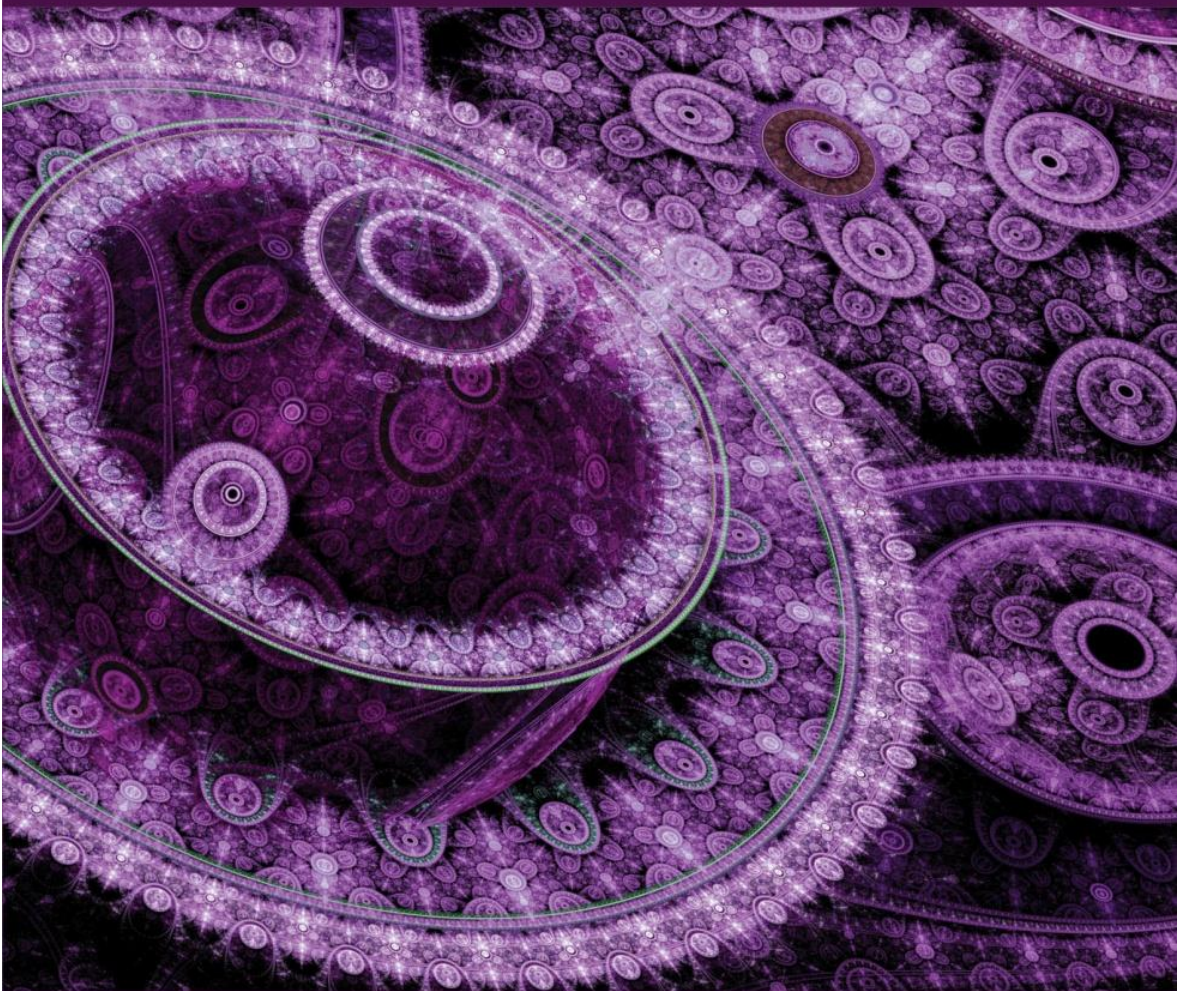


Jonathan R. Banks



A New World

Book I

**The Science of
Higher Dimensional Computation
and Metaphysics**

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To Eileen my late wife who supported me through the original version of this book. To my mother and sister who have struggled so much in life and yet been so brave and good natured. To Tesia who originally encouraged me to get back into my work and then looked after me when I was working seven days a week. Finally to Alana and Jason this is for you.

Praise for *A New World*

“I have had the opportunity to read more of your truly fascinating book. You have done an incredible amount of work! Most impressive! It is also an excellent resource/reference source! Thank you so much for sending me your book.”

R. Joseph, PhD neuroscientist and author of over 51 peer reviewed scientific papers and books including “*Astrobiology, the Origin of Life, and the Death of Darwinism*”, “*Hitler's Diaries, Starring Adolf Hitler: The Rise & Fall of Adolf Hitler*”, “*The Transmitter to God*”, “*Neurotheology: Brain, Science, Spirituality, Religious Experience*”

“In principal Section Two of Book Two alone would be worth a PhD based on the quality of work.”

Sohail Inayatullah PhD Professor of futures research with the IMC, UNESCO chair at University of Trier.

“A very informative and provocative book, filled with well thought out and thoroughly researched ideas.”

Trevor Douglas PhD Nutritional Biochemist

“Jonathan’s fascinating model of an *Ideas Generation Engine* represents at least 6 legitimate AI research programs.”

Professor Aditya Ghose University of Wollongong School of Computer Science and Software.

“I feel this book is a masterful overview of the cutting edge of Quantum information and how it interfaces with traditional mysticism/ metaphysics.”

Ramon Sender

“So far I have read the first two sections of your book (to page 166). It must have been a tremendous effort to collate and evaluate all this material, tie it beautifully together and supersede it with your own theory. You did a good job of it, and in general terms I am in full agreement with your position. However, I have looked at it from a different perspective and came to a different understanding of the quantum world. Nevertheless, I believe that both of our theories complement each other.”

Walter Last biochemist, nutritionist and ND, author of “*The Natural Way to Heal*”, “*Heal Yourself*” and “*Healing Foods*”

“In terms of content: The breadth and scope of Banks' intellectual grasp is remarkable. People who have read Stephen Hawking's 'A Brief History of Time,' and/or Michael Talbot's 'The Holographic Universe,' or who are familiar with the concept of the Singularity will be on largely familiar territory.

The material speaks for itself to anyone who has a reasonable understanding of most of the subject areas that he treats, as reflecting broad and deep knowledge and thought, as well as being important to consider. For non-scientist readers, the book can be considered a report on some of the more interesting activities and ideas in scientific research and how they are likely to affect human life during most of our lifetimes.

Although Banks adds his own comments, theories and speculations freely, his quotations and citations of the work of prominent, respected, creative scientists are factual, relevant and well-organized around his themes. This is very interesting and relevant.”

George Henry

“To me, this book came as a huge breath of fresh air. Jonathan Banks proposes a number of exciting, individual and original ideas. A journey down these paths is enormously rewarding. His arguments are cogently and lucidly disposed, he writes well and engagingly. A book like this immensely readable volume is a work of substance that examines its subject matter thoughtfully, is intellectually stimulating and opens rewarding avenues of thought.”

Mark Sykes, Senior Editor

Contents

Author to Reader

Overview

Section One: The Scientific Worldview	17
Science — Spirituality and the Singularity	17
The Promise of Science	25
The Worldview of Science	43
When Science is Biased	58
Science versus Religion	79
Philosophy	86
Mesmerised By Measurement	94
Reductionism	98
Thinking and Learning Styles	107
True Objectivity—A Cultural Myth of Science	122
Logic and Cause Effect	126
Science and the Supernatural	130
Wisdom from the Past	137
Modern Language versus Ancient Language	141

Section Two: A Metaphysical Scientific Worldview	152
---	------------

Quantum Myths	152
Is The Quantum Vacuum A Higher Dimension?	162
Twistors Loops and Strings	176
Problems with Quantum Space-Time	182
Why Time Entropy and 3 Dimensions?	189
Applications of Higher Dimensional Physics	195
The Big Flash	198
God Consciousness and Life	215
Mystical and Mathematical Insight	226
It's All Connected	237
A Spiritual Scientific Worldview	244
A Comparison of Worldviews	260
A New World	265

Section Three: The Information Universe	277
--	------------

Does The Universe Compute?	282
The Universe as a Mind	294
Quantum Information	299
Fundamental Information	302
Where Does The Complexity Come From?	307
The Set Theory Universe	315
The Information Universe	321
A Turning Point for Humanity	338
Consciousness in the Information Universe	346
God in an Information Universe	353
A God We Can Work With	361

Section Four: Life	367
Scientific Definitions of Life	372
Origins of Life: Is it All in the Chemistry?	376
Life Is a Continuum	383
Artificial Life Information and Computation	388
Life Is Computing	412
Life Uses Quantum Technology	420
Non-Local Bio-Information	431
Design and the Laws of Physics	436
Evolution—Is There Design?	442
Evolution and the Trend to Complexity	448
Is There a Lifeforce?	461
Hyperspatial Life and Intelligence	477
The Future of Evolution	488
Notes	495
Bibliography	508
Table and Figures List	512
About the Author	515

Author to Reader

I have written this book series to begin building bridges between differing worldviews, leading to a new metaphysical scientific worldview. Metaphysical is an adjective that means pertaining to the philosophical study of being and knowing. We need to be prepared to let go of cherished ideas about ourselves and reality. We are witnessing the biggest changes in human history; we need to understand where these changes are taking us, and how we can direct them. If ever there was a time to build bridges and not burn them, it is NOW! The survival of humanity and our enlightenment is up to us. The good is getting better and the bad is getting worse, it's a race against time, which we can win if we act.

I thank all the scientists whose works I have read, they have been an inspiration. I respect their achievements, innovation and willingness to think *outside the box* and to courageously pursue new frontiers in the true spirit of science. It's hard to challenge the scientific orthodoxy when faced with criticism. Only by *pushing the envelope* of our beliefs and understanding and learning from the past, will we be able to lift ourselves sufficiently to *survive the transition*. The more scientists and thinkers who thrive in this spirit, the more hopeful I am we will make it!

I thank all of the ancient mystics and philosophers who dedicated their lives to the pursuit of enlightenment. These courageous and extraordinary individuals have led humanity by demonstrating the immense potential of the human mind. They have gone where others have feared to tread, and brought back mysteries of the universe. They have supplied us with sophisticated models of mind and consciousness, as well as practical applications of this knowledge and timeless wisdom. They have foreseen the great evolutionary transition of humanity and left us their advice on how best to navigate it.

I have written this book series for the moderate scientist, non-scientist, metaphysician, materialist, theologian, spiritualist, and atheist, who are not fully convinced by the worldviews they subscribe to. I ask that you read this book with an open mind and an open heart. I hope it leads to inspiration and perhaps helps you journey through the transition to a new worldview pro-actively and positively.

Others who would find it interesting may be looking for a more formal and logically consistent model. A model that is more intuitive, congruent, expansive and fundamental than the current mainstream scientific or modern spiritual worldviews. You may feel the universe, life, and consciousness are more mysterious than scientific, yet science can shed light on it nonetheless. You may have a yearning for a more spiritual or metaphysical interpretation, which may not be religious or new age in its approach. This book series is also written for anyone who is seriously interested in our future, and how we can manage the enormous challenges we face and yet still create an incredible future.

I originally wrote this book series between 1997 and 2001, since then I have substantially improved and extended my model of the quantum vacuum as a higher dimension, including an extension of the cosmological implications and new ideas on technological possibilities. Many of the things I predicted have happened, some things didn't happen at all or went in an unexpected direction, but basically it is moving along the way I envisioned in good and bad ways. Nothing has changed in quantum theory; physicists still believe they are dealing with the small scale end of space-time and not a higher dimension, so the field is as stuck as ever. String theory hasn't produced the breakthrough it promised, even with an enormous amount of physicist working on it now for over twenty years. I believe it won't due to the erroneous belief described above.

The consciousness debate has heated up and become more extensive, driven as I predicted largely by the rapid improvement of AI and robotics, which we are finally beginning to see. This is forcing us to understand more about what makes us different, less or more than AI. However the mainstream are still completely convinced that consciousness is created by the brain and as I had thought, the better AI gets

the more convinced of that they are and that AI will also be conscious. I came up with an idea in 2014, I call the *conscious observer test* using the double slit experiment, to test if AI is conscious. There has been an exciting breakthrough with experimental proof of quantum coherence in neuronal microtubules, which adds weight to the Orch OR model of quantum consciousness in the brain. This is important as it's indirect proof that the brain mediates and not generates consciousness, which means it's a fundamental property of the universe. I held off publication of the original version of this book series fifteen years ago to write about this model, as I claimed the brain was quantum computing and living things would be bristling with nanoscale quantum technology. Since then there have been more discoveries of life using quantum technology and a new field of quantum biology emerged around 2011.

It looked like nothing much was happening in the world, but in the last five years it's really become apparent that the world is starting to go through some serious upheavals and exciting changes. My view is that our current technology hasn't tolerated human evil very well, hence the global mess we are in, and that emerging disruptive technologies will have even less tolerance, which means the imperative to raise consciousness is ever more critical. As the brain is the key to this and neurotechnology is the key to naturally empower brains, it's still the only way I can see to uplift enough people powerfully and fast enough to enable us to survive.

Jonathan Robert Banks
Woonona Australia
January 2016

Overview

A New World: Book 1: The Science of Higher Dimensional Computation and Metaphysics is the first book in series of three, which describes many thought provoking and controversial ideas, argued and backed up by real science. It presents a new theory of the universe and our place in it, drawing on the power of science, ancient spiritual wisdom and metaphysics. What makes this book distinct is that it integrates the entire picture, from the deepest transcendental level of the cosmos, to the human brain, mind and consciousness, to society, technology, evolution and spirituality.

This integration is essential if we are to successfully navigate the greatest transition humanity is currently accelerating towards, described by science as the *singularity* and foretold by ancient seers. This transition is both evolutionary and spiritual, driven by science, technology and the nonlinear dynamics of complex systems and transcendental levels of consciousness. There are enormous challenges; very real dangers, but also the greatest potential for the spiritual evolution of individuals and the technological evolution of civilisation—to create a utopian-like new world.

