it places a limit upon the whole leading to the question regarding what lies beyond the limit itself. Such a topic lies well beyond the parameters regarding a dialectic of space and time. In fact, such a topic lies beyond the parameters regarding a dialectic of the void of space and time. We will not ignore such a topic, rather we will address the topic of what lies beyond the limits of the whole in Tractate 18: The Emergence of Theoretical Metaphysics. What then are we to examine within this tractate: Tractate 6: Kant and the Void of Space and Time? We are to examine space and time, the void of space and time, passive observation, active observation. In spite of the pronouncements of philosophers to follow Kant, meta-physics, is not dead. Meta-physics has just been set aside while we await a new metaphysical system. Kant said we have no choice but to establish a more comprehensive metaphysical system before we relegate his system to the archives of ancient history. Such then becomes the task of this dialectic for the very purpose of this work to establish both a new metaphysical model and the rationality regarding the new metaphysical model. As we see, however, the task of 'replacing' Kant's system is not to be attempted through the process of destroying Kant's metaphysical model but rather the new model is established through the process of fusing Aristotle's, Kant's, and Hegel's model all into one metaphysical model. First: The universe evolves as our thoughts evolve. Second: The concept of a system is critical to metaphysics. Regarding the first concept: The perception, the universe evolves as our thoughts evolve, provides the rationale as to why our understanding of the 'Greater' picture is important. The concept that the universe evolves as our thoughts evolve implies we actively 'form' what 'will be' as opposed to the past Aristotelian perception that we are merely observers of 'what is'. Regarding the second concept: Kant was the first to propose such a new concept as the universe itself evolving as our thoughts evolved. Kant turned metaphysics and thus philosophy on its head just as Copernicus turned cosmology and thus science on its head. Kant was the first metaphysician to step beyond the perceptual metaphysical perception of the day. Kant was able to step beyond the perception of the day regarding the observer passively observing. Kant, however, was unable to step beyond the perception of the day regarding the existence of an Aristotelian closed system. Such conflicting positions generated unwieldy metaphysical contradictions. Kant innovated a perception incapable of being 'confined' within an Aristotelian closed system and thus found himself incapable of finding both first truth and his dearly sought categorical imperative. It is these two concepts, truth and categorical imperatives, that this work will examine and resolve.

Does science have all the answers? Can it even deal with abstract reasoning which reaches beyond the world experienced by us? How can we be so sure that the physical world is sufficiently ordered to be intelligible to humans? How is it that mathematics, a product of human minds, can unlock the secrets of the physical universe? Are all such questions to be ruled out as inadmissible if science cannot settle them? Metaphysics has traditionally been understood as reasoning beyond the reach of science, sometimes even claiming realities that are beyond

its grasp. Because of this, metaphysics has often been contemptuously dismissed by scientists and philosophers who wish to remain within the bounds of what can be scientifically proven. Yet scientists at the frontiers of physics unwittingly engage in metaphysics, as they are happy to contemplate whole universes that are, in principle, beyond human reach. Roger Trigg challenges those who deny that science needs philosophical assumptions. In fact, Trigg claims that the foundations of science themselves have to lie beyond science. It takes reasoning apart from what can be experienced to discover what is not yet known, and this metaphysical reasoning to imagine realities that cannot be accessed. "In *Beyond Matter*, Roger Trigg advances a powerful, persuasive, fair-minded argument that the sciences require a philosophical, metaphysical foundation. This is a brilliant book for new-comers to philosophy of science and experts alike." —Charles Taliaferro, professor of philosophy, St. Olaf College

