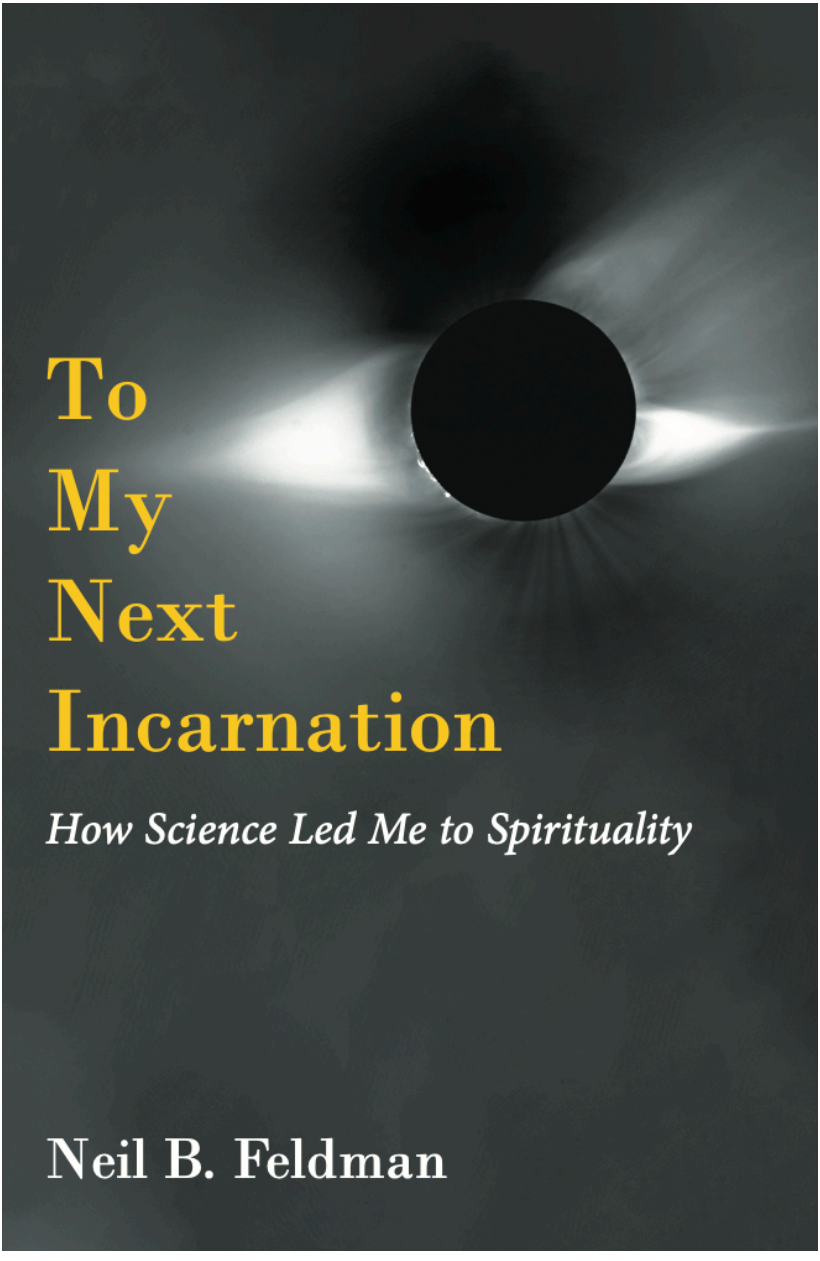
To
My
Next
Incarnation
How Science Led Me to Spirituality
Neil B. Feldman

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Neil B. Feldman
with Judy Scott Feldman and Anna E. Feldman

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The cover photo shows the 1995 solar eclipse as seen in Allahabad, India, which marked a significant moment in Neil's life (see pp. 105-106).

To My Next Incarnation

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As I was contemplating (my imminent death), I found myself saying to myself: "I just wish that I could remember, in the next life, what I've learned here. I don't want to go through this all again, to get to this point, and realize, oh shit, that's what this is!" But there's no guarantee we take any of this knowledge with us into the next life. All we know is – all I know is – that consciousness must be conserved. You can't create consciousness, and you can't destroy it.[1]

–Neil Feldman, September 1st, 2014

[1] Excerpted from video of Neil discussing his thoughts on science and Vedanta. The videos, and transcripts of the videos, can be viewed at https://www.nextincarnation.com.

Introduction

I died on July 30th, 2015.

That is, the body I had occupied since 1952 failed on that date. In the sixty-two years I had lived in it, I had been an electrical engineer and entrepreneur, the husband of an accomplished and wonderfully supportive woman and the father of another. I had also been a student of both modern physics and the ancient Indian philosophy called Advaita Vedanta.[2]

Being a student of physics meant learning about the amazing, counterintuitive propositions that make up Relativity and Quantum Theory – notably that the "reality" we experience through our five senses, through our perceptions of time, space, and causation, is not ultimately real.

[2] Cf. https://www.advaita-vedanta.org/avhp/. Although Advaita is one of several schools of Vedanta philosophy, when Neil uses the name "Vedanta" alone, he is almost always referring to Advaita.

Being a student of Advaita Vedanta meant coming to appreciate that – just as physics tells us – the "reality" we experience is unreal, a magic show, but underneath it there's something that is real. In a famous Vedanta metaphor, there's a rope that we mistake for a snake. That underlying rope of reality is infinite, it's unchanging, it's undivided, and in ways that I don't fully understand even now, it's spiritual, accessible to us via consciousness. Perhaps it is consciousness.

If all that seems crazy, think about this. I came to my view of what is and isn't real through my study of science. Science didn't compete in my life with spirituality; it guided me to it.

I was a nerdy science kid and tinkerer in high school. When I first learned of and began to understand Albert Einstein's Relativity theories, and then Quantum Theory, my worldview was shattered. What unsettled me then (and still does now) is this: these theories tell us that we can't trust our gut feelings, our common sense, our own viewpoints to understand what's going on in the universe or even in front of our very eyes. All of us experience the universe as an environment "out there," separate from us – the so-called "world around us." But the equations of modern physics suggest that we're mistaken, that what we're perceiving is actually not "out there," not separate from us. There is no duality between ourselves and what we "see." What we perceive as outside of ourselves is a kind of apparition.

The mind-boggling realities revealed by modern physics led me to ponder the role played in the construction of reality by the very minds that are boggled – that is, by our consciousness. I came to think – and still think now – that there are things going on behind everyday reality that we don't

understand, but that are important to each and every one of us. Whether we quite acknowledge it or not, we're all trying to figure out what life and the universe are about. Relativity and quantum physics tell us that there's something very, very weird underneath what we experience as the common everyday universe. That weirdness has been slapping us in the face since the early 20th century; I began wrestling with it early in life. Science could take me only so far in this wrestling match, but when I learned about Advaita Vedanta, I acquired new holds to use in grappling with the weirdness. I've never stopped, and never expect to.

But my body did stop, and while I'm certain I'll continue my quest in a new body, as a different person, I worry about losing track, between incarnations, of what I've learned. So, with the help of my wife and daughter I've composed this book – about science, spirituality, how they relate to one another, and the nature of reality. I hope I'll find it, and find it helpful, in my next life. I hope, too, that others may find my voyage of discovery interesting, and perhaps a spark for their own explorations.

Today, I don't think you'll find many professional physicists or cosmologists who talk or write the way I do here about the universe – that what we think we experience is some sort of apparition and that the true reality is grounded in what we call our consciousness. At least, few discuss it professionally, and if they do, they are often soundly denounced or disdained for straying from the silo of science. However, some do hint at the existence of something beneath the universe we perceive. John Wheeler posited what he termed a "pre-geometry" underneath the reality we think we

experience. David Bohm wrote about an "implicate order," and proposed that the universe resembles – perhaps is – a gigantic hologram.

Let me be clear about the fact that in the life I've recently ended I was not a professional or academic scientist. I was an engineer, trained in science. But I've always wanted to figure out what I was doing here, and what this meant for how to live my life. I think most people have similar goals. Some find the answers in their religions. Others fall into atheism – denying that anything is going on besides what they see around them. Still others say, in essence, "don't bother me with that. I'm just going to enjoy everything. This stuff is too heavy." But I think we're all nonetheless trying in our own ways to figure out how reality works. Some of us are more interested than others, but that may be only because we've had more experiences.

What kind of experiences? There's the great example of the Buddha, who began as a royal prince called Siddhartha. His was a very privileged existence, and his father wanted to keep it that way. His father wanted to protect his son from life and went to great lengths to keep Siddhartha from understanding that everybody, no exceptions, is subject to three things as they go through life: pain, sickness, and death. Nobody gets out of those, no matter how much money they have, no matter how sophisticated they are.

But Siddhartha does figure it out, and asks, "Is there no way out? Clearly the way of denial doesn't work." With his massive intellect, he decides that he's going to figure this out, one way or another. He sits under a tree and says, "I'm not moving until either I find out the point behind all this or I just give up the body because there is no point." Of course, he did find a point,

and became the Buddha – on whose thinking a major world religion is based.

Most of us, though, spend a lot of time trying to be Buddha's dad, and remain in denial. It was Vedanta that showed me a way to face reality.

To me, Vedanta seemed a more convincing and rational answer to Siddhartha's question than does Buddhist thought. Buddhism and Vedanta agree that our interpretation of reality is a misperception, and that the way to find true reality is to look within. But where Buddhism finds and accepts nothingness behind the misperception, Vedanta sees a higher reality that's attainable through consciousness.

A childhood fascination with radio sparked my interest in physics, which – specifically in the forms of Relativity and Quantum Theory – taught me that the matter we see around us is actually energy, and that energy is organized in some very strange ways. In the well-known words of Niels Bohr, the Danish physicist and Nobel laureate who was among Quantum Theory's discoverers: "*Anyone who is not shocked by Quantum Theory has not understood it.*"[3]

I came to understand it, at least enough to be shocked. I came to agree with Sir James Jean, who said: "*The Universe begins to look more like a great thought than a great machine.*"[4]

I tinkered and experimented through high school, and started college still wanting to know what it does to our understanding of "reality" when science suggests we can no longer depend on our "common sense" perceptions of the

[3] From https://en.wikiquote.org/wiki/Niels_Bohr. See also Barad 2007: 254, and footnote citing *The Philosophical Writings of Niels Bohr* (1998).

[4] Jeans 2017 (1930): 137.

world. As it turned out, even the physics experts I looked to couldn't answer that question, and most didn't even try. The interpretations of Einstein's equations and Quantum Theory available at the time ignored their disturbing implication that we exist in some sort of non-material-based universe.

> *Judy adds: This was the dilemma that Neil saw as a challenge throughout his life: what did it mean to be rational and scientific when science itself is telling us we misperceive reality? Can we just go through life as if classical physics accurately describes the universe, or do we have a task, an obligation, to face not only the scientific but also the philosophical and moral implications of Relativity and quantum physics?*

Vedanta is little known in the west but is one of the world's oldest surviving spiritual traditions. Like quantum physics, Vedanta posits a reality behind what our senses ordinarily reveal. Vedanta explains that the universe arises from and is sustained by infinite consciousness. That consciousness is imminent in all beings. As Swami Vivekananda – who introduced Europeans and Americans to Vedanta in the 1890s – put it after talking to an audience about "matter" and "thought:" "*There is a third something of which both matter and thought are products.*"[5]

Vedanta thinking holds that the universe is produced and sustained by consciousness – an infinite consciousness called "Brahman." Our task, Vivekananda explained, is to awaken our consciousness to that higher reality – that "third something." By thus dispelling our sensory misperception, we can come to know Brahman, God, the Oneness behind the observable

[5] Vivekananda 1993 (Complete Works), Vol. 5, Sayings and Utterances.

universe. Advaita Vedanta, Vivekananda said, is "this conscious knowledge that all is one spirit."[6]

I recognized in Vedanta a system of belief that was firmly rooted not in doctrine but in one's direct experience. Vedanta did not defy reason. Vivekananda said with regard to Vedanta, and any religion, "stick to your reason until you reach something higher; and you will know it to be higher because it will not jar with reason."[7] I believe that every religion should be put to this test – does it comport with reason? If it doesn't pass that test, it should be thrown aside as a superstition. Advaita Vedanta doesn't contradict reason, it transcends reason. Reason takes you only so far. We should be honest enough to admit that. I think that reason can take you right to the line at which you realize that there's something underneath this show, but it's not sufficient to reveal what that something is. That, to me, is very appealing; we can get a glimpse of what Brahman is by reading the accounts of Vedanta and other mystics who've actually crossed this sort of line and experienced the ultimate reality.

My serendipitous encounter with Advaita Vedanta forty years ago started me on a voyage that turned into a life-long passion. I believe that Vedanta has a special resonance for our time, for the West and for the entire world, well into the future. Swami Vivekananda believed that the West, and in particular the United States, was fertile ground in which Vedanta could

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[6] Vivekananda 1993 (Complete Works), Vol. 8: 139, "Is Vedanta the Future Religion?" See also Feldman 2013.

[7] Vivekananda 1993 (Complete Works), Vol. 7, "Inspired Talks." See also Feldman 2013.

germinate and grow, fed by a people founded in and committed to freedom, equality, and reason. I agreed, and still do.

Quantum Theory and Vedanta have together taught me that what we think we perceive around us day-to-day is not reality, and that what is reality is strongly, even entirely, dependent on or related to consciousness – to the presence of some conscious, aware observer. As a result, I believed – still believe – that there is no conflict between modern science and spirituality, in particular the spirituality of what until recently I declined to call my "religion," the Advaita Vedanta philosophy.

Of course, as many writers have pointed out, there is conflict between science and specific religious beliefs, such as the doctrines of the Abrahamic religions concerning the origins of the universe, the nature of God, and so on. But my aim is not to reconcile science and all sorts of religious tradition. I want to show the compatibility of science and spirituality as understood in Advaita Vedanta. Advaita Vedanta is more a spiritual philosophy than a religion as the term is used in the West. It is an utterly accommodating belief system that can embrace the fundamental teachings of all others, including Christianity, Islam, Buddhism, and Judaism – the religion of my ancestors.[8] I think Vedanta offers new avenues of understanding for those who respect the world of science but also ask a question science cannot answer: what does it all mean?