This transition is forcing us to face the dark side of our nature once and for all, as we will not survive the technology we are creating, which along with the current materialist, reductionist scientific worldview has created all the problems we face now. Technology amplifies the good and bad of humanity. We need the powerful new emerging technologies to fix our intractable problems but the *catch-22* is that technology will have even less tolerance of our bad behaviour and erroneous beliefs, than the technology we have now—so we could destroy ourselves. *A New World* book series addresses the most fundamental aspects of what we need to do to survive the transition and create the most optimum future, in the most balanced and comprehensive way.

Science is universal, and is the driving force and foundation of our civilisation and survival. Recognition of this is not obvious to the majority of spiritual seekers and many religious followers. What is even less obvious to all is that science is essential to our spiritual transformation. The essence of science is a quest for truth and applying that truth in the world, which is a reflection of our highest spirituality, regardless of science's current limited anti-spiritual, materialist worldview. Therefore, it is essential to have a modern metaphysical scientific worldview, to reflect science's true essence and the truth of reality. Then science can heal the rift between atheism and spirituality in all its forms by truly understanding and accounting for the essential truth behind all of the world's religious, shamanic, metaphysical, and new age beliefs, through understanding and not just blanket denial. Science can then help to upgrade and modernize all of these belief systems, so that globally we have a shared worldview that is both rational and spiritual, which is not just a philosophical project but a necessity for our survival. I am convinced science is the only institution that can do this.

A New World: Book One: Section One: The scientific worldview, is a thorough analysis of science and how it has created a flawed view of the universe and life—due to the brain's hardwiring, thinking and learning styles, the philosophy of empiricism and the extreme use of measurement and reductionism, along with the battle with the church for the hearts and minds of the people. This has created a cold, mechanistic, fractured and finite view of the universe and life, with humanity as objective observers, painted out of the picture—immune from the laws of nature. Science and humanity have paid a heavy price, as this flawed worldview is a major cause of the current crisis we face. The new science of Complexity gives us a new scientific holistic understanding of every aspect of our world as an interconnected entity, where everything affects everything else and everything is obeying dynamical systems laws. This principle actually expresses a very metaphysical view of the world and a much needed antidote to the historic dependence in science on reductionism. It provides another way to heal

and integrate the two conflicting worldviews.

Section Two: A metaphysical scientific worldview describes how the quantum vacuum is an infinite higher dimension, which is why there are so many so-called counter intuitive, paradoxical and weird quantum behaviours, like wave-particle duality, non-locality and superposition, etc—all effects of higher dimensional phenomena projecting into our lower dimensional world. It is also why quantum theory has never been reconciled with relativity, as quantum theory is a mathematical model of an infinite, higher dimensional world and relativity is a mathematical model of a finite, lower dimensional world and not theories of the big and small aspects of space-time, as they are portrayed. A higher dimensional model of the quantum vacuum describes the big bang, inflation, symmetry breaking, infinite parallel universes, multiverse and the string universes as Newtonian-like 3D metaphors for infinite potential and processes that took place in a higher dimension. A higher dimensional interpretation of the quantum vacuum could pave the way for a theory of everything and provide a natural mechanism for design and metaphysical phenomena in our universe. *Section Two* includes a brief description of an elegant, scientific, spiritual worldview based on an integration of complexity and higher dimensional physics, with the essence of the best shamanic and mystical teachings.

Section Three: The information universe describes for the first time a quantum computational model of metaphysics, based on the latest understanding in set theory, called the *information model*. Set theory is the logic of all mathematics and mathematics underlies physics. The set theory universe describes a hierarchy of greater infinite sets, each one contains the set below it ending in Cantor's *Absolute*, which is not a set as it contains itself. The Absolute can be seen as a god concept, equivalent to the God of religion, however based on the *reflection principle*, it is infinitely incompressible and directly unknowable, which is similar to the best mystical descriptions of God. In the new field of quantum information theory, information is seen as more fundamental than matter and energy and physicists believe it could transform the understanding of quantum theory. They also believe the universe is computing and at a quantum level it is simulating itself. In the information model based on the above ideas, the hierarchy of sets is seen as computational substrates that simulate the substrate below them. Computation in this model is abstract and nothing like our classical computers or even quantum computing.

The cosmos is both computational and non-computational. Computation provides the structure and mechanism for the cosmos and consciousness is the non-computational aspect. Computation provides consciousness with the unique perspective to observe and experience the cosmos or creation. Consciousness is a direct expression of the Absolute with infinite acceptance and divine love and is also life, known as the *lifeforce*. The purpose of the cosmos is for consciousness to observe and experience. The cosmos has an infinite amount of computational structure, you can think of as agents or entities, including us, all experiencing consciousness from their own inner, personal perspective. Physicists have discovered that our universe is finely tuned for life to exist, especially sentient life and concluded it demonstrates design and purpose, which emerges naturally from the information universe model.

Section Four: Life applies the information model to life. As the cosmos is conscious and consciousness is life then the cosmos is alive and conscious. In our universe everything is alive and conscious to varying degrees. The design for life that has, does and may exist, already exists eternally as potential in archetypal patterns or software in higher dimensions. All existing metaphysical models that use science merely state that everything is vibrating energy underpinned by consciousness, which is true but vague and incomplete. There is no mechanism for intelligence and mind. Yet all metaphysical models of the past tell us there isn't just energy but an ecology of higher dimensional intelligences in the form of spirits, angels, demons, gods, etc.

Based on artificial life simulations, artificial intelligence (AI) and computation, intelligent agents are a natural outcome of higher dimensional computational dynamics, in the information universe. Therefore the cosmos must be teeming with an infinite amount of agents or entities that could be thought of as hyperspatial intelligences (HIs). As they are higher dimensional entities they would appear god-like to us

and traditionally have been referred to as gods, angels, demons, spirits etc. The most important HI for humanity is the agent that represents all life and consciousness on earth, known as Gaia.

If you are interested in challenging, provocative metaphysical ideas, with the scientific details supplied by citations of hundreds of innovative scientists or are interested in our future—then continue on reading this book!

Section One: The Scientific Worldview

Science — Spirituality and the Singularity

Woonona was my childhood hometown, it's a northern suburb of Wollongong, situated about 75km south of Sydney Australia. Nestled between the Pacific Ocean and a sandstone escapement towering over sub-tropical rainforest, it's a wonderful place for an adventurous boy to grow up. I vividly remember as a nine-year-old, going to Woonona Primary School being really excited about the weekly visit of the library bus. I used to borrow *National Geographic* magazines. There was one article about a peat deposit where the wonderfully preserved remains of a man were found. He was named the *Peat Bog Man*. He still had the rope around his neck that killed him several thousand years ago. I loved science, I loved adventure and discovery. To me understanding the world around me was a great adventure, it was a voyage of discovery. I read books, articles and newspaper reports and watched documentaries from the physical sciences to the social sciences. I owned all of the *How and Why Wonder Books* on science. I loved it all and continue to marvel at science today. I am fascinated with the never ending scientific discoveries made about our world. I am excited and inspired about breakthroughs with new technologies, theories and models concerning the nature of our reality.

Since my late childhood I was also keenly interested in psychic phenomena, ghosts, higher planes of existence and aliens—all the things science said didn't exist! Between the ages of seventeen and twenty-two I had some very powerful psychic experiences, which I was able to verify in the real world, so I believed they were real and natural phenomena but science said none of this was real and it wasn't sensible, rational or scientific to even talk about any of it. I disagreed and thought if this is real, then there must be natural laws that govern it that mainstream science doesn't understand or doesn't want to understand. This was my first realisation of a fundamental weakness of the current scientific worldview. Either way I knew others like me have experienced these things and so there must be serious rational models to explain it that weren't superstitious or naive fantasy of any kind.

I saw a documentary many years ago about the extraordinary number of astronauts, who while in space had what they described as *religious, psychic, spiritual* or *metaphysical* experiences. When they returned many became Christians or strengthened their ties with the church, whilst others took the path I did for exactly the same reasons—they searched the world for a more rigorous and sophisticated understanding of their experiences, neither religion nor science could offer! Geologist, speaker and author Greg Braden mentions this trend in his book *Awakening to Zero Point*.

I had never believed in God and religious teaching from a very young age. When I was six during the weekly scripture class at school the scripture teacher held open a book and one page was white, which she said was good and the other page was black and that was evil. I

remember thinking—why can't it be the other way round? In another lesson she was describing heaven with streets paved in gold and pearly gates and in my innocent mind it just seemed absolutely silly and I completely dismissed it. I tried Sunday school a few times over the years, lured in by excursions and ice cream but I simply never believed the stories and asked too many questions but the clincher was when they gave us homework and that was it for me.

During the Christmas holidays of 1976, I was eighteen, had completed my Higher School Certificate and was working for my father in Sydney, cleaning houses and apartments. One of our clients was an old English gentleman who had spent most of his life in India. I remember he was a very interesting man who had a powerful but gentle presence. For an eighteen year old who had grown up in Wollongong, he was quite exotic because he spoke of meditation and yoga, but what seemed even more strange to me, being a strictly meat and potatoes man at the time—he was a vegetarian!

One day he said he was leaving and wouldn't be seeing us anymore. I assumed he was moving. It turned out he was dying. What was intriguing about this was that he was totally fit, bright and happy and he talked about his leaving as if he was going on a holiday or some exciting adventure. To say that I was both mystified and impressed is an understatement. One day he presented me with a gift—it was a book, entitled *The Mahatma Letters to A.P. Sinnett*.

Two months later I began a three year primary teaching diploma at the Wollongong Institute of Advanced Education, now a part of the University of Wollongong. I also began reading my book with tremendous enthusiasm and often frustration. At times the hairs stood up on the back of my neck, as I read those letters that had been written by Buddhist masters, in a monastery high up in the Tibetan mountains, over a twenty year period towards the end of the nineteenth century. The book was a compilation of these letters and their replies written by members of the *Golden Dawn*, a famous esoteric order in England. These letters powerfully addressed some of the burning questions I had been thinking about. Questions like:

What's the nature of the God concept? Is there life after death? Does good and evil exist? Is there a formal understanding of mind and matter? Will we evolve into advanced beings? What is the purpose of life?

I had a strong sense of the gravity of this knowledge, and could only wonder why it had come into my life. In one particular letter the masters described how humanity evolves in large cycles, each with many epicycles. They called the large cycles 'rounds,' and they stated that human evolution was nearing the end of a very large round. They likened this to the completion of a chapter in a book. They wrote that many things would change some of which they described. The book had a profound impact on that inquisitive searching young man, which put me on a path of personal and spiritual development and practice, with a quest to integrate science and metaphysics.

Over the next ten years I came to understand there were issues with the scientific method. When I went back to university at thirty to do a degree majoring in psychology, I was taught the scientific method, which I understood and appreciated its value but also saw its glaring weaknesses—this was my second realisation about science. In second year at Adelaide University I began reading *The Strange Story of the Quantum* and was absolutely blown away by quantum theory, as I knew science had stumbled on a higher dimension but didn't realise it—this was my third realisation. At the time I took a non-mathematical physics course and I remember asking the lecturer: why atoms are always portrayed as little balls with electrons

whizzing around them, when it wasn't true? He said that's the model they gave to physics under graduates because what they really were was so counter intuitive, they didn't get the truth until their Masters degree. It was during these three years at university that I thoroughly formulated a list of the issues in science and what had created them, which the rest of Section One is devoted to.

Exactly twenty-one years after reading *The Mahatma Letters to A.P. Sinnett*, I learnt about the new understanding of complex adaptive and evolutionary systems and artificial-life and computer simulations, as a third form of science and how they are confirming ideas that our civilisation is evolving according to natural laws and dynamics of evolutionary systems. When I read about certain artificial-life and evolutionary systems simulations, that our civilisation was very close to a historic tipping point and would undergo a fundamental restructuring—once again I felt the hairs stand up on the back of my neck. I knew this was rigorous scientific proof the transition had begun. This led me to research more science, as well as mystical and shamanic descriptions of an imminent evolutionary transition.

I discovered that independently other scientists had calculated we are headed for a *technological singularity*—a time when exponential technological advances will be so great it will change our world and ourselves in unrecognisable ways. Many scientists believe this will represent the end of a vast evolutionary epoch that began with the first primitive stones tools, due to nanotechnology alone! Ancient mystics and seers believed that humanity would evolve to a point where we would dramatically transcend ourselves, changing our minds and our world. Some called this time the *shift of the ages* or the *quickenings*, as it was foreseen everything would accelerate, including our perception of time.

I am convinced humanity is on the verge of the greatest evolutionary change since life began and will make everything that has come before pale into insignificance. Unlike the industrial revolution, for instance, which was an enormous economic and social change in Europe that changed people's way of life, thinking and behaviour—this coming transition is vastly different. Apart from it being enormous in scale and a more fundamental change in the economy and way of life, this transition demands our conscious participation. I don't mean changing our attitudes, thinking and way of life similar to people during the industrial revolution. I mean a fundamental change in brain function, which represents an evolutionary advance for humanity and a spiritual awakening.

This transition will sweep away everything we know, creating a new world and people with almost unimaginable possibilities that to most now, would seem frightening or too fantastic even bizarre and alien. However, it is all based on science and technology and is all part of the dynamics of complex adaptive systems and the evolutionary trend to complexity. It is also part of the deep abstract destiny and purpose of humanity, life's cutting edge expression of sentience—foretold by the ancients and now by scientists.

The transition is unstoppable and is beginning to accelerate exponentially and will continue to do so over the next twenty-five to fifty years, driven by economic, ecological and spiritual imperatives, powered by scientific advances and technology. Whatever perspective you take – that of the scientists or the seers, this is an all encompassing, historical and evolutionary shift, with changes to us as individuals, as a species and to the very foundations of our civilization that will sweep away everything that is familiar.