Paperback version of the 2002 paper published in the journal *Progress in Information, Complexity, and Design (PCID)*. ABSTRACT Inasmuch as science is observational or perceptual in nature, the goal of providing a scientific model and mechanism for the evolution of complex systems ultimately requires a supporting theory of reality of which perception itself is the model (or theory-to-universe mapping). When information is the abstract currency of perception, such a theory must incorporate the theory of information while extending the information concept to incorporate reflexive self-processing in order to achieve an intrinsic (self-contained) description of reality. This extension is associated with a limiting formulation of model theory identifying mental and physical reality, resulting in a reflexively self-generating, self-modeling theory of reality identical to its universe on the syntactic level. By the nature of its derivation, this theory, the Cognitive Theoretic Model of the Universe or CTMU, can be regarded as a supertautological reality-theoretic extension of logic. Uniting the theory of reality with an advanced form of computational language theory, the CTMU describes reality as a Self Configuring Self-Processing Language or SCSPL, a reflexive intrinsic language characterized not only by self-reference and recursive self-definition, but full self-configuration and self-execution (reflexive read-write functionality). SCSPL reality embodies a dual-aspect monism consisting of infocognition, self-transducing information residing in self-recognizing SCSPL elements called syntactic operators. The CTMU identifies itself with the structure of these operators and thus with the distributive syntax of its self-modeling SCSPL universe, including the reflexive grammar by which the universe refines itself from unbound telenesis or UBT, a primordial realm of infocognitive potential free of informational constraint. Under the guidance of a limiting (intrinsic) form of anthropic principle called the Telic Principle, SCSPL evolves by telic recursion, jointly configuring syntax and semantics while maximizing a generalized self-selection parameter and adjusting on the fly to freely-changing internal conditions. SCSPL relates space, time and object by means of conspansive duality and conspansion, an SCSPL-grammatical process featuring an alternation between dual phases of existence associated with design and actualization and related to the familiar wave-particle duality of quantum mechanics. By distributing the design phase of reality over the actualization phase, conspansive spacetime also provides a distributed mechanism for Intelligent Design, adjoining to the restrictive principle of natural selection a basic means of generating information and complexity. Addressing physical evolution on not only the biological but cosmic level, the CTMU addresses the most evident deficiencies and paradoxes associated with conventional discrete and continuum models of reality, including temporal directionality and accelerating cosmic expansion while preserving virtually all of the major benefits of current scientific and mathematical paradigms.

This book examines Aristotle's critical reaction to the mathematical cosmology of Plato's Academy, and traces the aporetic method by which he developed his own cosmological and metaphysical views, which underpin his philosophy of mathematics.

Resolving the Problem of Physical Time & Space

Introspective Cosmology II

Foundations of Mathematics

The Multiverse

Beyond Matter

Aporetic Method in Cosmology and Metaphysics

This book is an attempt to explore various aspects of the enneagram, the symbol that G. I. Gurdjieff introduced to the modern world, and which he stated represented a complete description of the laws governing the universe. Because of the importance he attached to it, it has long intrigued followers of his teaching, and others, yet the understanding of its meanings remains very incomplete. In particular, how it relates to modern mathematical and scientific descriptions of the laws governing the universe has largely been unexplored. This book tries to find connections between these two approaches to the truth, while also recognizing and exploring the differences between knowledge based on symbols and that based on scientific theories and mathematical formulae.

For over 2,000 years, philosophers, teachers, scientists and everyday people have been interested in manifestation and attraction concepts. And now, science and quantum physics support many of the original observations about how people are connected to the vast universe of energy and information. But how can we update the centuries of wisdom to a modern, practical and usable manifestation process to achieve our individual goals? Richard used his research expertise to analyze the historical teachings and the everyday evidence to create a new, practical manifestation concept with simple to use practices. If you believe that you are what you think, and attract what you think about, there is now a process to manage your thoughts, choices and actions to achieve your goals. We see the evidence of successful manifestation all around us -people achieving their goals every day. Manifestation has three stages: thoughts process outcomes. We can easily observe the original thoughts and the eventual outcomes. But what happens in the middle to create a successful outcome? What is the formula for success? Richard has reverse engineered manifestation we can observe and filled in the steps that have been missing for how to transform thoughts into successful outcomes. Every thought does not become your reality. But there is a process and math-based goal to achieve the critical balance of positive thoughts to negative thoughts to enter the successful manifestation zone. Its almost that simple if you have the right guidance and a way to monitor to your progress. Manifestation Math is a practical, simple process to manifest goals using the basic math of the universe. As Willie Nelson said, if you replace negative thoughts with positive thoughts, you will have a positive result. Manifestation Math has created a simple process to bring this wisdom to everyone.