The non-conflict between science and spirituality was and is important to me, not only because I relied on science in my

[8] For a clear, non-technical description of Vedanta, see Atmarupananda 2010. For details and links, see https://www.advaita-vedanta.org/.

work while finding wisdom and comfort in my spiritual practice, but because I know that many, many other people are troubled about science and spirituality. Does modern science require us to be atheists? Are we only our material bodies, our material brains? Or are there other dimensions of reality? If so, what are they? What do the answers tell us about morality, about how we should live our lives?

I believe strongly in a spiritual dimension to reality. Many people do, of course, but most writers who have described connections between spirituality and science have started from the religious perspective. I came to my belief not through religious indoctrination but through my study and application of physics. I think the story of my journey may appeal to others like me – and I believe there are many such people. Throughout my life, conversations with friends, family members, and even strangers have turned into probing philosophical discussions when I've started talking about physics and Vedanta.

I wanted to share more of what I've learned, and to continue learning. I believed – still believe – that we can learn a great deal from the ancient experience on which the Vedanta philosophical system is based, a system that regards personal conscious awareness, not doctrine, as the basis for understanding the world.

Learning that Vedanta didn't conflict with modern science or reason, though, was only the beginning of my journey. It satisfied my intellect but left open the question of how to live my life. Only monastics could adhere to strict philosophical purity. I started down that road but then took a pause, realizing that – for the time, at least, I was not prepared to be a monastic.

I was a student, a baby boomer, an American schooled in Western thought and living in American society. Soon enough I was married and had a child and a job. This didn't require that I leave Vedanta behind; on the contrary, the traditions of Vedanta gave me a multitude of ways to live a life consistent with my beliefs. In work I could practice karma yoga – the yoga of action. In my relationships with family, friends I could practice bhakti, the yoga of devotion. I recognized models of spirituality in my father-in-law, a Roman Catholic, and in the Vedantist nuns at the Sri Sri Saradeswari Ashram, differing but equally striking versions both Western and Eastern.

In the following chapters, I share the wonder and abject confusion I felt as I confronted how Einstein and Quantum Theory upended my commonsense, Newtonian understanding of the universe. I discuss how learning about Vedanta and the insights of Swami Vivekananda gave me a point of reference for my own explorations – a mid-20th century scientifically minded Westerner seeking answers to questions of meaning, finding guidance in the efforts of a 19th century Indian mystic to confirm Eastern beliefs through Western science. I describe how the Vedantist cosmologist John Dobson helped me better discern common threads between Western physics and Eastern spirituality.

I have tried to put my thoughts together clearly, and consider what all I have learned could mean for those of us seeking to find or create meaningful ways to live our lives – ways that don't require suspension of intellectual curiosity, reason, and excitement about the discoveries of modern science.

Since early in the 20th century, modern science has been confounding and upending our understanding of the universe we see and experience. I think the implications of what modern science tells us are more momentous than the Copernican and Newtonian revolutions in science. But people don't appreciate these new revelations because, so far, most physicists and those who understand Quantum Theory have been hesitant to offer their opinions about how we get from the subatomic world and all the strangeness that goes on there to the world we think we experience day to day – which we think we understand pretty well and which seems to follow reasonable rules. I think it's time for people to grapple with the implications of modern science and follow them where they lead.

Over the decades, as I have talked to friends and family about my exploration of science and spirituality, I have seen flashes of excitement in their faces that remind me of my own when I first encountered the wonders of modern science and the profound spiritual insights of India. I have seen tears in the eyes of a friend who, like so many of us these days, felt estranged from both the world of science and the realm of religion. She seemed grateful to hear that there might be ways to close the gap between matters of intellect and reason and matters of the heart and feeling. What she and others found surprising was that my starting point had been as an electrical engineer, a die-hard skeptical agnostic. I had come to philosophy and spirituality, strangely enough, through my embrace of science, not in spite of it.

This shouldn't seem strange. Copernicus, Galileo, Newton, and the others who basically brought about the birth of science were all very religious. They didn't see a dichotomy

in this; they were convinced that science and religion go hand in hand – are really partners in the search for truth. It was the Church, the authorities – people in power who felt threatened – who created the science/religion split. Not the guys who came up with the new ideas. That's really important to keep in mind, because we're facing the same thing today.

I think that clever, creative people in science and in the arts and humanities – and even in applied fields like engineering – will understand that there is no dichotomy. We're all trying to touch what's underneath this day to day experience. But we're constrained by custom and fear of ridicule. At least in the scientific world, if you have a spiritual side, you have to keep that well away from those you work with, or you're going to find yourself having to explain yourself in ways you don't enjoy. And yet science itself, in the popular common sense, has become kind of a religion – "Scientism"[9]– which has its own rules, its own orthodoxy, its own limits, and which stands in the way of really free thinking. If one is a scientist, it's widely assumed that one is an atheist, or a quiet agnostic, and if one talks too much about phenomena that can't be readily subjected to experimental verification or rebuttal, one is likely to be looked at askance. One is likely to have trouble with tenure, grants, or lab space.[10]

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[9] "An exaggerated trust in the efficacy of the methods of natural *science* applied to all areas of investigation (as in philosophy, the social *sciences*, and the humanities)" – Merriam-Webster Online Dictionary.

[10] One physicist who has challenged this orthodoxy is Richard Muller, who in 2016 wrote: *"I do know I have a soul that goes beyond consciousness*

I think our ignorance of what both science and spiritual traditions like Vedanta teach us is dangerous. I think it's important that people understand that there's something very strange behind this universe we think we experience. Trying to explain it based on a belief that the universe as we observe it is "real" runs us into conflict with some really intractable issues. You simply cannot make sense of what the scientific observations actually show based on what we think we see, hear, and feel around us; the strangeness behind the universe doesn't yield to such methods.

We need to grapple with what Relativity and quantum physics tell us, but physics by itself – science by itself – doesn't allow us to do this. Quantum Theory, just as much as religion, points to something not easily accessible to human reason operating underneath our observable universe. Why do we misperceive that universe? What is that underlying something? Looking at these and other questions could, I think, get beyond the science-religion divide and take us toward a serious and rational conversation about where science and spirituality might intersect. I believe strongly that we need to access spiritual traditions like Advaita Vedanta in order to make sense of the universe.

In 2012, when I realized that my Stage 4 cancer diagnosis meant I would have limited time to continue my explorations, I decided to write my story. I'm thankful that my wife Judy and daughter Anna were willing and able to help. I hope my

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…I do pray every day, although I am not sure to whom" (Meller 2016: Now:The Physics of Time: 338).

experiences can help others resolve the question of how to reconcile our sophisticated modern scientific worldview with a spirituality that does not require us to suspend reason and logic or subscribe to "blind belief" in authority.

I think my point of view represents that of an ordinary educated and curious person. My perspective is that of a non-scientist, educated in science, who routinely employs the scientific method. It is that of an electrical engineer and a sometime private pilot who manipulates natural forces. It is also the perspective of an aspirant to Advaita Vedanta who seeks to understand spirituality and consciousness. My thinking and understanding have evolved over the years as I have come to know some remarkable people – skeptics as well as believers – and through a very special relationship with the Sri Sri Saradeswari Ashram, a convent for women in Kolkata founded by a revered contemporary of Swami Vivekananda.

Facing mortality has, I believe, given me greater clarity. I hope my story resonates with others who are not experts in either science or religious studies, but for whatever reason are not convinced that modern science and spirituality are irreconcilable.[11] I've tried to tell my story in a way that makes clear the reasoning and experience behind my belief that science in no way refutes the Vedantist certainty that there is a timeless, infinite consciousness behind the reality we think we experience. I believe that the existence of such consciousness is the simplest way to explain the existence of the universe; I wish such ideas were being more broadly and seriously considered.

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[11] See also Feldman 2013.

I intended to devote the latter part of my life to working through these issues, but my body gave out. My life ended before I could complete what I felt I was intended to do, and I couldn't be sure of picking up the thread next time around. So, with the help of Anna and Judy, who interviewed me on video and drafted a manuscript that I edited to the extent my failing body allowed, I have prepared this book, which Judy and Anna have edited and brought to publication. We've done this in order to share what I've learned with others who I know struggle with the seeming divide between science and spiritual belief. It's particularly intended as a gift to my next incarnation, who I hope will come to read it and, perhaps, pick up where my body forced me to leave off.

This is the story of my efforts, in the course of the life that "began" in 1952 and "ended" in 2015,[12] to make sense of the universe, and particularly to reconcile my strong commitment to science with my equally serious belief in Vedanta's teachings.

I am by no means the only one to have made such efforts, sought such reconciliation. Many others – physicists, other scientists, science writers, philosophers, artists, writers, experimentalists, religious and spiritual practitioners – have grappled with the same issues I have, or similar ones, from their own perspectives. My editors and I will pause at the end of each chapter to highlight some of the observations that others have made about that chapter's subjects. Judy and Anna will add their personal perspectives, as well.

[12] "Began" and "ended" may not really be meaningful concepts with reference to life and consciousness.

But this is first and foremost my story, recounted for the special benefit of my next incarnation or incarnations – who of course may or may not have any idea of their (your) connection with me until you find it, as I hope you will, in this book.

Notes on the Introduction

If you think you may be Neil's next incarnation, welcome to his – that is, to your – journey. If you don't think you're his next incarnation, welcome anyway; we – Judy, Anna, and editor Tom King – hope what he has to say will help you in your own efforts to understand what reality and the universe are all about. If you're new to Vedanta and quantum physics, you may want to read through Neil's complete story first, and then come back to the Endnotes for further exploration of his thinking.

Neil observed that the Advaita Vedanta philosophy and today's theoretical and experimental physics point in similar directions. Both suggest, in their own ways and with varying degrees of confidence:

- That what we experience as "matter" – stars, trees, rocks, animals, people – is energy;
- That energy is timeless;
- That the way energy organizes itself to create and operate the universe is somehow, mysteriously, related to consciousness;
- That – contrary to the arguments of atheism but without substantiating any particular religious dogma – this conscious, energetic universe may have a purpose; and
- That our work as both scientists and spiritual creatures is to explore and understand these realities and try to understand this purpose.

We carry out this work, according to Vedantist thinking, through all our incarnations, gaining insights from our ongoing experiences.

An incidental result of Neil's understanding is the frustration he felt with the idea that "science and spirituality are irreconcilable." This idea is actually a fairly new one in the history of human thought, but it seemed to dominate published and telegenic scientific and religious discourse during much of Neil's life. It continues to do so in the work of such "popular scientists" as Neil

DeGrasse Tyson and science-oriented philosophers like Daniel Dennett.

While editing this book, though, Judy has noted that the obituaries of many imminent twentieth century scientists testify to their spiritual beliefs, though few made much of them while alive. Judy's observation is echoed by physicist Richard A. Muller, who says flatly that "(s)ome people have the misimpression that all physicists are atheists, and it is worthwhile dispelling the notion." Muller goes on to cite a free e-book, 50 Nobel laureates and other great scientists who believe in God, compiled by Tihomir Dimitrov (nd).

Science and Judeo-Christian ideology were heavily intertwined until the early 19th century, and by no means were always antagonists. In the 20th century, Albert Einstein is quoted as saying things like: "(m)y religion consists of a humble admiration of the illimitable superior spirit who reveals himself in the slight details we are able to perceive with our frail and feeble minds. That deeply emotional conviction of the presence of a superior reasoning power which is revealed in the incomprehensible universe forms my idea of God" (Quoted in the New York Times April 19, 1955 obituary; Ravindra 2002:117).

Several of the founding 20th century quantum theorists acknowledged that their thinking seemed to mirror that of the ancient Indian sages. For example, Erwin Schrödinger wrote that in 1918 he discovered the Upanishads (the foundational literature of Hinduism) through his study of Schopenhauer (Schrödinger 1992:168), and cites them approvingly as a source for the notion that consciousness – which as Neil will discuss seems to many theorists to be intimately involved in subatomic quantum processes – reflects a "unification of minds… in fact, there is only one mind" (Schrödinger 1992:129; also see Berger 2004). Later in the century, quantum theorist David Bohm wrote of the "wholeness" that quantum physics suggests underlies what we perceive as reality. The "wholeness" concept,

he said, is a very ancient one that has survived "(i)n the East (especially in India)" (Bohm 1980:25).

Fritjof Capra's The Tao of Physics (Capra 2000 [1974]) is all about the relationships of physics and the eastern spiritual traditions, while Bruce Rosenblum's and Fred Kuttner's Quantum Enigma (2011) and David Kaiser's How the Hippies Saved Physics (2012) present similar points of view. Quantum pioneer Werner Heisenberg, in his 1962 Physics and Philosophy, posited that the difficulty western scientists (and others) have had in incorporating "Eastern" (e.g., Vedanta) concepts is grounded in a turning toward a "materialistic point of view in Greek philosophy" in the doctrine of Empedocles (ca.495-430 BC) (Heisenberg 1962:38). There is a considerable discussion of the early quantum theorists' views at www.krishnapath.org.[13]

Physician and medical researcher Robert Lanza, in two recent books (Lanza 2009, 2016) a website (http://www.robertlanza.com/), and several YouTube videos, has advanced the notion of "Biocentrism", in which, like Neil but with little reference to Eastern thinking, he emphasizes the role of consciousness in the construction of reality. Response to Lanza has been enthusiastic in some quarters, dismissive in others. Notable among the latter is the online critique offered by Yale neurologist and prominent proponent of the "skeptical movement," Steven Paul Novella.[14] Novella begins by saying that while Lanza "appears to be a legitimate and accomplished physician and stem cell researcher," he has erred by "venturing outside his area of expertise." By doing so, in Novella's view, he has sailed away into "the world of pseudoscience." We can easily imagine him lobbing a similar charge at Neil.

Of skeptics like Novella, and with reference to the question of "what is consciousness, and how, exactly, does it create reality if reality is not out there," Neil said:

[13]http://www.krishnapath.org/quantum-physics-came-from-the-vedas-schrödinger-einstein-and-tesla-were-all-vedantists/.

[14]http://www.skepticblog.org/2013/11/25/biocentrism/.

"There's a group whose magazine and general way of thinking I subscribe to: the skeptics (Neil subscribed to The Skeptical Inquirer[15]). They're always debunking the quacks and the UFO believers, and all that's great because we've got enough charlatanism to deal with. Every now and then, though, they delve into religion, and the religion they choose to look at from a skeptical standpoint is always dualistic, so to me they've set up a straw man.

"Now, they can be forgiven; they probably don't know this (Eastern) philosophy, but they should know it, and it should be what the debate is about, because it's the only thing that can lend itself to answering the questions or the concerns or the objections of true skeptics. It's very easy to poke holes in the idea that there's a dualistic God separate from us. It's impossible to make dualism work."