There are two stages to this evolution of society; stage 1 is the period from now to the Singularity and stage two is from the Singularity onward. I believe this stage two period would have to be a fully advanced *high sentient fitness* (spiritually mature) civilisation, which

I discuss fully in Book Two: *The Neuroscience and Technology of Enlightenment* and Book Three: *Science and Our Spiritual and Technological Transformation*. The first stage is the hardest, most painful and potentially disastrous, as we try and steer ourselves out of the mess we are in and manage the massive disruptive changes—while we are still held to ransom by the dark side of our nature and have so many competing views of what is going on and what we need to do to move forward. The key trigger in stage 1 and the threshold of the singularity, could be in fifteen to twenty-five years, with the advent of atomic precision manufacturing (APM), the holy grail of nanotechnology, which will radically alter our civilisation and lives in every way.

If we can successfully steer through this transition, guided by a holistic, metaphysical, scientific worldview and dealing with our dark side, we could solve the problems we face now and create an advanced civilization, supported by near 100% sustainable, green, bio-friendly, decentralized technology. We could produce food, energy and goods of the highest quality, at a fraction of the cost, creating radical global abundance, human longevity and spiritual enlightenment for all. Everyone on the planet could have a standard of living beyond anything we have now or imagine is possible.

We could then be free enough to become enlightened, peaceful, cooperative, highly creative and productive citizens. We would be mentally and physically healthy, spiritually mature people who live for one hundred and fifty to two hundred years, with a high quality of life to the end. Beyond the singularity could be the emergence of an evolutionary and spiritually new species of human, living in a magnificent enlightened sophistication, in total harmony with the intelligence of nature. This vision of the future isn't just a utopian fantasy but a scientifically backed reality that has never been possible before. Science is driving these exponential waves of change that could cause chaos and destruction or could uplift us—so there is a catch-22! We need to mature as a species to manage the power and sweeping changes we are unleashing on ourselves. That maturity can only come from within, which I argue involves the brain, which is the key to our dark side (evil) and enlightenment. Science must also mature and that change has to come from within, which I argue must come from a holistic complexity based integration of science and a mature higher dimensional physics. This would create an advanced sophisticated new metaphysical science and worldview to unite humanity and heal the split between the spiritual and the rational. If we don't have this top-down worldview dynamic with the bottom-up individual dynamic, I can't see how we will survive this transition.

Currently the world is in a terrible state, since there is a smorgasbord of deeply intractable and global problems like; terrorism, economic collapse, job loss, wealth disparity, corruption, biosphere collapse, global warming, pandemics, health, nuclear arms, that all require global cooperation and honest, sane, compassionate decisions and actions now. So many institutions need complete reform including; science and it's worldview, organised religions, democracy, government and bureaucracies, the justice system, law enforcement, secret services, corporate business, the finance sector, military-industrial complex, education, economics and medicine.

The combination of a fractured and disconnected science, with its view of the world as a cold, purposeless machine reflected in all aspects of our society, with the majority of humanity behaving in a *survival of the fittest* mode has created all the problems we face today, which will be amplified by rapidly advancing, powerful disruptive technology. You could say that our modern technology hasn't tolerated human evil very well, within such an unrealistic worldview, the new technologies will tolerate our destructive survival of the fittest

behaviour even less. It's our technology that has brought us to this climax—forcing us to face our unrealistic ideas in religion and science and to deal with our evil—once and for all. This is both an evolutionary and spiritual advance.

Given our current situation, we can't go back, stay where we are or keep going business as usual! Even though a dramatic change is necessary, possible and inevitable, from where we are now, it seems hard to believe we could actually manage it. Consider all the competing beliefs; from mainstream science and religion, to alternate science and spirituality, with all the different motivations that compete and clash with their picture of reality and what we need to do or what will happen, if we don't take the necessary action. In all of this there are no guarantees we will get it right but the problem is we only have a very small margin of error. We really are on a knife edge with heaven on one side and hell on the other—it's up to us where we end up.

These competing views include:

- New age models that rely on cosmic shifts, the return of angels or enlightened masters, or simply meditating and adopting ancient practices to enlighten us.
- Scientific models in the Transhuman and Singularity movements of techno-enlightenment called *uploading*, which hold the view that you scan your brain and simulate it in a computer, leaving your physical self to die but you are reborn to exist forever as software along with godlike conscious AI, which is the materialist version of enlightenment.
- Modern scientific ideas that our world including us, are all an elaborate simulation run by advanced aliens, and there is nothing we can do.
- Economic rationalists who think the free market will automatically solve all our problems.
- Social models that believe the social media will enable popular movements to change the world.
- Religious ideas that focus on the coming of Christ.
- New age and mainstream ideas that aliens will rescue us.
- People who believe technology alone will save us.
- People of all persuasions who believe we are doomed, are in denial, or simply in ignorant bliss.

Some people who oppose science say, we need *less* science and technology and we should turn back the clock and become simpler in our ways. Others who fully believe in mainstream science and its worldview argue we need *more* science and technology. I believe both camps contain an element of truth. Yes we need to become more simple in our ways but not by going backwards. Yes, we need more science and technology but it can't be the technology we have now and the current scientific worldview and its materialistic view of reality. If your view of reality is limited or distorted, then what you are able to do with it is limited and distorted.

Our current scientific worldview and our religious and new age worldviews are limited and distorted, therefore they limit and distort what we are, what we are doing and what we can do. This situation has produced fear, suspicion and misunderstanding on both sides and the fertilisation and continued nurturing of fundamentalism on both sides. In turn this has generalised from religion to the art community, humanists and many spiritualists, who

distrust science and any form of rational deduction, while scientists distrust any form of spirituality, intuition and mystical insight.

The Promise of Science

I argue the two fundamental dynamics we need to evolve our civilisation are: a bottom-up dynamic described by complex adaptive and evolutionary systems, with their dynamical laws and capacity for self organisation, to generate emergence and a trend of increasing complexity, which represents our physical evolution. Then there is the top-down dynamic, described by the life force with its abstract design and purpose for humanity, which is our spiritual evolution. Historically this is a unique period, as our physical evolution now depends on our spiritual evolution.

I believe there are seven fundamental steps outlined below, we need to take to restructure our society, which must be understood within the context of the top-down and bottom-up dynamics and the two stages of the transition. These are:

- Create a metaphysical scientific worldview to heal the split between science and spirituality and unite the world—Book One: *The Science of Higher Dimensional Computation and Metaphysics*.
- Provide the science and neurotechnology to heal and raise brain function to a higher sentient fitness and enlightenment—Book Two: *The Neuroscience and Technology of Enlightenment*.
- Use agent based modelling (ABM) to simulate the transition and the best possible policies to navigate a safe path ahead—Book Three: *Science and our Spiritual and Technological Transformation*.
- Create a realistic vision of the future based on the first three points for visionaries, leaders and artists to inspire the people—Book Three: *Science and our Spiritual and Technological Transformation*.
- Upgrade our society's management systems with the help of AI and ABM— Book Three: *Science and our Spiritual and Technological Transformation*.
- Embrace and deploy the emerging new technologies to heal ourselves and the biosphere and transform the material basis of society in manufacturing, food production and energy— Book Three: *Science and our Spiritual and Technological Transformation*.
- Connect to universal intelligence to complete our sentient evolution and create stability in a post-singularity world—Book Two: *The Neuroscience and Technology of Enlightenment* and Book Three: *Science and our Spiritual and Technological Transformation*.

Modern science has led the way for humanity in the last four hundred years, it has re-shaped our reality and could catapult us into an incredible future of abundance, sophistication and enlightenment for all. Look around you—there is nothing about the way we live in our modern world that is not a direct result of science via technology and scientific understanding and beliefs—its worldview. The modern scientific worldview filters down from physics to

chemistry, engineering, biology, genetics, medicine, economics, etc, which in turn filters down into all professions, into secondary and primary schools, into the private and public sector and into government. Eventually it filters down into the lives of everyone in society—from the ideas they have been taught at school, to the technologies they use, to the professionals they rely on. Everything about the way we live is owed to science—for better or worse. It is precisely because our scientific worldview is so influential in shaping our lives, our world and perceptions of the world and that it is driving us towards the singularity that makes it so important to know the strengths and weaknesses of that worldview.

The power of science is in controlled experimentation and technologies for measuring, scanning, simulating and analysing everything from a galaxy, to DNA and subatomic particles and the infrastructure and protocols to share and critique information, review ideas and develop models, theories and ultimately a worldview. Its great strength is the painstaking building of knowledge, which is constantly reviewed and the protocols that enable it to advance, evolve and refine its picture and understanding of reality and then apply that with technology.

Fundamentally, I have a great love for, respect of and faith in science. I believe science is a natural, inevitable and necessary expression of our intelligence. It is a vehicle for our evolution and spiritual enlightenment, as it's a search for greater understanding, to look deeper into the mystery and to provide the means to manage the world around us. Science is the catalyst for the coming technological singularity or evolutionary transition humanity is headed for. It will provide the technology to heal the planet and for a spiritually mature advanced civilisation, as well as the neurotechnologies to heal us and enlighten us.

Science has the capacity to uplift us to heights of undreamed of sophistication and quality of life or to drag us down into an abyss, from which we may never return. I do not believe science and/or technology are bad. However, I am very concerned with the beliefs the majority of scientists have about the world, which is its overriding view of reality—the mainstream scientific worldview. I believe it is the greatest weakness of science and so the greatest weakness of modern society and poses a serious risk, as we accelerate toward the biggest upheaval in human history, within the context of the enormity of global issues we face. Aldous Huxley pointed out the problem is when we take science's view as the whole view of reality.

The most fundamental bias is the materialistic and Newtonian interpretation of the facts of quantum mechanics. Despite the mathematical formalism backed by experiment and measurement exposing the utter non-Newtonian and non-materialistic nature of the quantum world, the majority of physicists follow the *Copenhagen interpretation*, either literally or in spirit and have carried on as if the quantum world is just the small end of the universe (space-time). In fact they state all the time quantum mechanics is a theory of the small physical building blocks of matter. Simply put this is untrue and incredibly misleading, as the mathematical formalism proves particles are not made of any form of matter. I argue quantum theory is a mathematical model of an infinite higher dimension and why it is so strange and unlike our world. However, it's the misleading materialistic view that has filtered down through physics, the rest of science and eventually the public.

This view creates a picture of reality that is purely materialistic and Newtonian-like with the acceptance of strange abstract behaviour at the quantum level but the contradictory belief that it's physical or material and nothing more. Instead of facing the facts of the non-Newtonian and non-materialistic nature, the majority of physicists have simply exploited the

knowledge for technology and deliberately ignored the rest. A small amount of physicists have focussed on a metaphysical understanding of what it is telling us about reality but have been shouted down. The rest have attempted to do the same but within the biased materialistic view, which is what has filtered down and become widely popularised like parallel universes, extra microscopic spatial dimensions and a multiverse of an infinite amount of universes. Therefore, there are no infinite higher dimensions existing outside of space and time, only microscopic ones within space and time.

As such there is no place for a spiritual reality, no god concept, no fundamental consciousness, no design or purpose, only a cold, dead, meaningless, mechanistic accident. There is no room in the equations for any supernatural forces, everything can be explained within a finite physical model. We are reassured that this is the honest truth and the most rational explanation from the facts. We are told that accepting this is an act of bravery, as we don't have to rely on superstition and fanciful spiritual ideas that are emotional crutches stopping us from facing the real truth. Doing so we are free to choose how we live our life, to give it and the world around us meaning, to see the wonder and beauty of the universe and have the humility to see that we are inconsequential and have no special place.

I'm not arguing with the facts science has gathered, but with interpretation of the facts, which I and many others argue are biased and so is the interpretation or story woven from them. I am certainly not alone in this view. Eminent scientists over history including giants like Newton and Einstein believed science should incorporate metaphysics. Today a veritable army of scientists across all disciplines are voicing their concerns about the limitations of science to colleagues and to the public. Physicist Paul Davies, in his book *The Mind of God*, points out there has been an 'enormous resurgence' in interest of metaphysical topics among philosophers, scientists and theologians. I believe it is the materialistic and Newtonian nature of this worldview that is crippling us and has spawned this renewed debate.

Lothar Schafer is the Edgar Wertheim distinguished professor of quantum chemistry at the University of Arkansas in Fayetteville. He points out our classical Newtonian view of the world is about separate things, which governs a morality based on separateness, yet in a quantum based universe everything is connected, so everything we do has consequences on all levels. I believe the current scientific worldview is subtly supporting the darker side of human nature, as it portrays the world as a cold, purposeless, machine where everything is separate and survival of the fittest rules. This encourages people to act in selfish exploitative ways, dominating others with little empathy, with the attitude *it's better them than me*. As there is no meaning or purpose to life and when you die there's nothing, they are convinced the only thing that matters is their success, regardless of the cost to others or the environment as that is nature's way. When people believe this, it makes them feel powerful and superior to behave in this way, as they are the fittest survivors. When the majority of society believes this, then society rewards this attitude and behaviour with status and wealth, which is what we see in our modern world. The financial institute executives who plunged the world into financial chaos in 2008 and caused tens of millions to lose their jobs and/or homes, walked away with obscene bonuses and in many cases were promoted and none were punished.

The other issues myself and many scientist have is the extreme use of measurement, reductionism and specialisation that has fractured scientific knowledge and stifled broader communication and understanding within science. In turn this has distorted fields like rationalist economics, with its unrealistic understanding of human behaviour and mechanistic view of the economy that has had severe consequences for billions of people and contributed

to the economic problems we face today. The other field is medicine with its mechanistic view of the body and reductionist specialisation, treating symptoms in isolation of the whole person, using toxic drugs and often dangerous unnecessary surgery.

All of this is compounded by a culture in science where the majority of scientists at any given time in history, including the present, really believe that the view of science at the time is not only the *whole* view but the *only* view! Yet this has been proven time and again to be wrong over the history of science. In turn this leads to a type of blanket scepticism and denial of any knowledge outside of science, no matter how sophisticated it is. In metaphysics it has led to an unnecessary split between science and spirituality, which in turn has led to fundamentalism and distrust on both sides that helps to maintain superstitious beliefs and naive fantasy instead of eliminating them. It also means there is an enormous amount of intelligent university and college educated professionals who believe in science but are also religious, yet feel uncomfortable about their beliefs because they recognise the glaring inconsistencies. On the other hand they don't believe in traditional or new age spirituality, yet would like a more sophisticated spiritual model integrated with science that was more believable and elegant. In medicine, it has led to a resistance to preventative and wellbeing models like Chinese and Ayurvedic medicine for instance, whilst maintaining an inefficient, expensive and destructive symptom management model, often using toxic drugs and dangerous surgery, leading to a health crisis in the West.