Delineates the knowable from the unknowable in philosophy, science, and theology. Offering readers much

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to ponder, Richard H. Jones approaches the “big questions” of philosophy such as the nature of reality, consciousness, free will, the existence of God, and the meaning of life not by weighing the merits of leading arguments in these debates, but instead by questioning the extent to which we are even in a position to answer such questions in the first place. Regardless of continuous technical and even groundbreaking advances in knowledge, there will always be gaps in what we can fully understand. Distinguishing true mysteries from problems yet to be solved but within the scope of our intellectual grasp, Jones provides a penetrating and high-level overview of the scope and limits of scientific and philosophical inquiry. “Exceptionally original, *Mystery 101* specializes in questions rather than answers but also analyzes in fascinating detail a whole host of putative answers to the fundamental questions it raises. The book is a wide-ranging, thought-provoking treat. It shows why daunting, seemingly unfathomable mysteries underlie many of our most confident assumptions and claims to truth. And it counsels us wisely on how to live in the face of this fact. The scholarship is impeccable, drawing on many sources, including those of religion (and not just Western religion), philosophy (and not just Western philosophy), science, and literature. An insightful and enjoyable read.” – Donald A. Crosby, author of *The Extraordinary in the Ordinary: Seven Types of Everyday Miracle* “Jones takes us on an interesting journey through all the big questions that perplex people. We end up knowing a lot but, as Socrates, knowing that we do not and indeed cannot know enough. Clear, engaging, and accessible, the book is a bit of a tour de force.” – George Allan, author of *Modes of Learning: Whitehead’s Metaphysics and the Stages of Education*

Despite its enormous practical success, many physicists and philosophers alike agree that the quantum theory is full of contradictions and paradoxes which are difficult to solve consistently. Even after 90 years, the experts themselves still do not all agree what to make of it. The area of disagreement centers primarily around the problem of describing observations.

foundations

Quantum Theory, Cosmology, and Complexity

A Theological Exploration

The Pythagorean World

The Singular Universe and the Reality of Time

Psycho Mathematics

Metaphysical Experiments

Publisher Description

This volume contains the proceedings of the Logic at Harvard conference in honor of W. Hugh Woodin's 60th birthday, held March 27–29, 2015, at Harvard University. It presents a collection

of papers related to the work of Woodin, who has been one of the leading figures in set theory since the early 1980s. The topics cover many of the areas central to Woodin's work, including large cardinals, determinacy, descriptive set theory and the continuum problem, as well as connections between set theory and Banach spaces, recursion theory, and philosophy, each reflecting a period of Woodin's career. Other topics covered are forcing axioms, inner model theory, the partition calculus, and the theory of ultrafilters. This volume should make a suitable introduction to Woodin's work and the concerns which motivate it. The papers should be of interest to graduate students and researchers in both mathematics and philosophy of mathematics, particularly in set theory, foundations and related areas.

This book explores precisely how mathematics allows us to model and predict the behaviour of physical systems, to an amazing degree of accuracy. One of the oldest explanations for this is that, in some profound way, the structure of the world is mathematical. The ancient Pythagoreans stated that "everything is number". However, while exploring the Pythagorean method, this book chooses to add a second principle of the universe: the mind. This work defends the proposition that mind and mathematical structure are the grounds of reality.

The universe is a mathematical hologram. It's made of ontological mathematics. It's a living, thinking, self-optimising holographic organism composed of immortal, indestructible, ontological mathematical units called monads, defined by the most powerful and beautiful equation in the whole of mathematics: Euler's Formula. Monads have a much more resonant name: souls. We all inhabit Soul World, a wondrous immaterial Singularity outside space and time. Our souls are individual mathematical singularities: autonomous, uncaused, uncreated, dimensionless frequency domains. Via Fourier mathematics, these imperishable, immaterial monadic souls can collectively create the spacetime domain of the material world. Where each soul is a single frequency domain, the material world of space and time is their collective Fourier output. What is "matter"? It's simply dimensional energy: energy existing in the Fourier spacetime domain rather than in the Fourier dimensionless frequency domain. Welcome to Soul World.