As Neil's editors, we think it important to be clear that in this book Neil is not trying like Lanza to propound a new theory explaining the universe. Like Lanza, though, he recognized a number of issues that are poorly accounted for by contemporary physics, and he viewed consciousness as a key factor to be addressed. Unlike Lanza, and Novella, and many other western science commentators and reality theorists, Neil felt that the scientific method, and indeed reason, could "take you (only) so far," and that there was something beyond that point. Richard Muller seems to allow for this sort of thinking when he says that "(i)t is not logical to deny observations just because they cannot be measured" (Muller 2016:338).

Neil, as we will see, believed that other means of accessing reality – notably those of Vedanta but other spiritual traditions and practices as well – are worthy of respectful consideration and careful study. Wise women and men have employed such traditions and practices through ages, over millennia – since long before the development of a formal scientific method and

[15]See https://magazine-order.com/skeptical-inquirer.html?adt=308818&kw=skeptical%20inquirer%20magazine.

creation of the academic institutions in which Lanza and Novella both find employment – in search of meaning and truth. Neil did not regard their efforts to have been a waste of time.

1

Discovering Einstein, Questioning Reality: The Beginnings of My Journey

We've arranged a civilization in which most crucial elements profoundly depend on science and technology. We have also arranged things so that almost no one understands science and technology. This is a prescription for disaster. We might get away with it for a while, but sooner or later this combustible mixture of ignorance and power is going to blow up in our faces.

–Carl Sagan, The Demon-Haunted World, 1996

To My Next Incarnation

I came to my ways of thinking about reality from a basis in science, not religion. In this chapter I'll talk about how I got started – the remarkable insights I gained by reading 20th-century physics and the questions I found myself asking about the nature of the universe. Maybe you've already developed these insights and begun asking these questions. If so, learning how I stumbled through them may be helpful to you in resolving uncertainties. If you've not already gotten immersed in scientific thinking, this chapter is my invitation for you to begin.

Beginnings

I grew up in a large secular Jewish family on Long Island. Ours was a world of common sense that effectively treated the religion of our ancestors – and all religions – as irrelevant mythology. I took science for granted. It colored my view of the world around me, which I accepted as objective reality. I wasn't completely atheistic, but I was comfortable being agnostic. I understood that science couldn't explain or deal with religious questions. It was not designed to do that.

My entrée to doing science was through radio. When I was eight, in 1960, I became enthralled with my cousin Barbara's Gründig short wave radio. I could turn its dial and pick up not only transmissions from far away countries but also unexpected transmissions in-between – from aircraft and ships and distant outposts of exploration. Even more magical was discovering my parents' 1950s-era DuMont television set, a remarkable device that had a radio-style dial instead of a modern TV channel selector. Rotating its dial, I could not only watch local television stations but also listen in to New York's LaGuardia airport Control Tower, music of all kinds from classical to country, and the banter of amateur radio operators talking about technology or any subject, all on the same device. I felt tuned in on a mysterious and powerful force connecting the world.[16]

[16] My wife Judy reminds me of how she learned of my obsession. One evening after we first met, we watched Elvira, Mistress of the Dark on my black and white TV, after which I showed her how I could manipulate the TV dials and antenna to pick up transmissions from faraway cities usually

But what was this force? What was the electricity that made the radio operate? What was the electromagnetism that formed waves that carried radio signals? I began to ponder these questions, which led me to wonder about the other mysterious forces that we take for granted – gravity and inertia.

At age eleven, I qualified for my first Amateur Radio license. One day I carried on a conversation about signal strength with an amateur in the Middle East. He turned out to be Crown Prince of Jordan – the future King Hussein. My "Ham Radio Shack" connected a shy introvert (me) with a wide world of passionate amateur radio buffs communicating in Morse code and audio at all hours of the day and night. At summer camp, after mastering the Morse code in order to upgrade my license, I became the camp amateur radio counselor. Later, in college, I ran the university FM radio station as its General Manager. These hands-on experiments with electromagnetic radiation were the beginning of a life-long fascination with its practical applications in daily life.

I took it for granted that science and religion were incompatible. I classified Judaism and all religions as mere "social things." I reluctantly agreed to have my Bar Mitzvah at age thirteen but drew my line in the sand; I would never visit a temple ever again. Like many scientists and technicians then and now, I dismissed religion as irrelevant at best, or even as anathema. The Judeo-Christian traditions, with their belief in dualistic concepts of God, time, sin, and heaven and hell, were, to my mind, irrational and illogical, the major causes of strife, suffering, and war. At best, they were not worth my time.

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inaccessible via television, taking advantage of the rare electromagnetic effects during a period of sunspots. She married me anyhow.

Relativity as Epiphany

Learning about radio science, I could hardly have avoided immersing myself in the work of Albert Einstein, Nicola Tesla, and other pioneer students of electromagnetic forces. Reading and pondering Einstein when I was about seventeen shook my rational, scientific, agnostic self to its core. This led me to an epiphany.

Einstein's discoveries, and the equations with which he expressed them, showed that Classical physics fundamentally misinterpreted the true nature of the universe and, by extension, of our place in it. The physics of Copernicus, Galileo, Kepler, and Newton had given us an understanding about the nature of the universe that both expressed and came to shape our "world view" – especially the world view of those who, like me, had no use for religious interpretations of reality. The world – the universe and those mysterious forces of gravity, inertia, and electromagnetism – was "out there," comprising objects and interactions that could be studied through the application of our brains and minds which were "in here." But Einstein upended Newtonian principles – and hence the reliability of our commonsense experience.

Einstein's theories of relativity, and the quantum physics that came to be built on them, demonstrated to me that our whole impression of reality is a kind of apparition. In the words of Einstein himself, it's "a kind of optical delusion of … consciousness."[17] They show, in short, that what we perceive

[17] "A human being is part of a whole, called by us the 'Universe,' a part limited in time and space. He experiences himself, his thoughts and

to be "out there" in the universe is not distinct from "in here" in our consciousness. They raised the question in my mind: is there really an "out there" at all? I found this deeply unsettling.

The equations also show, among other things, that matter and energy are really the same thing. What we understand to be matter – making up stars, planets, people – is really a special form of energy. This idea, too, I found shocking, extraordinary.

And yet, I couldn't deny them. Einstein's equations, and those of the quantum physicists, were mathematically consistent and had been experimentally validated many times over. I had to accept them as correct. I had to trust them above anything else – even though they did violence to my commonsense perception of reality.

Science in Our Lives

A vivid experience years later reinforced my faith in validated equations. I was learning to pilot an airplane, and was on a training flight with Dale, my instructor. Looking down from 5,000 feet onto rooftops shimmering in the Texas sun, the loud buzzing of an engine in my ears, I was unknowingly about to test my faith in science. A clean, billowing cloud was straight ahead. As I flew into it, everything became blindingly white. I

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feelings, as something separated from the rest—a kind of optical delusion of his consciousness. This delusion is a kind of prison for us, restricting us to our personal desires and to affection for a few persons nearest us. Our task must be to free ourselves from this prison by widening our circles of compassion to embrace all living creatures and the whole of nature in its beauty." Albert Einstein's letter to Robert S. Marcus, February 12, 1950, upon the death of Marcus's son.

felt myself sinking down into my seat, then lifting. Was the plane drifting upward? Falling? I could hear the engine humming but was it sending me spiraling to certain death?

"Watch the instruments!" Dale barked. I did. Altimeter, steady. Artificial horizon, stable. Airspeed constant, slip/skid indicator centered. All products of science, mathematics, engineering, all designed carefully, following well-tested design protocols, but all designed and built by people who were not there where Dale and I were, not risking their lives.

I was learning a basic rule of "flying blind" – without a reference to the horizon: You must trust your instruments or you could kill yourself in a matter of minutes. Everything was as it should be, yet my senses, my mind felt as though the plane was out of control.

Following Dale's direction, I put aside my disorientation and panic and placed my faith in science and the technology it creates. Soon we had passed through the cloud, I could see the world around and below me; see that we were on a smooth course at a proper altitude.

If I had followed my "common sense" (my "seat of my pants" perception) in the cloud, Dale and I could have perished. If a pilot loses sight of the horizon by flying into a fog bank or a cloud or because it's dark at night, and he trusts his guts to keep the plane level, he will kill himself in about 30 seconds. He will put the plane into what's called a dead man's spiral, thinking all the time that the plane is perfectly level when in fact it's banked slightly. The plane will continue to spiral into the ground. It's a well-known phenomenon; it's very likely what happened to Robert Kennedy Jr. before he crashed.

A pilot must learn not to trust common sense; it's necessary instead to trust the instruments.

So if I had to trust Einstein's equations, and if they meant what it seemed to me they meant – that the commonsense, in-here/out-there world I saw, heard, felt and tasted was, in a sense, an illusion or apparition – did this mean that there was some truth, some reality, some "God" or other higher being, behind the beliefs of Judaism and other religions that my parents and I had so thoroughly rejected? I was now powerfully driven to learn what this sort of undiscovered truth, defying common sense, might mean to my life.

Let's go into a little more detail about the science that so seized my imagination in my youth. At that time, in the 1950s and early 60s, it was still possible to take machines and electrical devices apart and see their inner workings. People could tinker with their cars and fix their toasters. Sometimes we failed and ended up with hundreds of worthless disassembled parts. But usually we succeeded – and were satisfied at having taken on a "science project" and made it work on our own.

Three decades later, when Carl Sagan issued his warning about our ignorance of science, many electrical devices and electronics were still connected to older technologies. That's no longer so. We all have our cell phones, microwave ovens, digital TVs, and GPS to guide us as we drive through an unfamiliar city. Most of us don't know how they work and wouldn't dream of taking them apart and trying to fix them if they stop working. Even if we wanted to fix our broken devices, their computer-driven technology won't let us. These conveniences may have made our lives easier, but they have

fundamentally separated us from the science and technology that made them possible. No longer can we "tinker" and discover.

Most of us are also not aware that Einstein's equations actually made these devices possible – and few may think it's something we need to know or care about. Still less do most of us understand the equations, and those derived from them. But we need to understand something about those equations – not necessarily to be able to solve them (most have been solved, after all), but to understand what they mean to our lives, to our places in the universe, to our destinies.

In fact, Einstein's discoveries and writings in 1905 and thereafter upended "classical" or Newtonian physics, and the world has not been the same since. No one practicing today uses classical physics except as a useful approximation where relatively large phenomena are involved. To understand why this is so, let's consider some history.

Physics at the Turn of the 20th Century

By the late 19th century, physicists thought they had all of physics figured out. Their view was what we would call, for lack of a better term, the "common sense" notion of how we experience and understand the universe: The universe was understood to be made up of four separate components – energy, mass, time, and space. These phenomena were considered totally separate, not connected.

It was also understood that the universe was pretty much like a big machine or ultra-sophisticated engine. In theory, if you knew enough about the particles that make up the

universe, along with their positions and momentum, you could explain virtually everything.

Back then, physicists believed in the three conservation laws:

- *Conservation of Matter* (you can't create it; you can't destroy it; you can only change its state);
- *Conservation of Energy* (same as above); and
- *Conservation of Linear and Angular Momentum* (a body retains its momentum unless acted upon by an external agent).

These concepts had been worked out starting in the time of the ancient Greeks. They had been greatly refined by Isaac Newton and those who followed him in the 17th and 18th centuries. In the late 19th century they were working well – except for one newly discovered major anomaly.

The Rise and Fall of the Luminiferous Aether

Visible light was understood to be a form of electromagnetic radiation, and since it is fundamental to our existence (without it we couldn't see, and plants couldn't photosynthesize), it was important to figure out how it worked. Light was understood to be a wave, behaving in much the same way as a wave on the ocean, or a sound wave striking our ears. Invisible forms of electromagnetic radiation – ultraviolet and infrared radiation – had been discovered in the late 18th century by Sir William Herschel and found to behave in the same wavy ways as did visible light. In 1864, Sir James Clerk Maxwell predicted the existence of radio waves – another form of electromagnetic radiation – and in the 1880s Heinrich Hertz was able to generate and measure them.

The question that troubled physicists was this: if electromagnetic radiation like light forms waves, what is the medium in which radiation is waving? In layman's terms, what was it waving through to get from point A to point B? When you talk to someone, your vocal cords set up waves of sound that "wave" through the medium of the air. The medium can just as easily be water, or helium, in which case you make silly sounds. In all cases there is a medium that "waves" – that is, forms waves – in order for energy to propagate – that is, to travel. But electromagnetic propagation does not appear to follow this rule. In a set of elegant equations, Maxwell showed that electromagnetic radiation has unique qualities and needs. Its unique quality is that it can propagate in a vacuum – in the absence of any observable, measurable medium. But surely something must be "waving," so it was thought that there was some sort of invisible medium through which electromagnetic radiation was transmitted – some medium that we can't see, feel, or touch, but that permeates everything, everywhere.

Classical physicists called this hypothetical medium the "luminiferous ether" or "aether." A search began to find it and investigate it. All sorts of experiments were performed because it seemed so essential to understanding electromagnetic propagation. Finally, in 1887, in series of experiments conducted on the Metro railroad tracks in Cleveland (by two professors, Albert Michelson and Edward Morley, of my alma mater, Case Western Reserve), it was conclusively shown that there actually was no evidence of the aether.[18] This created a

[18] Since the aether was understood to be stationary, it was assumed that the Earth's passage through it en route around the sun would create an "aether wind." Michelson's and Morley's experiments, carefully carried

serious problem. There had to be a medium in which light and other types of electromagnetic radiation formed waves, and yet there didn't seem to be one. Here was a major contradiction in physics that needed to be explained.

Einstein's Solution

It was Einstein who found the solution to this quandary. In 1905, his "miracle year," Einstein published five papers on different topics, one of which solved the electromagnetic wave problem. What Einstein said (and this was completely radical) was that explaining electromagnetic wave propagation was really a problem of geometry, not a problem of finding an invisible medium. He said our geometric approach to measuring the distance between two events seen in space and time was wrong. If we fixed our geometry, there actually would be no need for a medium like the aether. The correction he proposed, set forth in elegant equations, involved accounting for time in the relationship between events (like the transmission and reception of an electromagnetic wave). Time and space, he showed, were aspects of the same reality, and highly dependent on the perspective of the person or instrument that perceives them.