We actually have the information to be doing much better than we currently are, however it has been ignored and ridiculed due to the materialistic bias of the scientific worldview. We could have been using the new form of electricity Nicola Tesla discovered or perhaps we may have been using unlimited, clean, free energy from the vacuum seventy years ago. Medicine could have incorporated herbs and diet, with electromagnetic healing devices and subtle energy, Chinese and Ayurvedic medicine, meditation and neurotechnology to heal psychiatric illness, create greater stress resilience, wellbeing and enhance performance. It could be possible that dark energy is what the ancients have called subtle energy and the basis of Chi in acupuncture or prana in yogic teachings, yet science has dismissed it here in our everyday world, where we could have understood it and harnessed it for healing and wellbeing. Now science may have encountered it out in space where the truth has been forced upon us, in the form of dark energy! Imagine the impact on the economy, the biosphere and society with just these changes. The only reason this didn't happen eighty years ago was the erroneous assumptions of the scientific worldview—generally and specifically the materialist, finite interpretation of quantum theory. This has made the current situation we are in much worse, which in turn will make the transition way more difficult and potentially disastrous.

We must upgrade our scientific worldview to include a more fundamental and realistic understanding of the nature of reality, life and consciousness for what they truly are and not the naive and limited understanding we have of them now. Advocates of the scientific worldview would argue the opposite and insist science is about removing the need for any reference to spirituality, mysticism or religion, which they believe it has proven are illusions. The scientific worldview is fundamentally correct and only needs a little fine tuning. If you can't accept the truth of science then you are not accepting reality as it is. However, despite this unswerving belief, many scientists and others (including university and college educated professionals) are drawn to and are in need of something more than science can offer, without necessarily denying the legitimacy of science.

Erwin Schrodinger became one of the founding fathers of quantum theory when he

invented *quantum wave mechanics* and created the famous *Schrodinger wavefunction*, which forms the very foundation of the quantum description of matter and energy, which has brought quantum theory its dazzling success. In his book *Nature and the Greeks*, he asserts a well rounded scientific education does not necessarily quench the desire in individuals for a deeper, metaphysical or religious understanding of life, as “...men crave for even a vague hope, whether rigorously provable or not, the ‘world’ or ‘life’ of experience be embedded in a context of higher, if as yet inscrutable experience.”¹ He pointed out that science, in its polarised form ‘jeopardises’ religious convictions without replacing them with anything else.

While science is universal and the driving force and foundation of our civilisation and survival, which is obvious to the mainstream this recognition is less so to the majority of spiritual seekers and some religious followers. What is even less obvious to most religious, spiritual and atheist alike is that science is essential to our spiritual transformation. The essence of science is a quest for truth and applying that truth in the world is a reflection of our highest spirituality, regardless of its current limited anti-spiritual, materialistic worldview. Therefore, it is essential to have a modern metaphysical scientific worldview to reflect its true essence and universal intelligence. Before science, the evolution of humanity’s knowledge and technology had been expressed through *intuitive* or *silent knowledge* and subjective processes. The emergence of science represented a needed opposite approach—the path of the intellect and concrete, objective detail. This completed the circle and has set the stage for the next great evolutionary advance for humanity.

As science is a relentless search for more realistic models of reality, then if there is a spiritual reality science will eventually account for it. I believe this is the case and science is headed towards an evolutionary spiral of completion, where subjective knowledge and wisdom from the past will be integrated with the objective knowledge of the present and near future. A completion where mystical insight will be integrated with rational deduction, the head and the heart will function at an advanced level of intelligence and this will be reflected in a new meta-science. This science will incorporate the concrete/rational and the abstract/spiritual in sophisticated and rigorous harmony—two opposite paths to knowledge united into a whole.

At no time in human history has there been so many scientists and professionals trained in the scientific method. So many highly educated people connected by objective protocols and infrastructure, like universities and the Internet, sharing knowledge and investigating vast frontiers of reality. This is a very different situation to any civilisation of the past. When shamans and mystics obtained and passed on knowledge by subjective means, only a tiny fraction of any population was privy to this knowledge and it was kept secret to maintain its integrity. There were no structures and standards to share critique and apply that knowledge across society. Some of the knowledge was given to society in the form of practical applications such as health and healing and as community cohesion in the form of spiritual beliefs.

Organised religion has not succeeded in evolving and leading humanity out of evil and into enlightenment, even though it has changed aspects of its worldview based on science. The new age spiritual revival has attempted to disseminate traditional mystical knowledge and practices that lead to enlightenment but it failed too. There has been no quality control and it rapidly degraded the information through misleading marketing, ego and naive thinking, into a misinterpreted mess of metaphysics and science. Traditional spiritual practices haven’t changed much or brought enlightenment to the modern world. Organised

religion, the new age movement and traditional spiritual practices have all helped humanity, as well as caused problems and I respect all the genuine spiritual people who are a part of all this but we must move forward. I argue only science can create, secure and disseminate metaphysical information and practical applications that will lead to healing, reduction of evil and a basic enlightenment for the masses—due to its rigorous information sharing protocols, something that has never existed before. It also has a formalised universal protocol for change and it has been changing constantly since it began. Just like all other human endeavours it has its problems with politics, ego, resistance and wrong ideas, etc, which I will cover in this whole section but it is still incomparably better than anything else and it will keep working its way towards more realistic models.

As science has an all-encompassing global reach, crossing so many political, national, religious, philosophical, cultural, gender and socio-economic boundaries. It could heal the rift between atheism and spirituality in all its forms by truly understanding and accounting for the essential truth behind all of the world's religious, shamanic, mystical, and new age beliefs and reflect this in an advanced metaphysical worldview. Psychiatrist, researcher and visionary author Stanislav Grof, agrees as he stated ² the 'gap' between science and spirituality will be 'healed.' The Dalai Lama, in his book *Ancient Wisdom, Modern World*, argues that religion is not fundamental to spiritual enlightenment. Science could upgrade and modernize all of these belief systems, so that globally we have a shared fundamental model and provide the neuroscience and neurotechnology for healing, reduction of evil, peak performance and basic enlightenment. The Dalai Lama believes that neuroscience will improve Buddhist practice and could uplift humanity. I am convinced science is the only institution that can do this. As science will also provide the material basis for a spiritually mature technologically advanced civilisation, it will achieve its higher spiritual purpose of evolving all of humanity. Ordinarily the slower pace of science for radical reform wouldn't be an issue because in historical time science has had a meteoric rise, with break-neck advancement over the last four hundred years. However, it's an issue now because it's imperative it changes fast enough to deal with the exponential changes we are racing towards?

Even though it looks like science is forging ahead and putting the last nails in the spiritual coffin, in fact I argue it has begun the process of changing from within towards a metaphysical science to uplift humanity the way I have described. On a metaphysical level higher dimensional physics, set theory and cosmology will change the mainstream scientific worldview into a modern metaphysical scientific worldview and enable us to formally understand the infinite connectedness of reality, abstract design and purpose, a god concept, fundamental consciousness and a spiritual reality.

On a worldly level, the new holistic sciences of chaos and complexity will fundamentally integrate all scientific knowledge and the scientific worldview. This will balance and humanise a science fractured and sterile from an unbalanced and exclusive focus on reductionism and specialisation and provide a new and vastly superior modelling technique (agent based modelling) for the behavioural and life sciences, including economics. In complexity theory the whole universe is described as a nested hierarchy of evolutionary systems obeying natural, non-linear, chaos laws of change. Life is such a system and more, as it's a *complex adaptive system* that reacts to and also changes its environment. Our planetary biosphere is a complex adaptive system and so is everything human including; our global civilisation, nations, multi-national corporations, governments, bureaucracies, communities,

families and individuals. All are evolutionary and complex adaptive systems embedded in a fractal hierarchy and all obeying dynamical systems laws of evolution. These systems evolve exponentially and change in sudden discontinuous ways known as phase transitions or bifurcations (in physics) and punctuated equilibrium (in biology and evolutionary theory). I describe this fully in *Evolutionary systems and singularities the scientific view* in Book Two: *The Neuroscience and Technology of Enlightenment*.

Complexity theory suggests we are not in a power boat pushing upstream against the current of nature, as the scientific worldview naively promotes. We are in a boat being swept along in the downstream torrent and all we can do is understand its eddies and currents and with carefully observation; we can gracefully intervene at just the right moment and manoeuvre ourselves within the flow. We can do this by modelling the biosphere and our civilisation as a complex adaptive system and use ABM to know what to do and where and when to do it! It is imperative to create agent based simulations (ABMs) created from *artificial* or *digital life*, agents, which are complex adaptive systems themselves—therefore they model life and everything we create with unprecedented realism. I see it as a just-in-time technology to help us model all levels of our global civilisation and possible futures. We can use these simulations as a more intelligent and humanistic arena for utilising the cold, hard dynamics of survival of the fittest, to spare real human beings the pain, struggle and loss that occurs in the real world. We need to model our entire civilisation and biosphere to look at the big picture, which Futures researcher Jan Huston, of the University of Hawaii in Honolulu,³ has done and reports there are eight scenarios and only two are positive. We also need to model the global economy and the impacts of the emerging exponential technologies. Every national government must model all its policies and make decisions based on the best ones and not ideological guesses or unrealistic economics beliefs. This will give us the best possible chance to navigate through the enormous rapid and all encompassing changes racing towards, with the least amount of drama. It will save people and nations from the very real fear, pain, suffering and conflict that could occur globally.

Complexity based science will contribute to the evolution of the scientific worldview because its holistic integrated understanding of the planet, biosphere and civilisation is a formalised and rigorous form of ancient understanding of the interconnectedness of all life and our place in it. Therefore, it would create a gentler more biofriendly world, where we understand that whatever we do has consequences everywhere and for everything. This will provide the formal framework for a more humble attitude and serious stewardship of the biosphere. We will be more mindful of our actions and can model our ideas to choose the ones with the least long term negative impact and steer us towards an optimal future for ourselves and the rest of life.

On a human level neuroscience, AI and robotics, nanotechnology, regenerative medicine and synthetic biology are converging to provide a platform for human enhancement physically, mentally and spiritually on an unprecedented scale. Research in neuroscience, cognitive science, AI and robotics are identifying the computational, robotic and animal aspects of ourselves. This is pushing us to identify what qualities we have beyond these levels and what structures and mechanisms in the brain mediate them, and how we can strengthen these structures to reduce evil and amplify our higher human nature. In the new science of neurotheology the brain has been stimulated to produce the whole array of spiritual, psychic or religious experiences and phenomena, previously shrugged off by mainstream science as hallucination and psychosis. This has forced serious scientific debate on the issue of why we

have evolved mechanisms to mediate these experiences. Is it because a spiritual reality exists or because the brain generates them to reduce our fear of death? In other areas a resurgence of research into *near death* and *out of body experiences*, will build the evidence needed to prove consciousness is not localised in the brain and physical senses. This along with the revitalised debate about the nature of consciousness and a new quantum based model of how the brain mediates consciousness (Orch OR), with the realisation in the next twenty years that human level AI is not conscious will finally tip the consensus toward fundamental consciousness away from the current view that it is produced by the brain. I discuss consciousness in *God Consciousness and Life* Section Two and *Consciousness in an information universe* Section Three and *Does the Brain Create Consciousness* in Book Two: Section One.

It's clear to the casual observer that greed, lust for power, betrayal, violence and cruelty have been a repeating theme in history, which has been demonstrated in complexity based models that also point to repeating themes and cycles of this behaviour in history. Its why we have expressions like: *it's a cruel world, it's a jungle out there, survival of the fittest, better them than me, it's dog eat dog, good guys always finish last*, etc and why so many people have a pessimistic view of so-called *human nature* and our capacity to survive the mess we are in. No matter how sophisticated various societies were in the arts and sciences and how sophisticated they thought they were, these themes were the controlling factors behind the facade and usually the cause of their downfall. The situation is no different today. In saying this let me make it clear that good and bad exist across all races, nations, creeds, colours, religions and philosophies. When I was twenty-four I travelled half way around the world and saw this so clearly. There are and always have been many examples of good people but the purpose of my argument is to focus on the low sentient fitness (evil), as it has tended to dominate and shape history but now we can't tolerate it and we have to deal with it decisively.

I believe every form of social, resource and wealth management, as well as governance in all its forms, over the history of civilisation has failed to control this dark side of our nature commonly called *human nature* or *evil* and what I call *common human evil*. I argue it's failed because it's hardwired into our brains. However, unlike at any time in the past we are in a position where we can't afford to repeat these patterns anymore, due to the power of our technology and the global interdependence of our civilisation. In evolutionary terms we have adapted so well, we have changed the environment and ourselves with rapidly advancing disruptive technology, at such an accelerated pace, we face extinction unless we can adapt fast enough to survive ourselves. However, this adaption is nothing like anything that has come before, as we need to dramatically reduce common human evil in all its forms, once and for all.

From the point of view of the evolution of sentience we have been operating at a low *sentient fitness* level but our low technology tolerated evil and allowed us to survive overall despite civilisations rising and falling. However, our intelligence has painted us into a corner by discovering science, which is a doubled edged sword, as technology amplifies all of what we are, the good and the bad—we now have the ability to destroy the biosphere, ourselves and most of life. Now our modern technology is not letting us get away with evil anymore, which is what I meant by it doesn't tolerate evil very well. In terms of a neuroevolutionary perspective you could say we need to increase our sentient fitness from its current low level to a new high level, which will give us the necessary adaptive edge, to end the repeating patterns of history and enable us to manage the transition and then thrive in a new super high-

tech world. You could think of this adaptive edge as a basic form of spiritual enlightenment that I argue is an evolutionary imperative for our survival.