Mind and Nature

Our Mathematical Universe

How Fundamental Physics Lost Its Way

My Quest for the Ultimate Nature of Reality

Mystery 101

Selected Writings on Philosophy, Mathematics, and Physics
The Dream Universe

The Physics Notes contains some of the most astounding insights into physics since Newton discovered the law of gravity. This book is not for light reading. It is written from a standpoint of higher intelligence lecturing the author on the sub-ordinate laws of the universe and the primary components and construction schematics of this physical universe and does so in very complex terms and definitions. Unless you are a physicist or mathematician, this book is only recommended if you have an aptitude for such things as proto-particle theory, mass-weight distribution theories, senso-physic componentry and ordinate math protocols! This book is not written for the layman but can be read by anyone, given that this book also contains theories or posits concerning the physics of love or compassion. Even though this may appear at first sight to seem nonsensical or ridiculous, one must remember that love is a physical and sensory experience by physical beings and therefore must in some possible way fit into the larger scheme of the physical construction of this universe. The Physics Notes is also written from a parapsychic perspective in that the author is not a physicist and neither is he good at physics! He is the brunt of some serious lecturing on the mechanics of a universe that is beyond his perception and yet right in the center of his lap, while his instruction is occurring. The Physics Notes is the finest example of proto-physics documentation that has ever been anchored in literature and will remain a seminal account of the foundation and creation of this physical and meta-physical universe, bar none. Nothing like this has ever been published until now, and most likely will not be repeated anytime soon. So, buckle in for a very stimulating conversation on the metaphysical and proto-dynamic metaconstruction of this universe and beyond. Published by Rodaian Press, Laguna Beach, California. Nonfiction/New Age, First Authorized Paperback Edition. 6 in. x 9 in. Premium Quality Paperback <http://www.Rodaian.com/> **REVIEWS FROM THE BACK COVER: AMAZING!!! BIZARRE AND THRILLING!! EXTRAORDINARY!!! This is an instant classic!! Heralded as a true exception to the time!! The Physics Notes makes sense!!! John Henry Morel writes like no other author!! Be prepared to be shocked and amazed!!! An instant classic!!! Behold, an original work above all others!! Mozart and Beethoven never knew these laws!! I wish I could read it over and over again!!! Seismic and Mighty!! A splendid achievement!! A superb achievement with Gothic resonance and light!!! From the Goldspars & Segesis master himself!!! Blinding and truthful at once!!! ABOUT THE AUTHOR: John Henry Morel is the author of over 50 books in the fields of theoretical particle physics, mathematics and metaphysics. He is the bestselling author of Primary Math and How to Be a Millionaire. His books are sold worldwide**

Hermann Weyl (1885-1955) was one of the twentieth century's most important mathematicians, as well as a seminal figure in the development of quantum physics and general relativity. He was also an eloquent writer with a lifelong interest in the philosophical implications of the startling new scientific developments with which he was so involved. Mind and Nature is a collection of Weyl's most important general writings on philosophy, mathematics, and physics, including pieces that have never before been published in

any language or translated into English, or that have long been out of print. Complete with Peter Pesic's introduction, notes, and bibliography, these writings reveal an unjustly neglected dimension of a complex and fascinating thinker. In addition, the book includes more than twenty photographs of Weyl and his family and colleagues, many of which are previously unpublished. Included here are Weyl's exposition of his important synthesis of electromagnetism and gravitation, which Einstein at first hailed as "a first-class stroke of genius"; two little-known letters by Weyl and Einstein from 1922 that give their contrasting views on the philosophical implications of modern physics; and an essay on time that contains Weyl's argument that the past is never completed and the present is not a point. Also included are two book-length series of lectures, *The Open World* (1932) and *Mind and Nature* (1934), each a masterly exposition of Weyl's views on a range of topics from modern physics and mathematics. Finally, four retrospective essays from Weyl's last decade give his final thoughts on the interrelations among mathematics, philosophy, and physics, intertwined with reflections on the course of his rich life.

Is there a mechanism through which some people can see the future? How can a life in this universe be predetermined? Where might information about the future exist? If we are to have faith in our grasp of physics and cosmological principles, it must exist outside this universe. How can we structure a multiverse so that it broadly accommodates precognition? In *Time and the Multiverse*, author Dr. Gerald Holdsworth addresses these questions and more and discusses phenomena that cannot be explained by the principles of established physics. Holdsworth accepted the challenge of explaining the basis behind the common experience of precognition, the easiest phenomena to verify but the hardest to explain. He tells how he built a looped version of the serial, time-zoned multiverse which exhibits time zoning within the regular clock time system as well as revealing what can be termed a timing system, which coordinates the processes within the multiverses Cosmic quantum computer. This second time is in practice represented by a fixed frequency of time pips occurring within the computer. Author notes What I present in chapter 2 of this book concerning the dynamics of the multiverse cannot be described by mathematical equations because the physics isn't available. I have relied entirely on logical statements and geometry to produce the Cosmic Blueprint and, from a special case of it, the Cosmological model. Arthur Eddington and Wolfgang Pauli knew that to achieve a complete understanding of our existence one has to include all the unexplained anomalies (like precognition) along with established physics: quantum mechanics, particle physics and Einstein's gravity theory. Eddington and John W Dunne realized that time would play a major role in tying together all the evidence. Dunne's attempts ending in 1955 were invalid due to his deliberate exclusion of the existence of multiple universes. He did at least finally confess his spiritual experiences. Instead of diligently observing the "external" world of sounds and colored shapes, suppose one were to concentrate on the "internal" world of the mind and its purely mental activity. Is it possible one could thereby uncover a principle leading to the basic laws governing the structure of the universe and its contents? These days, it's popular to refer to such an undertaking as a "fool's errand." For all of that, the author dares to claim this: By focusing his power of attention inward upon the necessary structure of every act of