Einstein convincingly demonstrated that his approach made sense and solved the problem of electromagnetic radiation without the need for the luminiferous aether. In an appendix published a few months later, he showed that based

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out on equipment set up in the Metro tunnel, demonstrated that there was no such wind, and therefore did not disclose any aether. None has been found since then, of course.

on his new geometry energy (E) equaled mass (m). Energy, in other words, was the same thing as mass.[19]

In essence, in 1905, due to Einstein's revolutionary insights, Classical physics became all but obsolete – although it would take more than a decade for this fact to be widely appreciated. Newtonian physics – the whole scientific understanding of the universe built on the thinking of Isaac Newton in the 17th century – was upended. Out the window with it went our comforting sense that what we see, feel, and hear is "real," "actual," and external to ourselves. Time and space were now understood to be intimately linked as "spacetime," whose shape depends on one's perspective.

For me, learning that what is real is outside the realm of what I experience with my reason and my senses was troubling enough. But Einstein's further discoveries about time shattered any remaining illusions of a world "out there."

Einstein's equations were embedded in what is known today as his Theory of Special Relativity – "Special" because it was limited to an analysis of electromagnetic propagation. Einstein later applied the same ideas to gravity, developing what is known as the General Theory of Relativity. In a famous prediction he said that General Relativity theory could be tested during a total solar eclipse. The Theory held that light from a star shining "behind" the Sun (as seen from Earth)

[19] As the science writer Tony Rothman put it in the August 24, 2015 issue of *Scientific American*: "The equation's message is that the mass of a system measures its energy content. Yet $E = mc^2$ tells us something even more fundamental. If we think of *c*, the speed of light, as one light year per year, the conversion factor *c2* equals 1. That leaves us with $E = m$. Energy and mass are the same."

would be bent by the Sun's gravity and hence appear to an observer on Earth to be in a location different from the one it occupied when the Sun was not in front of it. Of course, one can't see such distortion when the Sun is shining, but during a total eclipse it should be visible. Expeditions were planned to prove or disprove the theory through eclipse observation, but World War I got in the way. It wasn't until 1919 that Sir Arthur Eddington of Great Britain, observing a total eclipse, provided what was considered definitive proof that Einstein was right. Eddington's team observed a star known to be behind the Sun, which appeared to be precisely where Einstein predicted it would appear to be. That's when Einstein began to be taken quite seriously. If his light-bending prediction was correct, it followed that his theories were valid in general, which demolished the foundations of classical Newtonian physics.

Classical physics assumed an objective world "out there," but Einstein's theories and the experiments of Eddington and others showed that the world we observe can look radically different depending on the relative positions of the observer and what's observed. They showed that classical physics could serve only as an approximation of reality, good enough for practical day-to-day purposes, but untrue at the base of reality. Energy and mass must be understood to be the same. Time and space are similarly related; the equations say that they are equal but opposite.

So now we no longer have four separate entities – space, time, mass, energy. Instead, we have "space-time" and "energy-mass." Einstein's discoveries described a world that is very different from that described by the Classical physics of the late 1800s – and hence from common sense even today.

While Einstein was working on his Theory of General Relativity, another paper he published in 1905 – on the Photoelectric Effect (for which he received the Nobel Prize in 1921) led Niels Bohr and others to develop Quantum Theory. In his Photoelectric paper, Einstein showed that light (electromagnetic radiation) comprises particles made up of discrete packets which have come to be called "Quanta."[20] An individual packet is referred to as a "quantum," and understanding quantum phenomena is the goal of Quantum Theory.

The Quantum Complication

I hope you will stay with me despite these terrifying words "Quantum" and "Theory." You don't have to understand this part – even the theory's discoverers were flummoxed by it – to marvel at the implications if we take it seriously: Our commonsense view of the world must go the way of the dinosaurs.

To gain insight into the bizarre world of Quantum Theory, it's helpful to revisit the 17th century, with Sir Isaac Newton and Christiaan Huygens. Newton postulated that light was made up of discrete particles he called "corpuscles." But Huygens argued that light consists of waves, not particles. The matter remained unresolved until 1801, when Thomas Young performed what is referred to as the "Double-Slit experiment" and propounded a Wave Theory of Light to explain his observations. Young observed that waves of light passing simultaneously through two slits in an impervious screen

[20] Quanta of light energy are also called "photons."

interfered with themselves and created distinctive patterns observable on a target screen. In 1873, James Clerk Maxwell suggested that light was an electromagnetic wave whose speed could be measured with respect to the luminiferous aether.

But then Michelson and Moreley found that there was no aether, and Einstein showed that it wasn't needed. He also showed that electromagnetic radiation is made up of massless particles – now known as "photons."

Einstein's deduction that light – while it behaved as a Maxwellian wave – was actually made up of mass-free particles was an inspiration to other physicists like Niels Bohr, who had been working with other phenomena, like electrons, that exhibited quantum characteristics. The period from 1905 up until Nazism began tearing Europe apart in the 1930s was one of wide-ranging debate, computation, and experimentation by people like Bohr, Werner Heisenberg, Wolfgang Pauli, and Erwin Schödinger, leading to the development of Quantum Theory.

The quantum theorists and experimenters discovered that although electromagnetic phenomena (e.g. light) were made up of particles, they also did form – or behave like – waves. This came to be referred to as "wave-particle (or particle-wave) duality." Light photons (which have no mass), electrons (which have a small mass), and atoms (the building blocks of matter) – <u>all</u> exhibit particle/wave duality. Moreover, multiple experiments demonstrated that waves – or what came to be called an entity's "wavefunction" – collapsed into particles only upon being observed. This weird characteristic of subatomic particles has come to be referred to as the <u>"observer effect."</u> What it means is that <u>everything is a wave of</u>

energy until it is observed, whereupon the wavefunction collapses and it resolves into particles. As Einstein's most famous equation summarized: matter is energy – and what form it takes depends in some way, somehow, on whether it is being observed.

This is the basis and mystery of Quantum Theory. Richard Feynman said: "This particle/wave duality…is impossible, absolutely impossible to explain in any classical way…it has the heart of quantum mechanics. In reality, it contains the only mystery."[21]

Another weird quality of Quantum Theory is that it reveals "nonlocality" – that particles separated by great distances (in theory even by many light years) can influence one another instantaneously, despite the "speed limit" theoretically represented by the speed of light. Quantum physicists refer to such particles as "entangled," and experiments have shown that if one is changed somehow, the other will instantly experience a comparable change even though the particles may be miles or, in theory, light years apart. Ironically, Newton believed in what he called "action at a distance" – that is, that each piece of matter exercised an influence over every other piece of matter, no matter how distant. Einstein's equations had seemingly banished this notion, replacing it with the idea that electromagnetic and gravitational fields, operating at or below the speed of light, accounted for the influence of one piece of matter on another. Quantum Theory put instantaneous action at a distance back on the table.

[21] Feynman 2011 Chapter 1:1.

Upon learning about Quantum Theory at the age of eighteen, I wondered, How can this mind-blowing view of the universe be correct? If correct, why aren't scientists shouting out to the world that Copernicus is dead, that we are entering a whole new world of discovery, that exciting new possibilities were opening up for science and technology – and for our understanding of human experience and meaning? In fact, science was already moving ahead to harness the implications of Quantum Theory while the great majority of people had little understanding of what these discoveries actually revealed. And although Quantum Theory is mind-blowing, it has been severely tested for over 80 years, and continues to hold up. The original theory was the product of the scientific method, carefully applied. Atomic phenomena were observed or otherwise measured. Hypotheses were generated to account for them and tested both mathematically and against experimental data. The resulting conclusions served as the basis for designing everything from hydrogen bombs to cellphones and were further tested through application. No prediction by the Theory has ever been shown to be wrong.

But the enigmas remain: why do entangled particles appear to influence one another instantaneously regardless of distance, and why does it appear that the observation of a physical phenomenon influences its very Nature?

Quantum Theory was developed with reference to atomic and subatomic phenomena – atoms, protons, electrons, positrons, photons. Of course, we don't consciously experience such phenomena in daily life, but they make up everything larger – protozoa, people, planets – as well as the light that allows us to see them. And Quantum Theory works

fine for all practical purposes despite its strange enigmas; it enables us to build spacecraft and cellphones and microwave ovens and make them work. However:

> "(I)f you take Quantum Theory seriously *beyond* practical purposes, it has baffling implications. It tells us that physics' encounter with consciousness, *demonstrated* for the small, applies to everything. And that "everything" can include the entire universe. Copernicus dethroned humanity from the cosmic center. Does Quantum Theory suggest that, in some mysterious sense, we *are* a cosmic center?"[22]

Chapter 1 Endnotes

On Einstein: Many – including, of course, the man himself – have written about how Einstein's Special and General Theories of Relativity upended the world of Newtonian physics, and Neil himself has much more to say about this in subsequent chapters. An accessible introduction that puts Einstein's accomplishments in historical context is God's Equation: Einstein, Relativity, and the Expanding Universe, by Amir D. Aczel.[23] In 1983 Werner Heisenberg, an associate and near-contemporary of Einstein's, published a series of essays[24] that are helpful in understanding Neil's unquestioning acceptance of the equations as "correct." In a nutshell: the equations that make up the Relativity theories make inevitable sense

[22] Rosenblum and Kuttner 2011:201.

[23] Aczel 1999.

[24] Heisenberg 1983. See especially the introductory essay on "Traditions in Science," pp. 1-18.

mathematically and have repeatedly been verified experimentally. In the worldview of physics and other sciences, such mathematical logic and verification bring us as close as possible to truth.

In a PowerPoint presentation he prepared for friends and family, Neil explained that in response to the Michelson/Morley experiment, George Fitzgerald and Hendrik Lorentz proposed – using a model developed by Joseph Larmor – that the length of objects contracts as they move through space, thus masking their interaction with the luminiferous aether. Einstein demonstrated that length contraction need have nothing to do with the aether – that it was "not of kinetic, but kinematic origin."[25]

Kinetic, according to Merriam-Webster Online, means "of or relating to the motion of material bodies and the forces and energy associated therewith." "Kinematic" according to the same source, relates to "aspects of motion apart from considerations of mass and force." So, Neil apparently understood Einstein to have demonstrated that length contraction occurs without reference to any mass or force –such as the aether.

What does length contraction have to do with "fixing our geometry?" And how does it account for the transmission of electromagnetic waves without a medium in which they can "wave?" Well, recalling one of Einstein's most famous thought experiments, imagine that you're running next to an electromagnetic wave, both of you traveling at the speed of light. You look at the wave and see it frozen in space, and if it can do so, it sees you in the same condition. According to Relativity theory, time isn't

[25] Neil titled his PowerPoint presentation "An Examination of Einstein's Theories and Beyond: The Physics Behind the Illusion."

passing for either you or the light wave, though from the perspective of anyone else, you're both zipping along. The light wave has been traveling at the speed of light (in a vacuum) since it started its journey, but from its perspective it hasn't moved at all; from its perspective there is no space between its transmitter and its receiver. If you're that electromagnetic wave, from your perspective there's really no space within which to move. So, from your perspective, you reach a receiver instantaneously, and there's nothing actually between whatever transmits you and whatever receives you; there's nothing to wave. From our perspective, standing outside, there's space between the transmitter and the receiver, but from your perspective there's not, and it's your perspective that matters.

Aczel, in God's Equation, provides a detailed account of the double expeditions in 1919 (one to Brazil, the other to an island off Africa) coordinated by Eddington to test Einstein's predictions. Ironically, Einstein was not even informed that the expeditions were undertaken; he learned the results – to his great elation – only afterwards and found himself a worldwide celebrity.

On Rosenblum's and Kuttner's Statement that "there is no physical reality to any property until it is observed"[26]: Your commonsense reaction to a statement like this may be to say: "That's absurd! I can see that building, that tree, that planet, that person; of course they're real!" But of course, you are observing them even as you insist that they would be there if you didn't. And in the days of Copernicus, the commonsense belief was that the sun "rose" and "set" and traveled across the sky over a stationary Earth, but that didn't make the conclusions of the early scientists wrong.

[26] Rosenblum & Kuttner 2006: 134.

When it became inescapably clear that they were not wrong, it upended commonsense thinking and required that humanity develop new ways to understand the universe.

Still, if you're uncomfortable with the idea that reality is dependent on observation, you're not in bad company. As Neil mentions, Einstein himself expressed great discomfort with the idea that reality doesn't exist if it's not observed.[27]

So, does what we see, hear, and smell around us really exist, or is it an illusion? Or something else for which we don't have easy words? That, of course, is the mystery that troubled Neil. It troubled a lot of the early quantum theorists, too; Bohr, Heisenberg, Schrödinger, and others wrote about it in the early and mid-twentieth century. But for the most part, physicists and engineers – in reaction to, or in fear of, what pondering such a fundamental question could mean – set aside such "philosophical" issues and focused on what they could do with their equations. The results – for all practical purposes – were spectacular.

Theoretical physicists have continued to ponder the mystery, however, and in the latter part of the twentieth century it became increasingly feasible to probe it experimentally. Anil Ananthaswamy's 2018 book, Through Two Doors at Once, provides an up-to-date discussion (as of 2018) of contemporary thinking and experimentation on the subject.

[27] See Musser 2015 for a detailed account of Einstein's discontent with Quantum Theory and how this discontent has evolved over the decades.

2

Discovering Advaita Vedanta

To My Next Incarnation

Science has been one of the pillars on which my thinking about reality has been built. The other has been Advaita Vedanta. This chapter is about how Vedanta came into my life.

It's hard for me to imagine that you won't need a spiritual guide like the one Vedanta philosophy provided me, to help you find answers to the questions that science poses. But I don't intend this chapter to limit you in any way. Vedanta itself says that there are many ways to seek and discover the truth, including through any of the many religions. Discovering Vedanta was tremendously important to me, though, and I hope that learning about it will help you on your way as well.

The Bookstore and Beyond

Despite the conflicts that Einstein's equations stirred up in my mind, to this day I can't fully explain how I was steered on to another course of interest, seemingly unrelated to science. During my senior year in high school, I went into a bookstore one day to buy a birthday gift for a friend and found myself drawn to the psychology and religion section. I started grabbing books on human consciousness, psychology, religion, and mythology. The subject matter of these books was sometimes topical and urgent. This was in the late 1960s, after all, when the Vietnam War, the struggle for civil rights and women's rights, and an overall disillusionment with traditional religious and authority figures reverberated through society. Many of the books I discovered focused on the nature of consciousness, or on altered states of consciousness.