I believe any sentient beings in universe would go through the same basic evolution, where they discover science, rapidly advance, become incredibly dangerous and are forced to deal with evil once and for all. They would heal themselves and their planet and evolve to a higher level of sentient fitness. If not they would destroy themselves, as they accelerate towards the technological singularity. I believe this would be the most dangerous evolutionary transition for any sentient beings in the universe, including us.

All metaphysically-minded commentators and spiritual teachers advocate the raising of consciousness as a necessity for our survival. They usually explore how this is happening by pointing out renewed interest in eastern philosophies, meditation, practising gratitude, and other practices. However, emulating ancient practices is not enough; neither are new age gimmicks, NLP, brain games or social media interactions, proposed by many commentators. These methods are too slow, too hard and not powerful enough. The change is coming too fast; we don't have time. Science will take us beyond the knowledge and subjective technologies of the past to raise sentient fitness for the masses with neurotechnologies, with an efficiency and speed that has never been possible before.

I argue science can lift us out of the instinctive animal nature, hardwired into our brains with neurotechnology and finally disconnect us from our animal past and the repeating cycles of destructive behaviour. These primitive or animalistic drives are hardwired into the oldest parts of the brain. Whereas, the most human qualities that separate us from animals and make us civilised like self control, reasoning, planning, mathematical and musical appreciation, compassion, empathy, joy and spiritual awareness are hardwired into the most recent and human part of the brain—the prefrontal cortex. In my *neuroevolutionary model of evil*, described in Book Two: *The Neuroscience and Technology of Enlightenment*, we swapped are instinctive innocence for conscious, rational awareness. Therefore if the animal brain controls the human brain, either covertly or overtly, it produces all forms of common human evil, seen as the dark side of human nature. Neurotechnology can strengthen the control of the human brain, reduce the influence of the animal brain and amplify the qualities of the human brain, raising our sentient fitness, which is the neuroscience of basic enlightenment. We could finally become fully human by separating from the sub-cortical control of our animal past and dramatically reduce our destructive behaviour. This will also end our low sentient destructive history, with its cycles of violence and upheaval. No sentient beings, still hardwired to their animal past, could survive a technological transition like this, without evolving themselves as part of the process. This model strips away the religious, moralistic and mystical overtones, since religious notions of evil being orchestrated by the devil aren't very convincing or the new age denial of evil and embracing of transcendental love, without a robust way to really change brains, isn't very practical and why they haven't eliminated evil and enlightened us.

Neurotechnology applications like neurofeedback based on these models already can reduce negative and destructive behaviours described as evil and improve positive behaviours described as spiritual. Models such as this along with the techniques to apply them will play an important role in the acceptance and healing between atheism and spirituality and in uplifting humanity, so we can survive the transition.

Stage one of the transition needs the rapid and widespread use of neurotechnology, as it exists now and its future developments for healing, stress resilience, peak performance and raising consciousness (*self actualisation*) of as many people as possible. This will give us a

chance to deal with the real fear, stress and uncertainty of the rising tide of job losses, let alone economic, climatic and military uncertainties and disasters, as well as rapid technological change that will come as one tsunami after the other, sweeping away all before them. All of this together is a volatile mix and we need people to be switched on, calm, positive, compassionate and informed to the best of their ability, so they can participate in decisions to guide our future towards the best possible outcome.

On a metaphysical level healing brains, reducing evil and raising consciousness will give an enormous amount of people a connection to what I call universal intelligence, discussed in Sections Three and Four and Book Two: *The Neuroscience and Technology of Enlightenment*. This is the ultimate top-down feedback of the universe, something humanity has always tapped into and is a necessity to unite us spiritually. Even if you left out this metaphysical aspect, neurotechnology is still a powerful and effective strategy that would create an unprecedented uplifting of humanity that atheists agree is necessary too. Even at this level it represents a basic form of spiritual evolution or higher sentient fitness.

Humanity desperately needs a unifying vision for our future. Vision drives the evolution of our civilisation. It is an essential and fundamental component of sentient beings. Our intelligence gives us the imagination to envision the future, the rationality to work towards it and the spirit or will to persevere. Our history is full of examples of the amazing capacity of the human spirit to overcome all obstacles, when inspired by a powerful vision. If we study religious, philosophical and wisdom literature of every culture that has ever existed, we see a common theme of a truly civilised and human society. The themes include:

- To love and to be loved.
- Be free from exploitation, violence and repression.
- Be respected by others.
- Feel a sense of belonging and worth in the community.
- Be able to do meaningful work in life.
- Be recognised and rewarded for our efforts.
- Be able to dream, plan and work towards the future.
- Have quality time to enjoy ourselves with friends and family.
- Make life easier.
- Be happy.

The Dalai Lama has written a concise book on the concept of universal aspirations, which he argues are independent of religions, philosophies and cultures, and constitutes a pragmatic definition of spirituality. Having an understanding of the possibilities we have to create this and have some sort of shared vision, is essential at this point in our history and evolution.

However, at this critical time it is so essential, as an enormous amount of people in the industrialised nations are disillusioned with their political and spiritual leaders, they are also disillusioned with the story they are being told, which includes traditional religious and mainstream scientific worldviews. Many feel our leaders and institutions including science lack vision and leadership. I believe a metaphysical and complexity based science can provide the credibility for visionaries, leaders and artists to create a powerful and realistic vision to guide humanity. So many of the block buster futuristic movies are very dark and primal with humanity the same as we are now, except with high technology, within the same scientific worldview. This is misleading and impossible for the reasons I have argued. We can

and must do better than this and it starts with science.

Humanity and our civilisation must and will change because of fundamental dynamics deeply entangled in reality itself. On a metaphysical level there is the abstract purpose of life guiding our sentient spiritual evolution. On a physical level our evolution as a species and the evolution of our civilisation are a nested hierarchy of complex adaptive systems, obeying non-linear dynamical laws of evolution, trending to greater complexity, on a razor's edge between order and chaos. As sentient beings we influence the outcomes of this mega-systems trajectory by our actions within our beliefs, amplified by technology—but we are also bound by its dynamical laws. Taken together, a deeper higher dimensional understanding of reality and its abstract non-local connectedness, along with a complexity understanding of our everyday world and its complex interconnectedness, will give us a new metaphysical or spiritual scientific worldview. With neurotechnology we can heal brains, reduce evil and raise sentient fitness to a form of enlightenment and collectively connect to universal intelligence. With ABMs we can model the evolutionary transition we are going through and choose the best strategies to ensure a positive future. With these interacting dynamics we could finally tip the balance from societies dominated by evil in all its forms, to societies dominated by pragmatic wisdom in all its forms. If we make it we could have spiritually evolved people, living with a spiritually evolved science, in an advanced high-tech, peaceful and sustainable new world with abundance, longevity and wellbeing for all.

There is an old Chinese curse, *may you live in interesting times*. It would be a curse for those who like order, stability familiarity but it's exciting for those who love change progression difference and adventure. I personally am thrilled to live in such exciting and wondrous times of change.

The Worldview of Science

We live in unique and interesting times, as the entire history of human thought exists now. We have examples of the worldviews that have existed from the hunter gatherer period, to farming, then great cities and civilisation, with pantheist then monotheist religions, the scientific age and the industrial revolution. Through living individuals many of the subjective technologies and strategies for personal and spiritual development and social cohesion still exist today—some in an unbroken line from their beginning. At the same time we have other people, who have grown up in a modern world and only know of and believe in the scientific worldview. If ever there was a period of human history, where the integration of all that has come before is possible and essential it is now.

A worldview is the way we view reality, it is an overall assumption or model of how we think, feel and believe the world is, based on facts and experience. It is like a pair of coloured glasses we permanently wear that colours all of our perceptions, experiences and all the information we gather. Many different worldviews have emerged and evolved through different eras and across different cultures in our history. This same dynamic is at work within science, its worldview has been rapidly evolving with many different beliefs and models emerging to supersede previous ones.

Here is a summary of the current scientific worldview.

Mainstream scientific worldview—fundamental assumptions about the universe and life

- Space-time, which includes the quantum vacuum is finite and all there is—physical only myth.
- The quantum vacuum and all it contains is simply the small-scale end of space-time and not an infinite higher dimension—physical only myth.
- Consciousness is a physical phenomena created by the complexity of the brain and not some fundamental property of the universe—no consciousness myth.
- Life is also a physical phenomena based on chemistry and information processing—dead life myth

These lead to conclusions like:

- The universe was created from nothing for no reason and so there is no need for a God or god concept, as well as design and purpose.
- The universe is a blind, cold violent and mechanistic thing and we have no special place in this universe that doesn't care for us.
- Life is dead at its core, there is no lifeforce, soul or spirit, etc.
- There is no design or purpose in nature—it is all an accident, chance and blind natural selection.
- The physical bodies of living things are mechanical and chemical bio-machines, animated by 'software.'
- The only reality is a physical one we can physically measure and describe in classical

Newtonian physics terms even the quantum level.

- Space-time, including the quantum vacuum is the entire cosmos, it may have 7 extra quantum scale physical dimensions.
- There are an infinite amount of parallel universes and/or a multiverse of different universes.
- There is no higher dimension or abstract part of reality. If it can't be physically detected it probably doesn't exist.
- The quantum vacuum is not an infinite higher dimension and does not contain infinite energy that can be used.
- The quantum vacuum contains nothing other than the forces, fields and particles described in quantum theory.
- The laws of physics account for the entire nature of reality, which is interpreted for convenient purposes as purely physical and concrete. This is verified by common sense and our natural every day experience of the world.
- Physics has shown there is no room for any other mystical and/or supernatural forces or subtle energies within the laws, as we know them.
- Our consciousness, our 'awareness' is really the result of networks of individually dead and dumb electrochemical connections (synapses) in the brain.
- Human and super level AI will be conscious and must be considered as sentient beings, higher life forms or even gods and as such will have all the legal and moral and rights of a person.
- Our experience of ourselves and the world, including so-called spiritual or supernatural experiences, are merely electrochemical events in our brains. If a person believes they had any supernatural experiences they are delusional.
- Human consciousness has no effect on the physical world or other humans, therefore all forms of psychic/energy healing and communication are impossible. We are not deeply connected in any mystical way. People who say they experience this are either charlatans or delusional.
- When we die there is nothing left.
- Spirit, soul, life force, higher or mystical consciousness are fantasies, the result of misinterpretation or sloppy thinking by those who theorise their existence and are unnecessary to fully explain life and mind.

The rest of Section One will be an attempt to explain how science has arrived at this picture and how science is changing. I propose an alternative interpretation of quantum mechanics, as a model of an infinite higher dimension and the origin of space-time based on the mathematical facts, which preserves the mathematical formalism and provides the basis of a sophisticated modern metaphysical scientific worldview along with complexity theory. I describe a new way of thinking about a god concept, consciousness and life. I review the new holistic science of complexity that will turn the tide on reductionism's dominance and how science is evolving from within on the metaphysical and systems level. I explore the historical development and other contributing factors of the current scientific worldview and why it has ended up fundamentally incomplete and flawed. The reasons are interconnected in

complex ways and don't line up in a neat sequence, like so much of the natural world and human affairs, which is what science is—a human affair with the natural world. These factors include:

- The original competition with the church.
- The influence and fundamental belief in classical Newtonian mechanics and logic in the past and up to the present including classical information.
- The philosophies of positivism and empiricism.
- The nature of our Latin based languages.
- The processing limitations of our brain and senses.
- The obsession with objective measurement.
- The irrational belief in finite physical causes.
- The dogma and myths of the scientific method.
- The confusion with reductionism.
- The bias and exultation of left brain, analytical, reductionist, thinking and learning styles.
- The classical reductionist interpretation of quantum theory.

Each of these areas will be covered separately in individual sections but for now let me give you an overall view.

Section Two: A Metaphysical Scientific Worldview

Quantum Myths

At the beginning of the Twentieth Century physicists were absolutely convinced in the fundamental validity of the mechanistic Newtonian picture of reality. So much so in fact, they believed in principle, starting with initial conditions they could calculate everything that would happen in the universe infinitely into the future, as if it were a giant deterministic machine or clock. However their final quest to discover the ultimate building blocks of matter literally blew the Newtonian model out of the water in more ways than one.

As physicists worked towards unravelling the atomic mysteries they were working in a strict, reductionist, Newtonian paradigm. Physicists thought they had discovered the ultimate building blocks of matter—the atom. Imagine their great surprise and even dismay, when they realised they weren't the finite end of solid matter but the beginning of a strange new world of sub-atomic particles that didn't behave like normal matter at all. The maths told them the particles were not physical things or made of anything physical, yet they could make them behave as if they were. These particles were described by the ghostly wavefunction that propagated infinitely in an infinite mathematical space that described the particles behaviour incredibly accurately. The discovery of the wavefunction was a spectacular intuitive leap by Schrodinger. Whoever could have thought that to describe particles you needed an abstract wave that that propagates in an infinite abstract space! It represents a total departure from anything to do with the world we live in. As one of the founding fathers of quantum theory and creator of the *Copenhagen* interpretation, Niels Bohr once said: *If you read about quantum mechanics and are not shocked you didn't understand it.* I know I was thoroughly shocked, excited and deeply moved when I did! The mathematics, the formalism, the models and experiments all pointed to the fact that the quantum world was absolutely nothing like our everyday concrete Newtonian world at all! There is no space, time, events or things, as we know them—just ghostly potential that can appear as if it is any of these qualities.