consciousness, he has found therein a principle which soon leads to the conclusion that something best called "potential being" admits of six different kinds which can be actualized in two very different ways. With that conclusion, the mathematical flood gates are thrown wide open to ontology (a/k/a general metaphysics), and a radically new kind of ontology is born; one capable of a deluge of algebraic and/or geometrical inferences very similar to what science says of our universe. The implications for philosophy and science are monumental to say the least. For one thing, the wall between general metaphysics (a/k/a ontology) and special metaphysics (i.e.: in so far as it is cosmology) comes tumbling down and necessarily brings with it the wall between physics and metaphysics (i.e.: in so far as the latter is ontology and cosmology). To be sure, the author nowhere claims his theory is 100% successful. There are large gaps which he hopes others will help him fill. Still, his theory is successful enough to make your hair stand on end and to leave no doubt that philosophy has here raised a formidable challenge to science's claim to be the superior guide to cosmological enlightenment. For the principles of physics are here joined to those of metaphysics in the most amazing and extensive synthesis ever seen in writing. Without any question, this is the kind of ontology and metaphysics of which earlier philosophers dared only to dream and then only in the wildest of their dreams. What is presented in these pages is the theory as it stands after approximately forty-two years of strenuous effort on the part of a single author working utterly alone. You might think that would necessarily mean pages filled with the kind of math only a few specialists could even begin to follow. You will be pleasantly surprised to find that much of the math is simple arithmetic, and the remainder hardly ever rises above simple high school algebra and geometry. Most readers with no more than a high school education and an average IQ will find the math easy to follow. The quantity of the math may be a bit daunting; but, the kind of it is not even remotely close to the complexity of calculus (a kind of math of which this author has not the slightest knowledge.) The simplicity of the math stems from the fact that this book's theory contains none of the "mathematical antinomies" (as they are commonly called) which haunt most cosmologies. In turn, that absence arises from the fact that, in this book's theory, motion in so far as it is change of spatial or temporal location is discontinuous. Here, such changes occur instantaneously in well defined quantities and at well defined frequencies. As a result, there is no need for any talk about infinitely small or infinitely large this, that, or the other. Understandably, once that kind of talk is eliminated, you're left with a purely logical universe whose every aspect can be described by very simple forms of mathematics. Plunge into the book, and see if you agree.

The Foundations of Human Existence

The Physics Notes

Quantum Theory according to the Everett Interpretation

Evolutionary Debunking Arguments

Physics and Metaphysics

Metaphors, Metaphysics, Metamathematics, and the Nature of Things

A Dialectical "theory of Everything" -- Meta-genealogies of the Universe and of Its Sub-universes, a Graphical Manifesto

Building on the seminal work of Kit Fine in the 1980s, Leon Horsten here develops a new theory of arbitrary entities. He connects this theory to issues and debates in metaphysics, logic, and contemporary philosophy of mathematics, investigating the relation between specific and arbitrary objects and between specific and arbitrary systems of objects. His book shows how this innovative theory is highly applicable to problems in the philosophy of arithmetic, and explores in particular how arbitrary objects can engage with the nineteenth-century concept of variable mathematical quantities, how they are relevant for debates around mathematical structuralism, and how they can help our understanding of the concept of random variables in statistics. This fully worked through theory will open up new avenues within philosophy of mathematics, bringing in the work of other philosophers such as Saul Kripke, and providing new insights into the development of the foundations of mathematics from the eighteenth century to the present day.