I soon became convinced that understanding consciousness was necessary to understanding the world in a rational, scientific manner. But although my readings in philosophy, psychology, and religion began to open my mind to other realms of thinking, I wasn't sure where to find reliable enlightenment on what consciousness is and how it interacts with matter and energy – with those mysterious forces of electromagnetism, inertia, and gravity.

Entering college in 1970, I retained my scientific focus, and looked to philosophy for answers to my questions about the meaning of Einstein's insights. I was fascinated by electricity and was looking toward a career in electrical engineering, but I wanted to understand not only how electricity worked, but why. Why did electromagnetism exist and take the form it

does? And what about those other big forces in the universe? What about gravity, and what about inertia? What were they, and more importantly, why were they?

During my freshman college orientation meeting I told my advisor that I wanted to pair my Electrical Engineering major with philosophy, psychology, and religion. He scoffed. He felt that engineering was a single-minded pursuit by a proud fraternity (almost all male) of rational, practical, technology guys. Or, as the joke went, social misfits in white socks and pocket protectors. When I explained that what I really wanted was to understand why gravity, electricity, and inertia were the basic building blocks of the universe, he was incredulous. "We don't ask why," he thundered. "We start with those as givens and go from there."

I quickly learned that my scientific heroes – such as Tesla and Einstein – were valued for their contributions to science but not so much for the "why" questions they had asked, or the mysteries they had unearthed to puzzle us – like those of electricity, gravity, and inertia. Nor were they valued for their challenging insights into human life and moral values. The philosophy department showed almost no interest in exploring modern science. Even though Case Western Reserve University had been created from a marriage of an engineering school with a liberal arts college, the campuses and students remained separate. If I was going to pursue my "why" questions and my curiosity about consciousness, I realized I'd have to find other paths outside of the traditional college curriculum.

I plunged into a rigorous curriculum of math, biochemistry, physics, and engineering for my Bachelor of

Science degree in Electrical Engineering. But though my professors had made the whole idea of contemplating philosophical questions seem almost absurd, as I think back on those days, I remember that my friends and I didn't agree. We all studied various philosophers and we had late night discussions, usually peppered with an assortment of drugs to help the thinking process along. I was pretty conservative myself; I smoked a little pot, without much effect, but never took LSD or any other of the more potent drugs that were available in the student community. And I stayed focused in class on my science, math, and engineering.

But toward the end of my first semester, I was able to squeeze a class on Indian philosophy into my schedule. This class introduced me to the ancient philosophy called Vedanta, and specifically to Advaita Vedanta.

Advaita Vedanta

In what little extra-curricular time I had, and to inform my discussions with other students, I had been reading about the various western religious traditions. I found them unsatisfying, grounded as they are in the Judeo-Christian concepts of God, Original Sin, and an afterlife, and demanding unquestioning belief in a supernatural authority and/or ancient sacred texts. Vedanta is grounded in ancient texts that are of quite a different sort – the Upanishads discuss meditation, philosophy, and spiritual knowledge based on the experiences of ancient sages but accessible to anyone. It introduced me to ideas that re-focused my mind on precisely the intersection of science and meaning that I had been seeking.

One of several schools of Vedanta, Advaita posits a concept of God as One, a Oneness that comprises the universe, with life as Spirit unified with the Oneness. The Sanskrit word Advaita in fact means "not-two," or "one without a second." This concept of the unity of individual and universal spirit, to me, rose above the dualistic, materialistic view of reality espoused by the Judeo-Christian world of the twentieth century.

I wasn't alone in being attracted to Vedanta. Many famous thinkers have embraced it or at least given it high respect – Aldous Huxley, for example, and Joseph Campbell, and also the historian Gerald Heard and the writer Christopher Isherwood. Many others have taken it seriously and found enlightenment in it, notably such early quantum theorists as Niels Bohr and Erwin Schrödinger. These scientific thinkers – back in the days when Quantum Theory was first being developed – found aspects of Vedanta that helped them make sense of what Quantum Theory suggested about the real nature of the universe.

Swami Vivekananda

The Advaita Vedanta philosophy to which I was introduced, though based on thousands of years of tradition, was the one articulated by a relatively modern Western-educated Vedanta mystic and "realized soul,"[28] Swami Vivekananda. At the end of

[28] A "realized soul" is an individual who has come to understand the true reality, and one's own relationship to it, usually through intense meditation and practice of one or more of the four yogas. Various discussions of "self-realization" (e.g. https://en.wikipedia.org/wiki/Self-

the 19th century, Swami Vivekananda toured America, advocating a coming together of science and religion, reason and spirituality. The Vedanta that he preached was grounded in the core concept of "non-dualism" – that "God" is not somewhere above, but in us, and of us. God, he believed, was "the sum total of all souls."[29] And this God, in and of us all, was the reality behind what both Hinduism and Buddhism insist is the apparent world that surrounds us. Vivekananda's Advaita Vedanta allowed for doing away with many of the trappings of traditional Hindu spiritual practice that include a multitude of gods and demons, incense and flowers, and sacred animals. Though it honored them all, it used them metaphorically. Vivekananda thought Advaita Vedanta particularly well suited to Americans whose civic religion embraced notions of equality, freedom, and reason.

By the time I encountered Vivekananda's writings, at the very end of my freshman year of college, I had been introduced to Quantum Physics and Quantum Mechanics through my classes at Case. As I've said, following hard as it did on my exposure to Einstein's Relativity, learning about Quantum Theory shattered my faith in my commonsense experience of the universe. At the same time, I was taking an Introduction to Indian Philosophy course. Curious about the ancient spiritual traditions associated with developing higher consciousness, I was also experimenting on my own with meditation, keeping my practice secret from everyone.

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realization#Advaita_Vedanta) present the idea in detail. Vivekananda's self-realization came about through meditation under the direction of his master, Sri Ramakrishna.

[29] See for instance Vivekananda 1953:179.

Towards the end of that semester, a guest speaker, an Indian monk, gave a free lecture on Vedanta. He was Swami Bhashyananda, the Head of the Vivekananda Vedanta Society of Chicago – one of the Vedanta centers established in response to Vivekananda's late 19th century mission to America.

After his lecture, I went up to ask Swami a question. To my surprise, he pointed at me and said, "I don't answer any of your questions here. Come see me tomorrow at this address (a nearby devotee's home) to ask your questions."

With final exams looming in Physics, Chemistry, and Calculus, I tried to beg off. But he insisted, and I went.

When I arrived the next day at the devotee's home, the swami looked me in the eye and said, "You must immediately stop what you're doing on your own. You are putting yourself in danger without having a proper guide." I was stunned that he knew what I was doing in secret.

Swami Bhashyananda then told me that if I wanted to learn more about Vedanta – and the proper practice of meditation – I should read the lectures and writings of Swami Vivekananda. I did, and I felt a thrill at reading Vivekananda's words.[30] Speaking to Americans in his address to the 1893 World's Parliament of Religions in Chicago, and during his travels across the United States, Vivekananda spoke of the Oneness of the universe; of our misperception of it; and of Pure Consciousness as the eternal Spirit behind all our sensory perceptions. He said many of the things I was thinking, based on my reading of Einstein and quantum physics. He said these

[30] Neil had an extensive library of Vivekananda's works, and of commentaries on them. For a good sample, see Sen 2006.

things a full decade before Einstein developed his equations, and the source of Vivekananda's wisdom was over 4,000 years old, recorded in ancient Hindu sacred scriptures.

For me as a college student, learning about Vivekananda's insights was earth-shaking. I was so inspired by the boldness of his conception that at the end of my sophomore year I left the university to live at the Chicago Center under the spiritual guidance of Swami Bhashyananda, in the company of several mostly college-aged Americans, all dedicated to pursuing a spiritual life. I went there out of curiosity, more or less as a scientific experiment – to test Vedanta's ideas. I stayed at the Chicago Center while working during the day in construction on the Sears Tower, where my slight build equipped me to be lowered into elevator shafts to work on electrical wiring.

At the Chicago Center I read through all eight volumes of the *Complete Works of Vivekananda* (the 9th wasn't published until later).[31] We learned about Vivekananda's teacher and guru, Sri Ramakrishna (1836-86), the Indian ascetic considered by millions in India and around the world to be the latest Avatar, or incarnation of God. I read of Vivekananda's spiritual tutelage and awakening under Ramakrishna and of his transformation from a fearless agnostic to a realized soul. I studied the ancient Vedas, especially the Upanishads and the Bhagavad Gita – the "ends of the Vedas"[32] – which form the basis of Vedantic philosophy.

Advaita Vedanta – the oldest and most canonical form of Vedanta and the form practiced by Vivekananda – appealed to the scientist in me. With Einstein's equations still

[31] Now online at http://www.advaitaashrama.org/cw/.

[32] The literal meaning of "Vedanta" In Sanskrit.

reverberating in my head, I learned that according to ancient Vedanta teachings, "the universe arises from and is sustained by infinite consciousness called Brahman."[33] In common with other Indian philosophical traditions, Vedanta holds that Brahman is immanent in all beings, and that the highest goal in life is truly to understand this ultimate reality. This requires dispelling the ignorance that Vedanta says comes from reliance on the body and the senses – precisely, I thought, what Einstein's equations implied.

Advaita Vedanta teaches that the true Self (called the Atman) is the same as Brahman; that Brahman makes up our souls, and our souls comprise Brahman. This is the principle called "Nondualism" – that God and the individual soul are not separate but the same. In Vedanta practice, spiritual realization comes not from belief in sacred scripture[34] but, as explained by the ancient sages, through each individual's direct realization of pure consciousness. Brahman/Atman – the One existence underlying our diverse perceived reality – is consciousness, and vice-versa. Thus, Vedanta teaches "The God that is in everyone has become everyone and everything."[35]

And in Vedanta: "One God is not sufficient. You are all

[33] Vivekananda 1997 (Complete *Works),* Vol. 5, Sayings and Utterances.

[34] Vedantists find inspiration and enlightenment in the ancient Vedas, especially the Upanishads, but do not treat them as holy texts that represent the word of God.

[35] Vivekananda 1997, "Is Vedanta the Future Religion?" (Complete Works) – Vol 8:125. See https://en.wikisource.org/wiki/The_Complete_Works_of_Swami_Vivekananda/Volume_8/Lectures_And_Discourses/Is_Vedanta_The_Future_Religion%3F.

Gods, says the Vedanta."[36] Everything in Vedantist spirituality flows from this view of human (divine) nature. To attain spirituality, "You do not need to go out of yourself to see the truth, but must look within," Vivekananda said. "The bodily senses give a misperception of reality." So, you must put aside "the little things of the senses," in order to examine consciousness, to "realize what you truly are…you will appear as Spirit and God."

As a student and disciple of Sri Ramakrishna, Vivekananda was deeply versed in Hindu spiritual philosophy, but he was also well educated in the Western tradition. Widely read in European and American philosophy, he was fluent in spoken and written English, and he was conversant with principles of late 19th century science, including Newtonian physics. At the 1893 World's Parliament of Religions and thereafter, he met and talked with scientists, philosophers, theologians, businesspeople, and social leaders. He was sponsored and hosted by prominent American women and men who saw in his teachings the unique potential for a new world religion.

Vivekananda believed that the United States was fertile ground for the development of a new kind of Advaita Vedanta. The land of freedom, equality, dynamic industry, and advanced technology, he said, could be the place for a spirituality to flower that was uniquely suited to the modern age and consistent with the principles and findings of modern science. With this possibility in mind, he conceived a modern,

[36] Vivekananda 1997 (Complete Works), Vol. 5, Sayings and Utterances.
See: https://en.wikisource.org/wiki/The_Complete_Works_of_Swami_Vivekananda/Volume_5/Sayings_and_Utterances.
See https://tinyurl.com/ybmgaotr.

practical Vedanta that married ancient wisdom and Sri Ramankrishna's message. This modern Vedanta,[37] while true to its ancient non-dualistic wisdom, could be practiced without employing all the ritual trappings of India and traditional Hinduism, and could be as relevant to someone coming to it from Christianity, Judaism, or Islam as to one with Hindu roots.

Vivekananda offered a plausible answer to my question of what is real – if, as Einstein's equations seemed to show, the world I perceived through my senses was an apparition, a mistake of the senses. And Vivekananda's answer did not seem to me to contradict science or reason. On the contrary, by speaking about levels of consciousness as one key behind sense perception, he shed a whole new light on how we experience the world "out there."

Vivekananda was well educated in Western thought but also had sat at the feet of Sri Ramakrishna, considered in India to have been an incarnation of God. In India, such incarnations are believed to have occurred more than once – unlike in the West where we've only got one shot (Jesus if you're a Christian, the Messiah you're waiting for if you're Jewish). Sri Ramakrishna had the ability to traffic between this world of diversity and the underlying Oneness. He would go into a meditative state of transcendent consciousness and then come

[37] Modern scholars sometimes describe Vivekananda's practical Vedanta as "neo-Vedanta," a term that was not used by Vivekananda but appears to have been in use in India already in the late 19th century; see https://en.wikipedia.org/wiki/Neo-Vedanta and https://en.wikipedia.org/wiki/Neo-Vedanta#Etymology. Also see https://en.wikipedia.org/wiki/Neo-Advaita.

back to body consciousness. That's called *samadhi*, or *nirvana* if you're a Buddhist.

A Western scientist looking at somebody experiencing *samadhi* will say, "Well, that person's in a trance, or maybe they're epileptic" – some kind of dismissive explanation that doesn't relate to what the person is actually experiencing.[38] But the fact is that we simply don't know what the person is experiencing. That's the interesting thing about consciousness. We don't have the ability to get into someone else's consciousness, and yet we all seem to feel that we're experiencing the same objective universe out there and can make objective judgments about it.

In any case, those who've had this transcendent *samadhi* experience come back and say to everybody else: "Look, you need to do this. You need to see this for yourself. Don't take my word for this." Everyone has to recreate this experience in his or her own laboratory of the mind, and when you have, you'll discover your unity with God, if you will, or with this realization of Oneness. God not as a personal God, but as a transcendent unity that is one without a second, and we are all that one.

Of course, we ordinarily experience exactly the opposite, and for people to suggest in some way that we are God can be very uncomfortable for many. To me that's the only credible solution to questions posed not only by Vedanta but by

[38] Recent research has thrown some light on how meditation affects the brain, but not on the subjective meditative experience itself; see https://www.medimaging.net/mri/articles/294734609/arterial-spin-labeling-mri-demystifies-meditation-illustrates-how-meditation-reduces-pain.html.

physics, but it's still only theoretical to say that. You need to experience this transcendent unity, and in order to have that experience, you have to undergo some sort of transformation.