Yet in a spectacular act of selective attention the majority of mainstream physicists accepted the Newtonian-like interpretation of quantum theory, known as the *Copenhagen* interpretation. In the twenties and thirties there was tremendous debate about how to interpret the implications of quantum mechanics. The Copenhagen interpretation won out in the end which, as Herbert, Davies, Polkinghorne and Weinberg all pointed out, is predominantly classical and ignores the abstract nature of the quantum reality. Bohr, described by Herbert as creator and 'evangelical crusader' of the Copenhagen interpretation, asserted that there was no quantum reality—only an abstract mathematical description. Therefore, he demanded that all quantum phenomena had to be described in the language and metaphors of classical physics, although it operated nothing like classical physics! This had the effect of powerfully biasing the way physicists and others perceived and understood quantum physics. It left physicists with nothing for quantum phenomena to exist in except space-time, so they pictured the abstract non-Newtonian quantum world as just the Newtonian, small scale end of

space-time—even the ones that revolted against the Copenhagen interpretation and demanded that the quantum vacuum was real. Physicists routinely describe quantum mechanics as a theory of the smallest level of or the smallest building blocks of the universe. Once this had been accepted as legitimate, the idea of questioning the Copenhagen approach or researching the implications and meaning of quantum theory was frowned on and discouraged. This attitude was encapsulated in the phrase...*shut up and calculate!*

This was an expedient trick that enabled physicists to move forward and exploit the strange qualities of the quantum world in mechanistic research and application, without ever having to think about what it meant. Something like 70% of our modern technologies are applications of quantum theory like transistors, LEDs, lasers, solar cells, thermoelectric materials, new polymers, new liquid crystals, digital cameras, super conductors and MRI scanners to name a few. However, it has reinforced this false materialistic and reductionist mindset that the quantum world is just the miniature level of our physical world.

Roger Penrose is the Rouse Ball Professor of Mathematics at the University of Oxford, a multi award winner, including the 1998 Wolf prize for physics, which he shared with Steven Hawking and author of several books, including *The Emperor's New Mind: Concerning Computers, Minds And The Laws of Physics*. He created *Twistor* theory, which demonstrates the non-local nature of space-time and allows a new understanding of gravity; both accomplishments create connections between relativity theory and quantum theory. Eminent theoretical and mathematical physicist Edward Witten believes *Twistor* theory is the true starting place for all the new string theories in quantum mechanics.

Penrose is a brilliant thinker, who believes in the reality of the vacuum and that quantum theory is incomplete. He described the vacuum as an 'unfamiliar reality' that has to be 'something' as it is so accurately described by the quantum formalism. In his book *Shadows of the Mind* he demonstrated what he considered an indication of the 'profound' nature of quantum theory and people's attitudes to it, when adherents to the Copenhagen interpretation dogmatically believe in the quantum formalism as it stands, arguing it is complete and yet steadfastly deny a quantum reality. In fact, they see the two positions follow logically. As a perfect example Penrose quoted this statement made to him by Professor Bob Wald of the University of Chicago. "*If you really believe in quantum mechanics, then you can't take it seriously.*"¹

Theoretical physicists John Polkinghorne and David Weinberg refer to this blind faith in the Copenhagen interpretation as 'dogma.' A powerful example of the distortions created by the Copenhagen interpretation is the incredulous and profoundly incorrect belief among physicists that subatomic particles are as real in a physical way as manifestations of the non-computational mind balls, when the mathematical formalism tells them they are not material or made of anything material.

Therefore over three hundred years after Newton published the laws of motion and launched the classical, Newtonian mechanical worldview; scientists are still subtly but powerfully hypnotised by it. Schrodinger wrote that everywhere we are still under the spell of this Newtonian period. I picture it metaphorically as scientists wearing *classically coloured glasses* that *colours* their perceptions and so they see everything *tinted* in a *classical mechanical* way. In spite of the fact that almost ninety years ago quantum mechanics was formulated, which superseded classical mechanics and its worldview, there remains a problem. Basically, to this day physicists never radically changed their worldview, they merely made a few superficial adjustments and went on their way, seeing an abstract quantum

world essentially in a concrete classical way. Scientists view the world through certain beliefs and sometimes they can be fundamentally wrong. However, when a large and prestigious enough group of them endorse a certain interpretation it is officially adopted. This is the human irrational side of science; this is the cognitive science principle of *observer created reality*. We see things as *we* are and not necessarily as *they* are.

Quantum theory tells us that atoms are made out of totally alien ‘quantum stuff,’ as physicist Nick Herbert, author of *Elemental Mind: Consciousness and the New Physics*, in his book *Quantum Reality: Beyond the New Physics*, calls it. It is something that is completely foreign to any notion we have of physical things in three dimensions of space and in time. As I have mentioned several times the classical picture of an atom is completely untrue and misleading. Electrons are wavefunctions of abstract *potential*, existing in superposition, as a pattern of abstract probabilistic distribution, more like a ghostly cloud that describes it being here, there and everywhere at once—nothing like a classical ball in a circular orbit! Even referring to it as a *cloud* is just a three dimensional metaphor, as the abstract probability of a wavefunction is not normal probability or three dimensional, it’s something more fundamental. In fact we have no words to describe what they are and there is no way to even visualise what they really are in our heads or with computers. The wavefunction itself exists in an abstract infinite mathematical space called *Hilbert Space* and we have no way of describing with words or images what this is either. No physicist has ever seen an electron orbiting the nucleus of an atom or any other sub atomic particle for that matter. Even though they have colliders and they smash particles together all the time. The only things they have are similar to photographic negatives but not of any particle, only the trails they leave. However, this is not because we don’t have the right equipment to see them, it is because they are abstract, non-physical phenomena.

Werner Heisenberg one of the founding fathers of quantum theory and creator of the *Heisenberg uncertainty principle*, said that atoms or elementary particles are not real in themselves, as they are more like ‘potentialities’ or ‘possibilities’ rather than things or facts. Schrodinger advised his readers in *Science and Humanism* not to think of particles as ‘permanent’ entities made of any ‘material’ but imagine them as an ‘instantaneous’ event of ‘pure shape.’ Penrose explains ² particles are not ‘hard grains’ but are spread out in incomprehensible ways possessing no individuality. Bohm described elementary particles as *ensembles* or *totalities* that are ‘enfolded’ throughout the vacuum and not single entities. When a particle is detected it unfolds out of the vacuum presenting some aspect of itself, either a wave or a particle, depending on how it has been detected. In fact the appearance of different species of particles, the transformation of one particle into another and the annihilation of particles, are all examples of the infinite seamless underlying potential (Bohm referred to as the implicate order) unfolding in different ways.

Herbert writes that John von Neumann, the great logician and mathematician credited with discovering the foundations of modern computing and of artificial life, wrote a textbook on quantum mechanics. Herbert refers to it as the physicist’s ‘quantum bible.’ Von Neumann concluded from a ‘short’ mathematical proof, known as *von Neumann’s proof* that sub-atomic particles could not be made of ordinary reality because this would result in a mathematical incompatibility with quantum theory. Herbert writes, “...thus, according to the quantum bible, electrons cannot be ordinary objects, nor could they be constructed of (presently unobservable) ordinary objects.” ³ As quantum theory has passed every test thrown at it, with measurement precision down to parts in the trillionths then the mathematical proof is correct.

The weird non-Newtonian behaviour doesn't stop there. In the quantum world there are no classical cause effect relationships, no normal logic and no normal behaviour, just abstract probabilities or information. Particles appear out of nowhere and vanish again (virtual particles), particles collide and turn into other particles and then suddenly turn back into the original particles, particles communicate instantly across any distance in space (entangled particles and non-locality), they can simply vanish and reappear on the other side of a barrier (quantum tunnelling), they can travel backwards in time, a particle can travel along every possible path to some end point all at once, if you know a particles position you can't know its momentum, particles also behave as waves and can move between these two states effortlessly, you can separate certain qualities or properties of a particle from its physical location—and on it goes!

My late wife asked me once what *quantum tunnelling* was. I responded it was another example of the Copenhagen legacy. In certain situations quantum theory allows that elementary particles can effortlessly pass through a barrier like a ghost walking through a brick wall. This has been verified experimentally. Of course classical physics forbids such things, yet the description of this abstract quantum phenomenon is couched in classical language and metaphors, therefore physicists talk about particles *quantum tunnelling* their way through barriers. This would be like seeing a ghost materialise from one side of a wall to the other and reporting you saw a real person jackhammer their way through the wall. In having to describe abstract phenomena in classical ways, you deny the existence and true nature of the phenomena, which is what the Copenhagen interpretation has done.

Non-locality, first exposed by Einstein, who didn't believe in it, then proven indirectly by John von Neumann and later by John Bell, has also been verified experimentally over the last twenty years. Physicists demonstrated it by showing how two entangled particles separated by a distance can affect each other indirectly without any known medium of interaction. The notion of non-locality is heavily biased by classical references. The term non-local refers to classical locality, which relates to Newtonian cause and effect, that is, things can only be affected by other things or forces by direct or local interaction. A swinging bat hits a ball, which flies through the air and smashes a window. Local interactions are mediated by physical things or forces and fields like the electromagnetic field and must physically touch each other in an unbroken chain of events. The bat touches the ball, which touches the window—you couldn't swing a bat and a window breaks fifty metres away without the ball! In this model of the world *action-at-a-distance* is impossible yet that's exactly what non-locality is, hence *non* local, meaning it works in a way that is not like normal classical locality. Physicists talk of the transmission of information faster than the speed of light in non-local interactions, which is a very classical description and confusing because it violates the speed of light, which is a constant. All of this is dangerously misleading—this is atoms as little solar systems. It is merely classical or Newtonian poetry—a romantic classical tale of how most physicists thought the world was, can only think in terms of it being or wished it would still be. Herbert pointed out in the eighties the majority of physicists 'abhorred the idea of non-locality, virtually refusing to accept it because of its blatant anti-Newtonian and mystical nature. After writing this in 1999 it is finally accepted now in 2015 after an experiment closed the last loop hole proposed by critics. Over the last twenty years it's been accepted in a practical sense like all the other abstract qualities of quantum theory but not understood and still thought of as some sort of signalling, (which of course it isn't). In saying this, each year an article appears in New Scientist with another physicist/s claiming to have

found a way to show that quantum weirdness isn't real and it's all just manifestations of the non-computational mind balls after all!

Every quantum mechanical term is actually a classical mechanical term either in the positive or negative. It's like calling the first car a *horseless carriage*. Its name was in a negative term of what was known at the time (it was a carriage but didn't have a horse) instead of naming it directly for what it was. North American Indians called trains *iron horses*, which is describing it in terms of what you know (positive). It's human nature to name things within the current paradigm, that's how we see them and not as they really are. However, quantum theory has posed and even greater challenge to our ability to describe reality. It's not just a new Newtonian thing we need to give a new name like car, it's an entirely new form of reality. A reality we can't describe with words or form images in our mind or even visualise with computers other than using three dimensional, Newtonian, classical, concrete analogies. Even so we still need to call quantum phenomena something closer to what it actually is—a higher dimensional projection. It's the same for superposition, wavefunctions, quantum uncertainty, wave-particle duality and all other quantum phenomena. Even though the mathematical models that describe them are relatively simple to understand, they can't be described with language other than classical analogies. The problem is these analogies' are taken literally.

It's extraordinary that even though physicists know the mathematics clearly and unambiguously demonstrates that particles are not actually real material things or could be made of anything material they lost sight of that. I understand that it is very seductive that particles can act like tiny material things but my point is these are professional academic physicists. They shouldn't be fooled in this way, no matter how viscerally real this seems and how difficult it is not to think of them as real material particles. Physicists of all scientists and of all people should not lose sight of this—but they have en-mass!

Why would very intelligent, highly trained, professional, academic physicists be fooled so easily? This is their professional business and their professional knowledge. As physics is the most fundamental of the sciences they are the guardians of this knowledge, the new high priests who give us our picture of the world and how it works. So of all people why are they bamboozled by the everyday physical appearances of this quantum stuff? I believe this is an example of how our brain is hardwired perceptually to experience the physical world of three dimensions and how this perceptual hardwiring must bias cognition, which gave rise to philosophical positions like empiricism and positivism, as well as learning styles that underpin scientist's training and thinking. Something that is only comprehensible in mathematical terms but impossible to talk about with language or visualise is a very difficult thing and a huge barrier. This neurological barrier is so daunting it has led to this extraordinary situation because physicists are wired to experience the world in this Newtonian way. Now they are experiencing the subatomic level they are still essentially being guided and biased by their natural hardwired perceptual systems. However, they continue to emphasise the strange, spooky, weird, mind bending behaviour of the quantum world to other scientist and the public—yet in their experimental and even theoretical work, the overwhelming majority think, behave and speak—as if it is actually material and the small scale end of space-time.

Some people seem to have a certain aptitude, inclination and hardwiring to feel and have altered states of consciousness that allow a glimpse of a non-material, higher dimensional reality—as well as think about it intellectually. Others, probably the vast majority, can't and

only a small minority of them can even think about it intellectually, remember the reference to Godel's advice of quiet contemplation. This doesn't seem to have anything to do with intelligence and/or education—it's just a human trait like mathematical, musical or artistic aptitude. However, even those that feel and glimpse experiences of it do not have the brain capacity to visualise or describe it with words in any ordinary state. No one does at this point in our evolution. Schrodinger believed that a 'satisfactory' model of the quantum world was 'unthinkable' (in the sense of thoughts and images created in the normal rational mind).

Fundamentally driven by a hardwired perceptual bias in their brain, the majority of physicists adopted the Copenhagen interpretation because it was the best way to continue with business as usual, in the quest for a rational explanation of reality that didn't involve any form of metaphysics, mysticism or spirituality. It created the illusion things were still very black and white and science was still triumphant in its mechanistic alternative to any religious or mystical worldviews.

The majority of scientists view the quantum facts strictly through *classically coloured glasses*, which denies the very existence of the quantum vacuum other than being literally the Newtonian-like world of the small. They see none of the metaphysical attributes and simply rationalise away everything that does not fit their particular, model, worldview or meme.

The majority of physicists have not been able to take that very important last step to understand and acknowledge the true nature of the quantum vacuum, even though it was formalised in 1928, almost ninety years ago! Weinberg, Peat, Herbert and Polkinghorne all commented physicists have a tendency to sweep aside difficult questions by simply declaring them *meaningless*! The majority of physicists don't care particles are abstract and behave in non-Newtonian ways. The success of the mathematical formalism made this easy, so other than to exploit the abstract properties of particles for technology, the abstract nature of the quantum vacuum is ignored.