This book chronicles the development of the Cognitive-Theoretic Model of the Universe (CTMU) from the first essays in the ultra-high IQ journals in 1989 to its breakthrough interpretation of quantum mechanics in 2019 and explication of reality as a self-simulation in 2020. CONTENTS PART I – Early Writings 1 The Resolution of Newcomb's Paradox 2 On the CTMU 3 Introduction to the CTMU PART II – The CTMU 4 The Cognitive-Theoretic Model of the Universe: A New Kind of Reality Theory PART III – Uncommon Dissent 5 Cheating the Millennium: The Mounting Explanatory Debts of Scientific Naturalism PART IV – Cosmos & History 6 An Introduction to Mathematical Metaphysics 7 Metareligion as the Human Singularity 8 The Metaformal System: Completing the Theory of Language 9 Introduction to Quantum Metamechanics (QMM) 10 The Reality Self-Simulation Principle: Reality is a Self-Simulation

The multiverse is a concept that acknowledges the existence of a multiplicity of worlds or universes. The designs of these universes do not have to be the same as our universe, but we have no clear view of what the "other" designs might be. It is suspected that they can obey different laws of physics and different constants of physics, which further implies different chemistry, biology, and life. Some say that the universes within the multiverse allow for different mathematics or even for different metamathematical logic. This book discusses most of the above aspects of the multiverse concept starting with the philosophy, through all the mathematical and physical subtleties, finally exploring the origin of life and consciousness. This book provides a satisfying intellectual exploration of front-edge advances in contemporary cosmology.

This edited work presents contemporary mathematical practice in the foundational mathematical theories, in particular set theory and the univalent foundations. It shares the work of significant scholars across the disciplines of mathematics, philosophy and computer science. Readers will discover systematic thought on criteria for a suitable foundation in

mathematics and philosophical reflections around the mathematical perspectives. The volume is divided into three sections, the first two of which focus on the two most prominent candidate theories for a foundation of mathematics. Readers may trace current research in set theory, which has widely been assumed to serve as a framework for foundational issues, as well as new material elaborating on the univalent foundations, considering an approach based on homotopy type theory (HoTT). The third section then builds on this and is centred on philosophical questions connected to the foundations of mathematics. Here, the authors contribute to discussions on foundational criteria with more general thoughts on the foundations of mathematics which are not connected to particular theories. This book shares the work of some of the most important scholars in the fields of set theory (S. Friedman), non-classical logic (G. Priest) and the philosophy of mathematics (P. Maddy). The reader will become aware of the advantages of each theory and objections to it as a foundation, following the latest and best work across the disciplines and it is therefore a valuable read for anyone working on the foundations of mathematics or in the philosophy of mathematics.

Chris Langan's Major Papers 1989–2020

Science without Numbers

The Enneagram of G. I. Gurdjieff

The Key to the Universe

Physics and the Invention of the Universe

The Metaphysics and Mathematics of Arbitrary Objects

Why Science Needs Metaphysics

The Emergent Multiverse presents a striking new account of the 'many worlds' approach to quantum theory. The point of science, it is generally accepted, is to tell us how the world works and what it is like. But quantum theory seems to fail to do this: taken literally as a theory of the world, it seems to make crazy claims: particles are in two places at once; cats are alive and dead at the same time. So physicists and philosophers have often been led either to give up on the idea that quantum theory describes reality, or to modify or augment the theory. The Everett interpretation of quantum mechanics takes the apparent craziness seriously, and asks, 'what would it be like if particles really were in two places at once, if cats really were alive and dead at the same time'? The answer, it turns out, is that if the world were like that—if it were as quantum theory claims—it would be a world that, at the macroscopic level, was constantly branching into copies—hence the more sensationalist name for the Everett interpretation, the 'many worlds theory'. But really, the interpretation is not sensationalist at all: it simply takes quantum theory seriously, literally, as a description of the world. Once dismissed as absurd, it is now accepted by many physicists as the best way to make coherent

sense of quantum theory. David Wallace offers a clear and up-to-date survey of work on the Everett interpretation in physics and in philosophy of science, and at the same time provides a self-contained and thoroughly modern account of it—an account which is accessible to readers who have previously studied quantum theory at undergraduate level, and which will shape the future direction of research by leading experts in the field.

An Introduction to the Big Questions and the Limits of Human Knowledge