Vivekananda explained that the ancient sages had discovered the Oneness behind the observable universe by deeply investigating consciousness and sense perception. Based on their own internal experience and spiritual practices, they discovered that our sense perception is flawed. To illustrate this misperception – *Maya* – they used the now-famous analogy of the rope and the snake. Imagine, they said, that there is a dimly lit room at twilight. In the far corner of the room is a coiled rope. When you walk into the room, because it's dimly lit, you make a momentary mistake in perception and you say, "Oh my God, there's a snake in the corner of the room." The ancients claimed that the universe we observe is exactly like this misperception of a rope as a snake. That is to say, underneath this apparition of the universe that we see is the true reality – unchanging, infinite, and undivided, the "one without a second."[39] It is our job to see the rope.

In order to mistake the rope for a snake, the ancients said three things have to take place. First, you have to fail to see the rope for what it really is (You don't instantly recognize it as a rope). Second, you have to project onto the rope the qualities you associate with a snake. (You do not mistake the rope for a Cadillac.) The rope suggests snake-like qualities that you have projected onto it. Third, and most important, there never was a snake (Maya), only the rope (Brahman). The rope is the only thing really there. The key to this whole puzzle is that at all times, no matter what, that rope is always present and always

[39] This phrase is from the Rig Veda, referring to the Brahman.

visible to the observer. As John Dobson would so often put it, the reality shines through the misperception. You are always perceiving the rope, even though you think it is a snake.

When speaking to his Western audiences, Vivekananda often used the rope and snake analogy to explain the Vedanta view of Oneness underlying the universe we observe:

> "The rope is changed into the snake apparently only; and when the delusion ceases, the snake vanishes. When one is in ignorance, he sees the phenomenon and does not see God. When he sees God, this universe vanishes entirely for him. Ignorance or *Maya*, as it is called, is the cause of all this phenomenon, – the Absolute, the Unchangeable, being taken as this manifested universe." [40]

Investigating consciousness – what makes us perceive the rope and yet conclude that it's a snake – is to Vedantists the key to understanding the nature of ultimate reality, the Oneness of the universe. The aim of Vedanta is to enable one to remove ignorance and attain this realization – to become a "realized soul."

Advaita Vedanta differs fundamentally from the eastern spiritual practice that is best-known to Americans and Europeans – Tibetan Buddhism as exemplified by its great practitioner, the Dalai Lama. While Buddhism's core concepts are similar to those of Vedanta, the differences are – to me at least – crucial. Behind the veil or misperception represented by *Maya* in Buddhism is neither God nor anything else; there is

[40] Vivekananada 1997 (Complete Works) Vol. 1:366, https://tinyurl.com/y8s6g4dw

nothing. In Vedanta, *Maya's* veil obscures the reality of Brahman. The purpose of spiritual life in Vedanta is to pierce Maya's veil and realize the unity, the true reality. To a Vedantist, Vivakananda said, there are "no other attributes to God except these three – that He is Infinite Existence, Infinite Knowledge, and Infinite Bliss, and he regards these three as One."[41]

Vivekananda understood that his American audience – enjoying the successes of late 19th century industrial wealth and prosperity – looked upon him as an exotic, pagan, nonbeliever from a country with extremes of poverty. But he was secure in his mission to bring India's ancient wisdom to America. He said, "I have a message for the West as Buddha had a message to the East,"[42] and elaborated, "My ideal can be put in a few words, and this is: To teach unto men their divinity and how to make it manifest in every moment of life."[43] He spoke boldly to the largely Christian audience at the Parliament of Religions in 1893 of the one reality transcending all dualistic concepts like those underlying Jewish and Christian traditions: God out there, man a separate creation. He challenged the pervasive emphasis on sin, good and evil, and mankind's need for redemption. He questioned the need for an organized Church with canonical doctrines to ensure good behavior. To Vedantists, he said, God is within; each

[41] Infinite existence is referred to as "sat," infinite knowledge as "chit," and infinite bliss as "ananda," the whole of existence being "sat-chit-ananda."
[42] http://www.chicagovedanta.org/150th.html
[43] Selected Teachings of Swami Vivekananda, https://web.archive.org/web/20120330175816/ and http://www.belurmath.org/swamivivekananda.htm.

person is intrinsically divine, not sinful. "Sin" comes from ignorance, not from willful evil. Spirituality is the search for knowledge to dispel the veil of ignorance – the *Maya* – and achieve direct realization of Oneness. Each individual according to his personality and tendencies looks within and follows his or her individual path of subduing the ego and restoring one's true state of *yoga* (union) with ultimate reality. To see oneself erroneously as sinful, therefore, was to disparage the divine within, to cripple the capacity to see our own divinity.

Vivekananda emphasized that religion should not contradict reason and logic. Miracles, he observed, require the suspension of logic, and doctrines enforce their acceptance. Vivekananda acknowledged that "all [true] religion is going beyond reason, but reason is the only guide to get there . . . If a belief conflicts with logic or reason, then go with reason and throw out the belief, then 'thank God you have escaped a superstition.'" In seeking Truth, he boldly stated, "Stick to your reason until you reach something higher; and you will know it to be higher, because it will not jar with reason."[44]

> Lecturing in London in 1896 Vivekananda said:
> "When the scientific teacher asserts that all things are the manifestation of one force, does it not remind you of the God of whom you hear in the Upanishads: 'As the one fire entering into the universe expresses itself in various forms, even so that One Soul is expressing Itself in every soul and yet is infinitely more besides?' Do you not see whither science is

[44] Vivekananda 1997 (Complete Works) Vol 7, *Inspired Talks*, Saturday, July 20, 1895, https://tinyurl.com/y7u68mt5.

> tending? The Hindu nation proceeded through the study of the mind, through metaphysics and logic. The European nations start from external nature, and now they too are coming to the same results."[45]

To me, these words spoke of a scientific approach to testing reality, exactly what I had been seeking without success in Western religious traditions.

Vivekananda extolled Ramakrishna's belief that all religious traditions could be valid means toward realizing God and enlightenment.[46] At the same time, he argued that there is no reason for the tenets of all not to be subject to logic and reason. He urged all nations and religions to put aside doctrines and irrational beliefs, to embrace reason, and to recognize God as the Oneness underlying the unity of humankind. Forcing or even persuading others to embrace or convert to Hinduism or Vedanta was not his goal. On the contrary, the ancient Rig Veda states "Truth is one, sages call it by various names." (That quotation was etched in large gold letters above the dais at the Chicago Center's lecture hall when I lived there.)

As he travelled through America and Europe, Vivekananda challenged the world's scientists and leaders in technology and business to find ways to help reconcile science and spirituality. He acknowledged that while India could teach the West much about spirituality, it would not lead the way in showing how

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[45] Lecture delivered in London, 1896. The Complete Works of Swami Vivekananda /Volume 2/Jnana-Yoga/ The Absolute and Manifestation.

[46] Ramakrishna famously experimented with Christianity and Islam – as well as with a female identity and with life as a monkey. These experiences are vividly portrayed in Nicola Barker's 2016 book, *The Cauliflower.*

modern science and spirituality could meet and "shake hands." India was still largely an agrarian and authoritarian culture with deeply embedded ancient customs and traditions, pervasive poverty, and a caste system resistant to modern industry and social change. He felt that the breakthrough he hoped for would have to happen first in the technologically advanced West with its democratic freedom and scientific inquiry open to new ideas.

The time and place where Vivekananda first began to present his message to the West – the 1893 Chicago World's Fair[47] – was fitting. Chicago was the epitome of the new America, an emerging world center of industry, education, technology, and innovation. The World's Fair, also known as the World's Columbian Exposition, commemorated the arrival of Europeans in America 400 years earlier, and celebrated America's coming of age on the world stage. Steel, manufacturing, rail and ship communication, electricity – all were on public display in the science, arts, and industries buildings along the grand concourse. America's genius in science and industry, Vivekananda said, displayed a capacity to think creatively and in new ways, which could bring about new approaches to thinking about the relationship between science and spirituality in the modern world.

After the World's Parliament of Religions, Vivekananda spent several years traveling across America and Europe, lecturing to large gatherings that included top scientists,

[47] World Fairs have rather fallen out of vogue in recent years, but are still held; they were once widely attended opportunities for nations to promote themselves and their products. See https://en.wikipedia.org/wiki/List_of_world%27s_fairs for a list.

educators, and industrialists, all the while honing his "Message to the West." He came to see the United States as a unique place where people might be able to bring the spiritual wisdom of the East together with the active, rational, entrepreneurial spirit of the West. America's highest ideals, he believed, were also in harmony with Vedanta. This was the land of Freedom, Equality, and Reason – essential qualities he thought were needed to achieve his goal of bridging the divide between West and East, science and spirituality.

Vivekananda's message was received with enthusiasm; Vedanta centers were established by his new Western disciples in New York, California, and, later, Chicago and other major cities. They are still in operation.[48]

Vivekananda also posed a challenge to the classical Newtonian Physics he encountered in the United States and Europe. At the time, energy, mass, space, and time were considered by physicists to be four separate "things." The universe was considered to be like a giant machine or a complex engine. It was absolutely "objective," existing separately from you and me. It was made up of gravity acting on matter "at a distance" with energies that propagated through that medium called the Luminiferous Aether (a.k.a. "the Ether," or "the Plenum.") The universe was thought ultimately to be explained and completely understood simply by analyzing all the forces that act on all its particles. Despite his respect for science and rationality, Vivekananda knew from his spiritual practices that this core dualist belief could not be

[48] For a list and links, see http://www.vedanta-seattle.org/centers-in-north-america/.

correct; it conflicted with Vedanta realizations and his own inner spiritual experience. But how to resolve the conflicts?

Vivekananda took steps to engage with scientists involved in the discoveries and experiments that were dramatically changing interpretations of the physical universe – even though most scientists may not yet have fully realized or acknowledged that they were. Could they help him prove, or test, truths realized by Vedanta sages? For example, there was the issue of whether light was a particle or a wave. Recall that Newton had proposed long before that light was made up of tiny particles, or "corpuscles," but in 1802 Thomas Young had developed the double-slit experiment and shown that light didn't behave as though it were made up of particles.[49] He had propounded the Wave Theory of Light to explain his observations. In 1873, James Clerk Maxwell had suggested that light was an electromagnetic wave traveling through the hypothetical luminiferous ether, but in 1887 Michelson's and Morley's experiments had found no evidence that the ether existed. Did this mean that light energy in the form of waves did not require a medium in which to travel? If so, what did this mean about its physical reality? Was it a snake or a rope?

Meanwhile, working with the mysterious electromagnetic energy, Nikola Tesla had demonstrated his Alternating Current (A/C) motor in 1891. Electricity was a major attraction at the Chicago World's Fair, whose buildings George Westinghouse illuminated using an A/C system that depended on Tesla's revolutionary motors to deliver power

[49] This was only the beginning of the remarkable, still-continuing adventure of the "double-slit experiment." For a detailed account, see Ananthaswamy 2018.

over very long distances. Electromagnetic energy was on the threshold of widespread use, but scientists and engineers really didn't know what it was. Nor did Vivekananda, but the uncertainty surrounding the nature of electromagnetic energy seems to have intrigued him. Was it possible that science was on the threshold of verifying a fundamental Vedanta principle? He set out to prod scientists to determine whether force (that is, energy) was the same as matter (that is, mass).

Einstein's equations and the experiments actually proving this to be the case were still twelve years and more in the future; Einstein himself was in his teens.

Vivekananda contacted Tesla, widely viewed as the world's foremost electrical expert, and asked bluntly: "Can your science show that matter (mass) and force (energy) are the same thing?" Writing to one of his disciples, E.T. Sturdy, he described his correspondence, and Tesla's reply to this request: "Mr. Tesla was charmed to hear about the Vedantic Prâna and Âkâsha and the Kalpas,[50] which according to him are the only theories modern science can entertain. Now both Âkâsha and Prâna again are produced from the cosmic Mahat, the Universal Mind, the Brahmâ or Ishvara. Mr. Tesla thinks he can demonstrate mathematically that force and matter are reducible to potential energy. I am to go and see him next week, to get this new mathematical demonstration."[51]

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[50] Prâna, the Sanskrit word for "life force," in Hindu thinking is the energy that pervades the universe. Âkâsha means the basis and essence of all things in the material world, and the Kalpas refer to cosmological time.

[51] Vivekananda 1997 (Complete Works), Vol. 5, "Epistles," 101-102, letter dated February 13 1896 to E.T. Sturdy. Edward Toronto Sturdy (1860-1957) was a Sanskrit scholar, student of Hinduism and Buddhism, and a member of the Theosophical Society.

In Vivekananda's conviction that science must not conflict with Vedanta, I saw a counterpart to my own belief that spirituality must not conflict with reason and science. His outreach to Tesla resonated with my desire to reconcile science and spirit. Apparently, however, Tesla did not succeed in his demonstration; at least, its results have never been published. Only over a decade later, in 1905, did Einstein publish his equations showing that energy ("force") and matter ("mass") are indeed the same (E=m). Vivekananda died on July 4th, 1902. It's a shame that Einstein's revolutionary insights were published only after Vivekananda's death. One can imagine that, were he alive, Vivekananda would have redoubled his efforts to get the scientific community to pursue the implications of Einstein's equations – that our perception of time and space is not correct; that our "common sense" sense perception is fundamentally flawed; that there is no "objective" universe "out there" – and to explore how these implications related to the reality experienced by the Vedanta sages. In the absence of Vivekananda's dynamic and inspired leadership, such questions lay mostly dormant for many decades.

To India and Back

Eventually, four of us Americans at the Chicago center traveled to India, first visiting Ramakrishna Order centers in central and northern India and finally arriving at Belur Math outside Calcutta (now Kolkata), the headquarters of the Ramakrishna Order.[52]

[52] Ramakrishna Math and Mission, a worldwide network based near Kolkata, was founded in 1898 by Vivekananda to advance the principles of

India exposed me for the first time to a world of poverty, filth, and chaos that shook my comfortable sense of human experience and gave me further insight into Vivekananda's vision. I could appreciate his desire to bring a scientific approach to solving India's practical problems but also understood his conviction that his modern, practical Vedanta couldn't take hold in any widespread sense in a culture so tied to caste hierarchies and lives consumed with meeting basic necessities. And yet, I marveled at the Indian world view – so different from the West – in which a sense of the sacred permeated every aspect of life. Every home had a shrine, every act from bathing to selling staples from a roadside stand began or ended with a prayer, an offering, an acknowledgement of the presence of the gods or God. Good, bad, evil, all had their place – and a god or goddess to worship or of whom to ask favors.