On the surface it seems not to have any impact on physics but I believe it has dramatically distorted physicist's view of reality and it is this false belief that has caused the crisis in physics that many renowned physicists talk about. Schrodinger, Bohm, Peat, Smolin, and Herbert assert, in regards to 'reality' research (an understanding of what quantum theory is telling us about reality)—modern physics is in a crisis or physicists like Davies, Polkinghorne, Weinberg Rosenblum, Kuttner and Penrose point out there are real problems with the interpretation of quantum theory. Therefore I believe, as do many scientists, the whole of science has a serious fundamental problem with the interpretation of reality, as quantum theory provides the foundation of the scientific worldview.

I believe physics and in turn humanity has paid a severe price because of this interpretation. There is still no theory of everything (TOE) despite the brightest minds over almost ninety years and especially over the last thirty years of string theory involving the work of an enormous amount of theorists. There is still no reconciliation between the two great theories of reality, *Relativity* and *Quantum mechanics*. Reconciliation isn't working because physicists do not recognise the quantum vacuum for what it is and merely see it as a model of the small scale end of space-time. They treat space-time as fundamental and couch all quantum mechanics in this space-time. String theorists do the same with strings and the extra curled up dimensions, at the Planck scale as do quantum loop gravity theorists with quanta of space and time. M theory is mixed up too, so all these promising theories are stalling, despite veritable army of the brightest minds working on them.

Penrose believes we need a 'fundamental' change in our worldview or the way we

‘represent’ physical reality. He believes we need to search for a description that looks very different from the current quantum description, however it must be consistent with the mathematical formalism. He thinks it is extremely likely quantum theory will be superseded by some ‘profound’ change of viewpoint that would look ‘crazy.’ He compares this change to the way the relativistic geometrical picture of curved space-time with gravity as a space-time curvature, superseded the Newtonian picture of flat space and gravity as a force. Yet relativity theory maintained the mathematical formalism of Newtonian mechanics. Penrose is clearly talking about a new model or metaphor, a new picture of reality itself. I believe I may have Penrose’s answer, which I call the *higher dimensional quantum model*.

Is the Quantum Vacuum a Higher Dimension?

I believe this new insight or profound change of viewpoint Penrose referred to is to realise the quantum vacuum is real and exists as a fundamental, infinite, higher dimension and space-time is a non-fundamental, emergent, lower, finite four dimensional world created by, sustained and existing within this higher dimension. Talbot quotes Bohm describing space-time as a “...*pattern of excitation*...” that “...*is relatively autonomous and gives rise to approximately recurrent, stable and separable projections into a three-dimensional explicate order of manifestation.*”⁴ Talbot writes, “*In other words, despite its apparent materiality and enormous size, the universe does not exist in and of itself, but is the stepchild of something far vaster and more ineffable.*”⁵

This higher dimensional quantum reality is equivalent to and represented by the abstract Hilbert space, Bohm’s implicate order and the bulk in M theory. There is no actual space, time or matter below the level of atoms only the higher dimensional potential that I call *classically-real potential* (wavepacket or particles), strings, quanta of space and time and Herbert called ‘quantum stuff’. This form of the potential ends at the Planck boundary, which marks either another higher infinite dimension or a higher/deeper sub-dimension of the quantum vacuum. Here the potential of matter, space and time (classically-real potential) exits at a higher and more abstract level of potential I call *quantum abstract potential* represented by the wavefunction, gravity, the nuclear forces and electromagnetic energy exist at this level too.

The quantum vacuum has sub-levels or dimensions, reflected by the hierarchy of particles in the standard particle model, virtual particles, massless particles, the extra curled up spatial dimensions and the Bulk of string theory, the four complex dimensions of twistor theory, the spin networks of quantum loop gravity theory, gravity and the superforce. Based on this model relativity theory can’t be reconciled with quantum theory despite physicist’s best efforts over the last eighty seven years, including Einstein, because physicists see them as a description of the big and small ends of space-time, when they are two very different dimensional realities. Relativity is a mathematical model of an emergent, finite, four dimensional universe and quantum theory is a mathematical model of a fundamental, infinite, higher dimensional universe. The fact we need greater energy to probe so-called smaller scales in the sub-atomic world suggests to me these small scales are actually dimensions of infinite size and energy and why so much energy is needed. If they were really smaller classical dimensions you would think the energy requirements would become less. However, the quantum vacuum is full of examples of infinities that I believe suggest its infinite and not microscopic size. Davies claimed that “*Physical existence surely can’t be rooted in anything finite.*”⁶

As the quantum vacuum is a higher dimension existing outside of time and space, it appears to be abstract and unreal from a classical or lower dimensional perspective (hence the Copenhagen view there was no quantum world just a mathematical description). However, it is a very real, separate higher dimension that space-time exists in. Its higher dimensional nature shows up as:

- Infinite and enormous energies.
- The measurement problem.
- Problems with infinities.
- Quantum fluctuations.
- Non-locality.
- Quantum uncertainty.
- Quantum indeterminism.
- Wave/particle duality.
- Superposition.
- Quantum tunnelling.
- Particles changing identity.
- Particles being created or destroyed.
- Anti-particles.
- Virtual particles.
- Gravity.

As space-time is made of this higher dimension it also shows up as:

- It appears continuous and infinitely divisible.
- Infinite singularities.
- Black holes.
- Time dilation.
- Space contraction and warping.
- The expansion of space.
- Block time. (past present and future all existing at once like places in a landscape)
- The passage and arrow of time being an illusion.
- Photons don't experience time or distance.

Another way of thinking about these weird, abstract quantum behaviours and properties is that we are seeing how higher dimensional phenomena appears in our lower dimensional reality. However, we don't see it directly in its higher dimensional form, we only detect its lower dimensional projections in our lower dimensional world—in the form of sub-atomic particles. Think of particles that appear from nowhere and spontaneously change into other particles then disappear. Observing the weird non-Newtonian behaviours of particles, we are like the *Flatlanders* looking with incredulous amazement, as a 3D sphere from the third dimension penetrates our 2D world, looking like a dot that appears out of thin air and grows into a circular disc that keeps expanding, then inextricably begins to shrink again down to a dot and finally vanishes back into thin air. Sounds like particle interactions to me!

Since the first time I read about quantum theory in *The Strange Story of the Quantum* in 1990 I believed the quantum vacuum was a higher dimension. If this is correct it means physicist stumbled into a higher dimension almost ninety years ago and didn't realise it. If any did their views were drowned out by the Copenhagen interpretation, which arose as a crude and simplistic strategy to deal with a higher dimension by saying it doesn't exist, only

an abstract mathematical description does. I believe my reinterpretation of the quantum vacuum is a ‘profound,’ as Penrose put it, change of viewpoint and it may look ‘crazy,’ as he said from the mainstream perspective but it preserves the mathematical formalism as Penrose stipulated.

However it’s not even that crazy really as in the sixties physicist David Bohm referred to the vacuum as a plenum and argued there are no individual species or annihilations—particles are not destroyed, they merely enfold into and unfold from the underlying, infinite, non-local, primary potential, which I infer as a higher dimension. In order to unify the five different string theories and account for gravity, M theory was created that demands a higher dimension that space-time exists in. Penrose’s twistor theory is written in four complex dimensions extrapolated from space-time called Twistor space, which is a higher dimension. So the idea of not just extra dimensions but possible infinite higher dimensions is on the scientific table again.

Even more interesting evidence for higher dimensions is something I discovered in July 2015, twenty five years after originally thinking about the higher dimensional nature of the quantum vacuum and fifteen years after originally publishing some ideas about it. Nima Arkani-Hamed professor of physics at the Institute of Advanced Study at Princeton and Jacob Bourjaily a theoretical physicist at Harvard, have found a mathematical object that looks like a jewel in a higher dimension called the *amplituhedron* that encodes complex particle interactions in its faces. ⁷ The object doesn’t change at all, yet it encodes all the possible particle interactions. As it is fixed and doesn’t change Arkani-Hamed states that it demonstrates locality and time are not fundamental, therefore space-time isn’t fundamental. Unlike the bulk in M-theory I believe it is more direct evidence that space-time is the product of a higher infinite dimension that contains all of the potential for space-time, all it contains and everything that has, is and could ever happen. What is also interesting is their work has evolved out of Penrose’s earlier work with Twistors, which I immediately resonated with because it used imaginary numbers to create complex dimensions that I interpreted as higher dimensions. I believe imaginary numbers are clearly demonstrating the higher dimensional nature of reality, I will discuss this in Section Three: *Where does the complexity come from?* Incidentally since first reading about the wavefunction in 1989, I believed it represented a higher dimensional object and it too is made of imaginary numbers like many other things in quantum theory and time in relativity.

In the higher dimensional quantum model I propose the quantum vacuum has two major boundaries, one at the atomic level that interfaces with space-time and the other at the Planck scale, which interfaces with a deeper sub-dimension of the vacuum or perhaps another infinite higher dimension. The boundary between the vacuum and space-time is abstract, as the vacuum is a higher dimension and exists at the level of atoms, specifically inside atoms, which begins at the electron cloud. It demonstrates this abstract nature by the way that quantum fuzziness smears up to the scale of molecules. Basically the outside of atoms is space-time and the inside of atoms is an infinite higher dimension. The atomic boundary is where the actuality of space-time ends and what I call the classically-real potential of it (sub-atomic particles, space and time) begins in a higher dimension.

Section Three: The Information Universe

A hot new topic in physics today is quantum information theory. Many scientists have begun to realise that quantum information is some weird new phenomena, more fundamental than anything else in current quantum physics. They conclude that it is this deeply fundamental, non-local information that actually gives sub-atomic particles, forces and fields their strange abstract qualities and behaviour—all quantum phenomena owes its existence to an underlying higher dimensional reality of *fundamental*, quantum information. Because particles, forces and fields underpin our concrete world, we must conclude that the basis of our classical, concrete world and its classical information is this fundamental quantum information, I refer to as *quantum-abstract information*. Physicists believe that an understanding of quantum information will transform quantum theory, taking it beyond *mere* physics and thus profoundly changing our view of reality.

Physicists have *teleported* photons over several kilometres using quantum information. However, scientists are using what I describe as *applied quantum information*, which is merely attaching classical information to sub-atomic particles. Because these particles are made of quantum information, scientists can utilize their abstract natures to process classical information, impossible to do in a purely classical situation—which is the basis of quantum computing. It is important to understand that attaching classical information in novel ways to particles and utilizing their abstract nature to process information, is distinct from and secondary to, the underlying fundamental quantum information that gives rise to the particles themselves.

It's this fundamental quantum information that I propose the information universe is constructed from and not the secondary aspects that involve classical information. As I argued in *Section Two* the quantum vacuum is an infinite higher dimension, therefore this information must be infinite and higher dimensional also. As the underlying reality of classical information is quantum information and this information seems so abstract and unreal compared to classical information, I refer to the quantum information as *quantum-abstract* and the classical information as *classically-real*. However, this quantum-abstract information is actually more real than classically-real information, no matter how weird and unintuitive it appears to us.

My proposed Information model of the universe is built on the higher dimensional quantum model from *Section Two*. It can be viewed as a metaphor or a model depending on your understanding at present. It is based on the ancient concept of hierarchy expressed by the metaphysical nature of numbers, the modern hierarchical view of the cosmos, within the context of computation. It co-maps with the *set theory universe* of a hierarchy of greater infinite sets each containing the set below it ending in ending Cantor's *Absolute*, which is not a set as it contains itself. Each set is an infinite higher dimension and the Absolute is the concept of God. According to the reflection principal in set theory the absolute is unknowable in any direct way. This fits with the limits of logic, described by Godel's *incompleteness theorem* in mathematics, the Turing's *halting problem* in computation and points to a limit to rational enquiry. I believe this demonstrates that any concept of God is infinitely, incomprehensible and inconceivable in any rational way—the ultimate mystery at the end of the information universe. I believe it's a waste of time and energy debating God but it is

useful and meaningful to have an operational definition to give us context and a measure of humility.

From the Absolute emerges the *one*, an infinitely fundamental and abstract information hierarchy that could also be thought of as a type of cosmic substrate or a virtual computer—but not like any form of computation we use or understand. The *one* contains all of the information and potential for the *many* that unfolds hierarchy by hierarchy, as a series of smaller infinite dimensions. The one computes the *two*, which computes the three, etc, down through each hierarchy. Each level has an emergent intelligence and teems with individual informational entities and software programmes. Each dimension expresses a new emergence, (this is what it computes) which cascades down into the next level. Each higher dimension remains hidden to the dimension below and so in our finite universe we are barred from seeing the infinite directly, which begins with the quantum vacuum.

You could also think of this computation as simulation, so each higher dimensional hierarchy is a virtual computer or simulation that simulates the next level of emergence, which is also an infinite dimension, simulation, virtual computer or substrate. As such each infinite dimension or hierarchy could be thought of as a *hyperspatial virtual reality* and the cosmos as a *higher dimensional hall of mirrors*. A good analogy is known in computation as *successive embeddings of computational logic*. A virtual computer can be created within a physical computer, then another virtual computer can be created in the first one and another within the second one and a third and forth, etc, which in principle can continue infinitely. Except in the case of the information universe the virtual creates the physical and not the other way around, as in our world of physical computers.

At the very bottom of this hierarchy is the last simulation, which is our space-time universe. It is the only level that is local, finite, material and exists in time, making it absolutely unique in the cosmos. This is why I say the cosmos has created the physical from the virtual, which is also the lower dimensional from the higher dimension, the concrete from the abstract.

At the lowest higher dimension of the cosmos—the quantum vacuum, space-time is computed into existence by downloading higher dimensional information to create, then sustain a finite lower dimensional reality. In doing so it creates the arrow of time, entropy and all the evolutionary systems dynamics discovered in chaos and complexity that manifest as self-organisation and a trend to complexity in the universe and in the evolution of life. Therefore all these phenomena, including space-time itself are emergent. This quantum-abstract information is the abstract organisation making up the software that contains all the information for the next dimension and everything that will evolve within it, which represents a type of *abstract design*. In space-time design is the potential contained within all the programs running on the quantum substrate that compute and simulate space-time and its evolution. Therefore design in the information model is a natural consequence of the higher dimensional software.