At Belur Math, it had been somehow decided that Swami Vireshwarananda, the Head of the worldwide Ramakrishna Order, would himself give me a mantra and initiation, that is, he would become my Guru. This was standard procedure for Ramakrishna monks from India but not for "outsiders." It was the equivalent of being baptized by the Pope. I felt astonished and confused, a humbling sense of my own unworthiness.

Following custom, I bathed in the Ganges and then went to see Swami in his room, offering flowers at his feet. He asked me who I thought of as my chosen ideal, my model for spiritual life, and I said it would be Jesus Christ. Swami gently suggested that Sri Ramakrishna, as the Incarnation of the age, would be a

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Vedanta in the modern world. Its website explains the ancient traditions and Vivekananda's modernizations. https://belurmath.org/ideology/

better chosen ideal. I agreed, though it was hard at first for me to identify with someone so different from me.

Swami Vireshwarananda instructed me in meditation practice, and gave me Sri Ramakrishna's mantra to repeat. He told me to begin by thinking that the all-pervading Brahman Consciousness was condensed into the form of Sri Ramakrishna, that Sri Ramakrishna was the embodiment of all Gods and Goddesses. He asked me to visualize Sri Ramakrishna seated in the lotus of my heart, and to mentally offer flowers and incense to him, then begin repeating his – and now my – mantra. When my meditation was complete, I was to offer its fruits to Sri Ramakrishna and ask: "Lord, please get done whatever is needed in this life, so that I may attain Realization." Swami then showed me how to count the mantra on my fingers, should I not have the traditional beads (*japa mala*) to use for the purpose. I made respectful obeisance (*Pranāma*) to him, and he gave me a booklet of written instructions (*Upasana),* which I've kept and consulted to this day. Thus, I was initiated formally into Vedanta practice.

But I spent only a short time at Belur Math. During his examination of my record in preparation for the initiation, Swami Vireshwarananda learned that I had not yet graduated from college. This caused him to reconsider, and after initiating me and giving me my mantra, he advised that I delay deciding what path to take in life until I had completed my college studies. After some reflection, I decided to return to Case Western and finish my Electrical Engineering degree.

So I did, and met my future wife, Judy, who was herself just back in the U.S. after doing research on the 12th century medieval monastery of St.-Gilles-du-Gard in France in pursuit

of her master's degree in art history. We were occupying two rooms of a four-bedroom apartment, with two other roommates, and marveled at the unlikeliness of our meeting – a medieval art historian and an electrical engineer, both immersed in monastic thought. How would we ever have met if not thrown together this way?

Soon I had my first job working on transceivers and microprocessors at Motorola. Getting a nine-to-five job and marrying Judy – and soon enough organizing my own businesses[53] and becoming a father – were obviously steps away from the monastic life. But I felt that at this stage in my life, recognizing that I wasn't prepared to devote myself totally to Vedanta, there was no need to choose between marriage and the monastery, between reason and spirituality, between work and prayer. Everyday life could itself be made a spiritual discipline. Joining the Order was not necessary, and I concluded that – for a time at least – it was not an option I wished to pursue. I was still continuing down the path that I have pursued to this day, seeking reconciliation between science and Vedanta.

> *Judy adds: That Neil and I met at all, let alone at that moment in 1975 when he was returning from India and I from researching my master's thesis on a medieval monastery in France, was in my view a matter of destiny. The likelihood of a Vedanta monastic and a student of medieval European monasticism winding up in the same house by chance seems remote indeed.*

[53] Video Post & Transfer, a television post-production facility in Dallas, Texas, and In-Three, an artificial 3-D film synthesis company in Los Angeles.

Unlike Neil, I came from a deeply religious – Catholic – family. My father, as Neil said in his eulogy for him, was beyond religious, a man of true spirituality. My own sense of spirituality came, as I recall, less from faith and belief than from vivid, direct, childhood experiences, at age 8 or 9, during novenas to St. Francis. These short prayer services – with song, Latin, incense – transported me in a kind of mystical experience of something I could only describe as God. Catholic teaching was that "God is within you." I took it literally. I had similar experiences in nature, feeling transported by trees, light, and especially wind into a sense of Oneness with the natural world. But I didn't tell anyone.

When I took my first art history class in college, a survey course, it introduced me to the earliest Christian thought and art, and through them to a state of mind that I believed was consistent with my own. I specialized in medieval art history, but not in the Gothic with its magnificent expressions of learning and exuberance. Rather, I was drawn to the Rule of St. Benedict and the interiority of Benedictine monasteries – the vaults, womb-like, spirituality looking inward to altered states of consciousness created by a life of solitude, reading, work, prayer; monks receiving consciousness from bodily service to God. Monastic art, like my childhood experience, was to me about spirituality as an altered state of consciousness.

When I met Neil in 1975, sharing an apartment with him and two others, he was a shy geek, dazzling me not with spiritual things but with feats of engineering. He would transform the dial of his ancient cathode-ray tube television into a receiver of TV signals from across the country. He was General Manager of the campus radio station, builder of a sound mixing board for his senior year project. Then slowly he told me of Chicago, Belur Math in Calcutta (now Kolkata), and Vedanta. I had studied Eastern philosophy – it seemed all of us in the early '70s were looking East – but never encountered Vedanta and the simple yet profound non-dualist concept that we are all part of the One, that God lies within. He helped me understand Vedanta and I took him to visit my medieval monasteries in Europe, at first under protest that I was trying to "culture" him but then with increasing appreciation. Our daughter Anna, if a boy, would have been named

either Naren (Vivekananda's name) or Nicola (Tesla). It would have been a hard choice. As it was, we named her after our maternal grandmothers, both strong and independent women.

In our early years together, Neil spoke only sporadically about his time in the Vedanta monastery. Slowly, its impact on him came more to the fore. We'd be driving to visit his folks, and he'd say, "guess what I'm thinking about." I'd say: "God." He'd ask: "how did you know?" I just knew – and knew him. In the 1980s, he reconnected with Swami Bhashyananda in Chicago and fellow monks from the 70s, now living at a Vedanta Center in Ganges, Michigan.

Throughout our years together he told me that one day he'd leave me – to return to the monastic life. I didn't like the idea, but I understood it. I had the same inclinations myself. Of course, he didn't have it in mind to leave me the way he eventually did, leaving his body as well.

Chapter 2 Endnotes

On Consciousness: The question of just what consciousness is, and where it resides, is the subject of vigorous debate not only in religious and spiritual studies but in physics, philosophy, cosmology, neuroscience and computer science. In 2011, for example, a special issue of the Journal of Cosmology was given over to, and titled, "Quantum Physics of Consciousness."[54] Among the many works on the subject – some of which we'll highlight later – mathematician Sir Roger Penrose's 1994 Shadows of the Mind[55] is subtitled "A Search for the Missing Science of Consciousness," and delves deeply into the subject. Bruce Rosenblum's and Fred Kuttner's best-selling Quantum Enigma[56] is subtitled "Physics Encounters Consciousness."

Consciousness is of abiding interest to many thinkers in quantum physics because both theory and experiment suggest (though they do not prove) that a conscious observer is necessary to provoke the "collapse" of energy waves into the particles that make up matter as we know it. Physicist Fred Alan Wolf says: "Consciousness is the creative element in the universe. Without it, nothing would appear."[57]

On Not Asking "Why?": In his widely-read book, How the Hippies Saved Physics, David Kaiser refers to this widely accepted, eyes-closed approach to the implications of Quantum Theory as "shut up and calculate."[58] Adam Becker's 2018 What is Real? provides a more detailed and nuanced view.[59] According to most sources, notably What is Real? and Quantum Enigma, the approach resulted – logically if not intentionally – from the

[54] Kak et al 2011.

[55] Penrose 1989, 1994.

[56] Rosenblum and Kuttner 2011.

[57] Wolf 1989: 215. Note that Wolf is regarded by some to be a "fringe" thinker.

[58] Kaiser 2011.

[59] Becker 2018.

"Copenhagen Interpretation" of quantum physics adopted by Niels Bohr and his colleagues – leaving the philosophical underpinnings of modern physics unexamined while focusing on working principles and practical applications (including, to the regret of many, the construction of atom bombs). Einstein was never content with "shut up and calculate;" he went to his grave objecting to it, and more generally to the Copenhagen Interpretation.

On Science and Philosophy: Twenty-first century philosophers are not as resistant to science as were Neil's professors. Thomas Nagel of New York University, for whom Neil expressed special respect, has explored scientific issues, notably in his 2012 book Mind & Cosmos,[60] which Neil read with approval during the last months of his life. While Nagel reaches no firm conclusions (other than to reject what he calls the "neo-Darwinist" notion that consciousness and human morality have developed via natural selection), his tentative suggestion that the universe is teleological – that it has a purpose – is consistent with the direction of Neil's thinking. A different tack, but one that reflects the growing philosophical interest in science, is represented by the 2009 debate, before a standing-room-only crowd at the annual meeting of the American Philosophical Society's Central Division in Chicago, between atheist Daniel C. Dennett and theist Alvin Plantinga on "Science and Religion: Are They Compatible?" An expanded version of the debate was published in 2011.[61] Both philosophers defined "religion" in Christian terms, with occasional bows to Judaism and Islam – that is, both assumed that religion involves a personal god – distinct from the organisms who may think about her – who intervenes in human affairs. This limited imagining of religion also informs Dennett's 2017 book, From Bacteria to Bach and Back: The Evolution of

[60] Nagel 2012.

[61] Dennett & Plantinga 2011.

Minds.[62] It contrasts dramatically with Neil's Vedantist spirituality.

On Drugs, Spirituality, and Engineering: Although drugs played no significant role in Neil's journey to spirituality, they were very important in those of many of his contemporaries, including an impressive number of his fellow engineers involved in the digital revolution. Michael Pollan provides a vivid account of the 1970s psychedelic culture in his 2018 book, How to Change Your Mind.[63]

On Advaita Vedanta: Vedanta is one of the six schools or systems of Hindu philosophy. By some accounts it is the oldest and most intellectual of these systems. Its name in Sanskrit means the conclusion (anta) of a Veda. The four Vedas comprise the foundational literature of Hinduism. Probably committed to writing beginning about 1,500 BCE, they undoubtedly reflect a much older set of oral traditions. Their authorship is somewhat mysterious; most modern scholars ascribe them to the people of the Indus River Valley or Harappan civilization,[64] though older (European) works attribute them to the speakers of Aryan languages who supposedly entered India out of central Asia around the time the Vedas are thought to have been composed.[65] The conclusion of each Veda is philosophical, aimed at expressing the highest forms of knowledge. Advaita Vedanta is distinguished from other sub-schools of Vedanta by being rigorously non-dualist.

Several Europeans, Americans, and western-oriented Indians write and teach today about Advaita Vedanta. As one example see http://shiningworld.com/site/. Neil was deeply skeptical of such people. In his opinion they interpreted Vedanta as a kind of self-help practical guide to individual realization; in his view the

[62] Dennett 2017.

[63] Pollan 2018.

[64] See https://www.khanacademy.org/humanities/world-history/world-history-beginnings/ancient-india/a/the-indus-river-valley-civilizations.

[65] But see http://archaeologyonline.net/artifacts/aryan-invasion-history.

whole point of Vedanta was to eliminate the self in the pursuit of realization beyond the self. This concept flies in the face of Western individualism and so is often difficult for Westerners to comprehend or accept. Neil was also skeptical of other "New Age" devotees and preachers of eastern religions, such as Deepak Chopra (See https://chopra.com/) – even though much of what Chopra says can seem very similar to what Neil believed. When asked about Chopra, Neil simply said: "he doesn't understand the science." However similar Chopra's words and Neil's might sound, to Neil, Chopra simply did not do good science.

On Dualism, Non-Dualism, and Materialism: Dualism and Non-dualism are key concepts that we should be sure we understand. This is complicated by their use by different writers and traditions to mean somewhat – or even radically – different things. As Neil used the term, "Dualist" refers to the idea that God is distinct from her creatures, or more generally that there is a clear distinction between us thinking beings and the environment in and about which we think.[66] There's us down here and God or Allah or The Creator up there in heaven, or more broadly, there's each of us in here and an objective reality out there. Non-dualism, as Advaita Vedantists use the term, says there's really only one reality – the spirit. "This universe – mental and physical – is a manifestation of a spiritual reality known in Vedanta as Brahman" (Atmarupananda 2010:12). But some Vedanta traditions are dualist in another way, in that they distinguish between the Brahman and the individual spirit, or Atman. Advaita Vedanta is explicitly non-dualist, holding that the Brahman and Atman are One – "One without a second." In fact, the Sanskrit word "Advaita" means "not-two." Although comprehensively articulated in the 8th century C.E. by the philosopher known as Adi Shankara,[67] Advaita Vedanta is rooted

[66] Although scholars like Hans Jonas, in *The Gnostic Religion* (1958, 1963) uses "dualism" to refer to the Gnostic belief in two distinct sorts of gods.
[67] See https://en.wikipedia.org/wiki/Adi_Shankara.

in the earliest of the Upanishads. Vivekananda's message was Advaitist.

European philosophers have traditionally come at dualism from a different direction. "Cartesian dualism," a principle articulated in the seventeenth century by René Descartes, distinguishes specifically between body and mind. The body is a physical thing while the mind is immaterial and may persist after the body dies. Materialists since Descartes have ridiculed this sort of dualism, but in contrast with Advaita Vedanta thinkers, they assert that the physical is all that exists. The atheist philosopher Daniel Dennett, for example, arguing that consciousness evolved as an aspect of organic life in accordance with the laws of (Newtonian) physics, ridicules Descartes' idea that (in Dennett's words) "his mind (and yours) were not material entities, like lungs or brains, but made of some second kind of stuff that didn't have to obey the laws of physics" (Dennett 2017:14). Although Dennett doesn't use the term, presumably "non-dualism" to him would mean that there is nothing but the "kind of stuff" we perceive around us, with "perception" understood in terms of Newtonian physics. This is what theoretical physicist Sean Carroll says quite flatly in his best-seller, The Big Picture:

> "There is only one world, the natural world, exhibiting patterns we call the 'laws of nature,' and which are discoverable by the methods of science and empirical investigation" (Carroll 2016:11)

So while "dualism" means more or less the same thing to Western materialists and Advaita Vedantists – a distinction between the physical and the immaterial/spiritual – and each proposes that reality is really non-dualist (sometimes called "monist"), they part company over what non-dualist (or monist) reality is. For the materialist it is our bodies/brains and what we think we see, hear, taste and feel around us. For the Advaitist it is spirit – or energy. Vedanta finds God within us all, and within all of Reality; Advaita Vedanta further holds that each of us (Atman) and all of Reality (Brahman) are the same. Neil used

the word "dualism" in the Advaita sense of distinguishing – illusorily – between an "in here" and an "out there."