The ‘many,’ which includes the quantum vacuum, is the *world of ideas*—the Indian mystics called it the *Akasha* and Rucker calls it the *mindscape*. Plato described it as a world transcending time and space filled with archetypal, geometric forms and mathematics that are the templates for the physical universe, which is known as the *Platonic realm* that many esteemed scientists and mathematicians strongly believe in. The information universe is infinitely connected, which is demonstrated in quantum theory, cosmology, complex numbers, twistor theory, connectionist models, artificial life, complexity theory, quantum

computing, chaos theory and in the beautiful Mandelbrot set of infinitely repeating fractal patterns.

Many scientists working in the new science of artificial life believe that the digital entities they have created in computers already exist and they simply provide the means (computers and mathematics) for them to manifest. Chaos scientists working in the complex plane (an abstract space created by imaginary numbers) have experienced this phenomenon, where they discovered abstract entities that were hidden, yet influenced the concrete world. I believe that the set of imaginary numbers and the complex plane are the key to the illusive and abstract higher dimensions that contain the Plutonic realm, mindscape and the Akasha. You could say this is where the information and complexity come from.

In the Information model I use the metaphor of computation and simulation. Many other scientists advocate this, however they believe only in classically-real information, which I argue is not fundamental but merely an emergent phenomena of higher dimensional, quantum-abstract information. In a higher dimensional universe (hyperspace) computation and simulation have an infinite degree of complexity, potential and abstraction. There are two aspects—structure and mechanism, which is computational and consciousness, which is non-computational.

The computational structure of the cosmos including its software or abstract organisation can be seen as agents or entities. Each infinite dimension must be teeming with an infinite amount of these agents. Some represent the hierarchy of software that computes and simulates the structure of the next dimension, including all of the structure of space-time from an atom to a galaxy. Others are archetypal patterns that represent all life in our universe and can be seen as a form of higher dimensional life in their own right. Others represent purely hyperspatial life with no reflection in space-time that could be thought of as a hyperspatial equivalent to artificial life and intelligence. As this structural aspect of the cosmos is computational, it creates life-like and consciousness-like behaviour, again like the lower dimensional versions of artificial-life and AI. Collectively these agents create a hyperspatial mind similar to the AI models of intelligence based on an ecology of agents, layered in hierarchies from dumb and simple to more complex and smart, competing and cooperating to create a mind. I believe some of these agents are what people experience as gods, spirits, entities, angels and demons, etc.

I believe consciousness is not a computational phenomena but a direct projection from the Absolute and therefore infinitely fundamental in the cosmos. You could say God is observing and experiencing through *Its* creation, therefore the information universe and everything in it, including us, is a vehicle for Gods expression and experience. All of the agents in the cosmos provide consciousness with a unique perspective to observe and experience reality. However, the paradox is that higher order agents like ourselves feel that it's us having the experience. I believe consciousness is the lifeforce, as life seems to offer it the greatest potential to observe, experience and express itself, with sentient beings like us representing the highest form of life.

There must be an archetypal agent for all life on earth that has ever existed, does exist and will exist, including us. The existence of this agent has been known since Neolithic times and called by many names such as *great spirit* and *Gaia*. As the concept of God is incomprehensible and unknowable in any direct way, I believe it is more useful to reconnect with Gaia and it's possible it may be attempting communication through crop circles.

In terms of the cosmic mind model we are an *agent* in the society of hyperspatial mind, deeply entangled in the consciousness of reality itself. In terms of a hyperspatial virtual reality we are unimaginably complex, multi-dimensional graphics in the hyperspatial, virtual reality imbued with fundamental consciousness. In terms of computation we are a multidimensional computational substrate that offers consciousness a unique perspective to observe and experience reality. I believe we have the emergent potential to literally wake up to this because consciousness allows us free will and access to higher dimensional perception.

We can develop neurotechnologies to re-structure our brains, enabling us to interact or manipulate the infinite plasticity of the hyperspatial graphics at the level of mind via consciousness. This amounts to a computational model of enlightenment. Eventually we will develop applied technologies based on higher dimensional physics and quantum information theory to manipulate reality with technology. This amounts to a technological model of scientific magic. We will be liberated to play within the limitless hyperspatial, virtual reality game—we call life and the universe. The example of teleportation I mentioned earlier is merely the tip of the iceberg!

Section Four: Life

Modern science cannot agree on a definition of life. Some scientists and philosophers argue it's not important. The definitions that do exist have focussed on mechanical processes, describing living organisms as nothing else but biological machines. Recently the new science of artificial life (a-life) has introduced a new way of understanding life in terms of computation and the *abstract organisation of information*. It defines life's essence as the dynamic patterns and processing of this information, which is independent of the material form it is in, much like software is independent of the different hardware it can run on.

I find this new understanding of life and the artificial life entities used in computer simulations very exciting and important. I do not agree with the enthusiasm of scientists who believe that classically-real information is the absolute essence of life or that these artificial life entities are really alive or ever could be. Davies, in his latest book *The Fifth Miracle*, cautions that we should not be 'mesmerised' by the mechanistic view of life's 'simplicistic charm.' I agree and warn that Davies and others should consider this advice, as I believe they are 'mesmerised' with the charm of mechanistic information and life. They even go so far, including Davies, to suggest it is a scientific form of 'vitalism.' Davies concludes that life arose from a mutant molecule, which then followed Darwinian laws and was helped along by laws of complexity not yet fully understood. However, he makes the point all throughout his book, there still remains the mystery of where the biological information comes from in the first place.

The key a-life scientists are puzzled too, they generally believe that all the answers will be magically revealed when they discover the laws of complexity and integrate them into thermodynamics, producing what they call the 'new' second law. This refers to a new law of entropy, which accounts for self-organising systems, especially life that is able to create and maintain greater order from chaos, which is opposite to entropy—order to chaos. Davies reveals that all other scientists directly and indirectly involved in the question and research of life and its origin are puzzled too.

I argue in this Section that life is infinitely more complex and mysterious than scientists' wildest dreams, for exactly the same reasons the universe is more complex and mysterious. I strongly argue that even though abstract organisation of classically-real information is an important and useful breakthrough, it needs to be immediately superseded by a model of life based on non-local, higher dimensional computation and abstract organisation. This is fully consistent with the Information model of the universe outlined in Section Three. Interestingly, Davies introduces the idea of global or non-local realms to account for bio-information. However, he succumbs to conservatism with his 'mutant' molecule idea. It sounds 'sensible' but it is artificially constrained by the materialist bias in mainstream scientific thinking. The archetypal pattern for life contains non-local bio-information for life that downloads into space-time via particles and atoms. As such life has used nanoscale quantum technology from its beginning. I predict we will find that living things are *bristling* with nanoscale quantum structures that utilize quantum computation and dark energy, whatever it is. Scientists have discovered some of these quantum structures and some traditional cultures know about and have been utilising the subtle energy in the body.

From a computational perspective the original information, the *seed* of God that created

the substrate and program of the ‘one’ and its entire expression, as a series of infinite higher dimensions making up the ‘many,’ are computational and form the structure and mechanism of the cosmos and living things. The other part of this expression of God is consciousness, which I argued in *Section Three* was non-computational. There has been and still is great confusion about what the life force is. It has been mistaken for nature, soul, spirit and subtle energies. With the advent of science it was electricity and radiation and now with a-life some scientists believe its abstract organisation of classically-real information. I argue that none of these are the life force, including any higher dimensional abstract organisation all the way to the ‘one.’

I propose that the ultimate definition of life force is actually consciousness, as life seems to give consciousness the greatest potential to experience and observe. If consciousness is in everything, then the life force is too and the whole cosmos, with everything in it, could be seen as alive and conscious to varying degrees, on a continuum from inanimate to animate in space-time, to abstract and virtual in higher dimensions. Computation provides life-like and mind-like capacity, while consciousness provides the inner experience and real life.

If space-time is a simulation from a higher dimension running within that higher dimension, then higher dimensional phenomena like sub-atomic particles, then emergent phenomena like atoms and molecules must contain all the information of design, purpose and life—like a holographic image. Remember Deutsch said the quantum universe had the property that any piece could simulate the whole. The potential for life exists in every atom in the universe. When atoms are arranged in certain ways by laws of complexity and self-organisation at *the edge of chaos* where information is balanced, life-like behaviours emerge, culminating in what we call life. Life comes from a higher dimension and smears into existence in matter creating a continuum from inanimate to animate, therefore life is literally in the chemistry at the sub-atomic level but we can’t see that directly.

This is why many scientists believe it looks like we are getting something for nothing from complexity. However, as I explained in *Section Three* based on my computational model, any hierarchy that computes another hierarchy below it, always remains hidden from what it computes. We don’t directly see the quantum-virtual substrate that is simulating space-time! Therefore, we don’t directly see the hidden complexity that generates the complexity we see in space-time. This is the computational version of cosmic censorship, nature doesn’t allow us to see any infinite directly, at least with our lower brain states and our technology.

The paradoxical nature of an infinite higher dimension that exists outside of time and space that creates and sustains our lower dimensional reality, has in itself created a great deal of confusion in physics specifically and all science generally. Therefore the mainstream materialist interpretation of science is that life is an accident in a blind, purposeless universe, whereas other scientists like Davies argues that the universe seems suspiciously bio-friendly. The very laws and constants are tuned in such a way as to produce a universe that is capable of life. Change any tiny detail at this level and it would be impossible for the resulting universe to sustain *any* form of life, which Davies and many other scientists believe is strong evidence for design and purpose.

Based on the information model the computation at each hierarchy and all the software it contains that simulates each hierarchy below it, including everything within it, represents a type of *abstract* design. In space-time design is the potential contained within all the programs running on the quantum substrate that simulate space-time, creating its evolution

and the evolution of life, expressed as all the dynamics of self-organisation and a trend towards complexity. There must also be archetypal patterns or software containing all the bio-information that represents all life and its evolution in space-time. I argue the information in this higher dimensional software that exists outside of time and space represents the design for life and its evolution. Therefore design falls naturally out of the computational mechanism of the information model. If the purpose of the cosmos and life is for God to express and experience, then we have a profound yet simple metaphysical definition of purpose.

Science has discovered the bottom-up, lower dimensional, space-time, mechanistic feedback that has enabled us to view life as a material-only self-sustained *anomaly*. This includes Darwinian evolution right down to the molecular level, and now it includes a level of abstract organisation of classically-real information, self-organisation and the dynamics of complexity. However the hidden, abstract, higher dimensional level hasn't been accepted. In physics there is no complete higher dimensional model to account for reality, just mixed up versions like string theory. Therefore there is no mature higher dimensional theory of bio-information in all its forms I call *hyperspatial top-down feedback*. An understanding of this along with life's use of dark energy and quantum computation will revolutionise our understanding of life and be an enormous advance for science with untold, unimaginable futuristic applications.

Based on an information model of the universe, computation provides the mechanism and structure that creates a hierarchy of dimensions filled with software that can be seen as agents or entities. Computation also creates life-like and mind-like behaviour in those agents and consciousness gives them an inner experience to varying degrees, therefore the cosmos is teeming with higher dimensional non-physical life of varying degrees of intelligence. Some of these agents could be seen as the entities, spirits, demons, angels and even gods that humanity has always believed in and claimed to interact with since the Neolithic. As they are higher dimensional they have seemed god-like. As such this gives us a plausible computational mechanism that allows for such entities to naturally exist, which supersedes mystical and mainstream science models. I believe this is important for our sentient and spiritual evolution.

The evolution of life on earth has shown that the lifeforce is ruthlessly uninhibited in its expression with most of life becoming extinct. Even though I believe we are the cutting edge of this expression there are no guarantees for our survival, as life can continue here and elsewhere including sentient life, even if we destroy ourselves. We have painted ourselves into an evolutionary corner, where our intelligence has created science and its technology that amplifies both the good and bad within us. We have the power in our hands to transform humanity and society to undreamt of levels or to plunge us into a nightmare, it is up to us. We are at a point in our evolution where we must face what I call common human evil and deal with it once and for all at its source, where it is hardwired into our brain, using neuroscience and neurotechnology.

Doing so would represent an adaptive edge that will enable us to thrive with the enormous power we will have from rapidly emerging disruptive technologies of nanotechnology, AI, robotics, synthetic biology and genetics. This will raise our sentient fitness function, which is paramount to an evolutionary advance in humanity, spiritual enlightenment and humanity becoming a conscious deliberate force of evolution ourselves. I believe this is a natural development for sentience, wherever it is in the universe.

About the Author

Jonathan Robert Banks is an author, inventor, futurist, philosopher, teacher, metaphysician and ex-professional musician. Jonathan has always been a free thinker with a gifted, creative and inquiring mind. He has strong analytical skills, as well as intuitive abilities, which gives him an intrinsic understanding of his passions—science, metaphysics and the future.

Jonathan has published several scientific papers (one in a peer reviewed journal) and many articles in business, sports and new age magazines. He has gained extensive media interest with his consulting work with features on, Sports Tonight, A Current Affair and Today Tonight, as well as many magazine and newspaper articles and radio interviews.

Jonathan came from a teaching background to the business world. He was Stress Management Consultant for the Royal Adelaide Hospital in South Australia and Peak Performance Consultant for corporate executives, elite and professional sporting teams and athletes. He has developed leading edge neurotechnology devices and CDs/Mp3s, utilising state of the art technology for stress management, rehabilitation and peak performance, currently being used by hundreds of professionals.

Jonathan has developed cutting edge models and interpretations of the quantum world, metaphysics, enlightenment, human evil, the self, disembodied entities, evolution and the life force. Jonathan continues to study and practice personal and spiritual development.

He is an accomplished trainer, speaker and writer and is committed to and passionate about communicating his work to audiences around the world, via consulting, books, articles, blog posts, lectures and workshops.

Jonathan is well travelled, including a 1981 circumnavigation of Australia in a light aircraft, backpacking around Europe, India and Asia and lived on an uninhabited island in Micronesia. He is a keen bushwalker and finds nature soothes the soul and inspires creativity.

Jonathan has a three teaching diploma from the University of Wollongong and a three year psychology major as part of an almost completed BA.

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