Fritjof Capra, in the first few pages of The Tao of Physics,[68] outlines how dualistic thinking became embedded in the worldviews of western philosophers and scientists.

"Materialistic" is another term we need to be clear about. It means not only just money-grubbing, but more generally the idea that there is a material world, and in extreme form, the idea that the material world is all there is. Dennett exemplifies the extreme form of materialism – as does Carroll, who, however, calls it "naturalism" and softens its edges further by prefacing it with the word "poetic" (Carroll 2016:15-22). Non-dualist (monist) materialism is diametrically opposed to the non-dualism of Advaita Vedanta.

Although modern Judaism, Christianity, and Islam are dualist – God is up there, watching over us down here – it is not at all certain that Judeo-Christian worldviews of the first centuries ACE were as dualistic and materially oriented as they have become over the last two thousand years. The Christian Gnostic[69] scriptures analyzed by Hans Jonas, Elaine Pagels and others – many of them hidden away in or before the Fourth Century C.E. and discovered only in the 1940s or more recently – reflect different and often not very dualistic interpretations of Christian theology; Pagels discusses historical ways of accounting for the hold that dualistic thinking has on the modern church. Neil Douglas-Klotz's slender exegesis on the Lord's Prayer as rendered in Aramaic allows for a non-dualist interpretation of the thinking and preaching of Jesus of Nazareth[70] that is not easily distinguishable from that of Advaita Vedanta.

On Swami Vivekananda: Born in 1863 to an affluent high caste family in Kolkata (then called Calcutta), and named

[68] Capra 1975.

[69] See for example Jonas 1963; Pagels 1979, 2003.

[70] Douglas-Klotz 1990.

Narendranath Datta (familiarly called Narendra or Naren), the young man who would become Vivekananda was educated at the General Assemblies Institution – now known as the Scottish Church College.[71] Here he was immersed in European science and the humanities; he became conversant with western philosophy and fluent in English and other European languages. Although initially skeptical, he became a devotee of Sri Ramakrishna, a remarkable Vedanta "saint" who worshipped the Divine Mother Kali but had also thrown himself heart and soul into Christianity and Islam; Ramakrishna preached that all religions ultimately led to the One God who lives within us all and is composed of all souls. There is an extensive body of English-language literature about Sri Ramakrishna, with works originating as early as 1898 with Max Müller's Ramakrishna: His Life and Sayings[72] and as recently as 2016 with Nicola Barker's novel The Cauliflower.[73] Between its publication in 1998 and about 2010, a good deal of controversy raged in India and beyond over Jeffrey Kripal's Kali's Child,[74] which put a homoerotic spin on Ramakrishna's teachings. This excitement has now apparently abated.

After Ramakrishna's death in 1886, Naren traveled widely in India as a begging monk, and gradually acquired a considerable following. Arriving at Kanyakumari (Cape Comorin) at India's southern tip, he was moved to swim to an offshore rock and there had a profound vision directing him to take Vedanta to America.[75] Sponsored by his followers, including the Maharaja of Khetri – who asked that he take the name Vivekananda – he traveled to the United States in 1893 to take part in the World's

[71] Cf. http://www.scottishchurch.ac.in/.

[72] Müller 1989.

[73] Barker, 2016.

[74] Kripal, 1998. See also Tyagananda 2010.

[75] The spot is now marked by the Vivekananda Rock Memorial: see https://en.wikipedia.org/wiki/Kanyakumari#Vivekananda_Rock_Memorial.

Parliament of Religions,[76] held in Chicago in connection with the World's Columbian Exposition.[77] Although it was his first such convocation and he was very nervous, it is said that his address was remarkably well delivered and received; his message was Ramakrishna's – of inclusion, that all religions lead to the same end.

After the Parliament, Vivekananda remained in the United States for several years to speak and teach, sponsored by followers he had attracted, and in New York established the Vedanta Society.[78] Traveling on to Europe and eventually back to India, he continued his ministry, setting up maths (monasteries) and programs to aid the poor and oppressed of the subcontinent. After a second visit to America, which is said to have depressed him with its materialism, his health began to fail, and he left his body in 1902, just short of his fortieth birthday.[79]

On the "Unchanging, Infinite, and Undivided": The language of Vedanta can be off-putting to many Westerners, even when used by a practitioner as familiar as Vivekananda was with idiomatic English, and even when further translated by a Neil Feldman. It is worth noting, though, that the idea of an underlying reality that is "unchanging, infinite, and undivided" lies at the base of virtually every religion, though it is expressed in different ways and given different twists by each. It is fundamental to the ancient, near-universal practice of shamanism/animism (cf. Graham 2006)[80] and informs the "Ahura Mazda" of Zoroastrianism (cf. Khazai 2007:21). It is referenced in Buddhism and Taoism (cf. Capra 1999), and of course in schools of Hindu thought other than Vedanta. Judaism, Christianity and

[76] See https://parliamentofreligions.org/parliament/chicago-1893.

[77] See http://www.encyclopedia.chicagohistory.org/pages/1386.html

[78] See http://www.vedantany.org/.

[79] Biographical material from Swami Nikhilananda's introduction to Vivekananda 1953.

[80] For examples, see Narby 2006, Narby & Huxley 2004, Gagliano 2018, Neihardt 1979.

Islam have personalized it as Yahweh and Allah, as God the Father, and as the Holy Trinity. In every case there is the idea of a great body of truth – immortal, unchanging, undivided – beneath the reality we perceive in daily life. So it is understandable that Ramakrishna, and Vivekananda, could hold that all religions can lead one to enlightenment.

On Neil's Decision to Withdraw From the Monastery: The four Yogas – Jnana, Bhakti, Karma, and Raja[81] – provide multiple paths to enlightenment, only some of which require or even encourage monastic withdrawal from the everyday world. Karma Yoga is particularly identified as the way of the active person, busy in the world as was Neil, for whom work is seen as prayer.

[81] See https://philosophy.lander.edu/oriental/yoga.html for a simple English language discussion of the four Yogas.

3

John Dobson

To My Next Incarnation

There may be times – even decades – when life takes you away from pondering the mysteries of reality. That's OK; it's important and rewarding to live, to participate in the work of the world. But if you're like me – as I imagine you are – no matter what else you may be doing, in the back of your mind you'll still be chewing on those big questions, trying to make sense of it all. And then, most likely, something will happen that opens a pathway for you to follow in re-engaging with your quest. In my life, John Dobson opened such a pathway. I suggest that you be alert to the opportunities presented by people like John and by what may seem to be utterly fortuitous events in your life – a job change, a move, reading a book, experiencing a loss or a triumph. "Fortuitous" is probably not really the word for such events, and people like John, I think, don't enter our lives entirely by chance.

Moving On

After returning from India, completing my degree at Case Western, and marrying Judy, I worked for decades as an electrical engineer and businessman – becoming involved in radio and television and with artificial 3-D synthesis of movies. I also continued my pursuit of amateur radio and learned to be a private pilot. As a pilot I learned to trust my instruments; as an engineer and radio operator I continued to trust the equations of Relativity and quantum physics. My respect only grew for the brilliance of Einstein's insights and their revolutionary effects on technology and science. But I remained deeply puzzled by them, and my encounters with Vedanta, while they had broadened my perspectives, had not answered my questions.

As I had when I entered college, I still wanted to understand the why behind the equations. Why is this universe made up of electrically charged particles that seem always to want to come together under gravity and at all times? What is inertia – why do these particles resist change, at all times? And finally, why do the particles have an innate electrical nature to begin with?

These questions had not been resolved by my college education or by my experiences with Vedanta, but meeting and getting to know John Dobson, in the early 1980s, began to shed light on them.

Who Was John Dobson?

John was born in 1915 in Beijing, China. His grandfather founded Beijing University, where his father later taught Zoology. His mother was a musician. John moved with his family in 1927 to San Francisco and completed a degree in chemistry at the University of California at Berkeley in 1943. A self-described "belligerent atheist," Dobson reversed course a year later, after attending a service at the San Francisco Vedanta Center. He then spent the next 23 years as a monk of the Ramakrishna Order. He is most widely known today as the Founder of the San Francisco Sidewalk Astronomers and the creator of the "Dobsonian Telescope."[82]

Dobsonian Telescopes are large, long focal length telescopes that can be made easily and very inexpensively by amateur astronomers.[83] But John's main purpose, as he always saw it, was much bigger. Because of his scientific background, his guru had assigned him to take up Vivekananda's challenge: to reconcile Vedanta and modern science. Dobson spent five decades working this out, until his death in 2014, ever mindful of the shifting sands underfoot as scientists sought ways to

[82] See http://www.sidewalkastronomers.us/id32.html. See also https://www.smithsonianmag.com/science-nature/35-who-made-a-difference-john-dobson-113799923/ and http://americanhistory.si.edu/collections/search/object/nmah_1184523.

[83] When John visited us in Dallas for the first time in 1987, he helped me build two Dobsonian telescopes and one sun telescope, reawakening my childhood fascination with the skies. Judy and I often went camping and while she slept I'd spend hours searching the skies with these precision instruments.

explain the enigma of Quantum Theory.

I was introduced to John in the early 1980s by an old friend from my Chicago monastery days who considered John and me likely fellow travelers. John was a featured speaker at a Vedantist symposium in Detroit. Listening to him, I felt the beginnings of a breakthrough in my own thinking. It was time for me to get back seriously to my own exploration of the intersection of science and spirituality.

John's Vedanta guru had assigned him to reconcile modern science with Vedanta – to pick up the torch from Vivekananda and Tesla, as it were. Carrying out that task took him outside the realm of the scientific method. I read John's writings, and tried to follow, but once again found myself confronting the role of consciousness. What is the (presumably) conscious entity whose observation of energies collapse the wave effects and cause particles of matter to exist? Is it somehow related to the *Brahman/Atman* of Vedanta – as Vivekananda clearly believed?

As I've read Thomas Nagel and others who explore the role of consciousness in our perception of the world, I've come to feel, or at least hope, that maybe the scientific community is reaching out with new questions and tools of inquiry and maybe it's coming closer to realizing Vivekananda's goal.

John Dobson was the first person to propose to me a credible answer to my questions about <u>why</u> there is gravity, electricity, and inertia. John asked me: if we eliminate the separation between space and time – as Einstein showed that we must (and as the entanglement and "spooky action at a distance" revealed by quantum physics illustrate), what do we have?

Reality According to Dobson

The basis for Dobson's interpretation of Einstein's equations was the famous principle known as "Ockham's razor" – giving preference to the simplest explanation that covers all the facts. Formulated by Fr. William of Ockham back in the 14th century, Ockham's razor says that "entities must not be multiplied beyond necessity."[84] Isaac Newton agreed:

> "We are to admit no more causes of natural things than such as are both true and sufficient to explain their appearances. Therefore, to the same natural effects we must, so far as possible, assign the same causes."[85]

Dobson made it clear to me that Einstein's correction of classical Pythagorean geometry to include the element of time was actually extremely simple – though it is not usually presented or explained that way. Einstein, John explained, realized that you must put time into the standard Pythagorean equation[86] as a negative entity. If you apply Pythagoras' equation in its simplest form – as Ockham's Razor dictates – but recognize that time must be accounted for, then you find that space and time are equal but oppose one another. This leads us to conclude that the space between two entities, minus the time between them, is zero. This means that there really is no such thing as an "out there," separate from an "in here," because the separation between the observer (you) and the

[84] See https://en.wikipedia.org/wiki/Occam%27s_razor.

[85] Newton 1687.

[86] Or Pythagorean theorem; see http://www.purplemath.com/modules/pythagthm.htm.

event you observe is zero. Anything we observe with our five senses is not separated from us; it's really not "out there." Meaning, seeing anything "out there" is merely a misperception. Everything we're seeing "out there" is, in actuality, "in here" – in our mind, our field of perception. This, of course, is one of the revelations of Relativity that had shocked me as a teen-ager. John put it in perspective with reference both to science and Vedanta. John explored the implications of this incredible new understanding as he pondered the origin and characteristics of the observable universe.[87] He developed an alternative to the widely accepted "Big Bang" hypothesis for the universe's creation that intrigued me greatly and that I think deserves more study; he argued, in essence, that the universe was never created at all, but exists in an eternal state of regeneration. In a 2002 lecture, he said:

> "… we can get rid of 'creation' altogether if we allow that the material (of the universe) … must recycle by 'tunneling' from the border of the observable universe imposed on us by the apparent expansion."

Rather than beginning in a big bang and expanding to what seems to be a "border" beyond which there's nothing, to John the universe is forever recreating itself, as an artifact of our perception. In his lecture he went on to say…:

> "… the universe is neither infinite nor actual, rather finite and apparitional, and … the apparent cosmological expansion is driven by energy which the radiation loses to red-shifting through its long traverse of the vast expanding spaces of the universe. This apparent expansion of space imposes a

[87] See for instance: Dobson 1993.

> border… at some fifteen billion light years away… simply because at that distance things would be receding at the speed of light. Then, since objects receding from us at or beyond the speed of light cannot be seen by us, or affect us in any way, we can get no information from beyond that border."

Electrons and protons, however, can and do "tunnel" back to us from beyond the border:

> "Electrons and protons aren't 'things,' and they do what things cannot do. They're like dollars in the bank. And when an electron goes from one energy level to another in an atom, it does not slide down. It disappears from one energy level and reappears in the other. The physicists have a name for this; it's called tunneling, and there is no 'in between.' When someone writes a check from a bank in Santa Barbara to a bank in Portland, no one goes down to the bank to get the money. It disappears in Santa Barbara and reappears in Portland, and there's no 'in between.' Likewise, when the particles recycle from the border, there is no 'in between.'"[88]

It was John, too, who helped me better to understand the simple meaning of the famous equation everyone knows as $E=mc^2$. What Einstein actually described (and stated in the appendix to his 1905 paper on electromagnetism) is that E=m, Energy is the same as mass.[89] The reason the equation includes c^2 (the speed of light in a vacuum) is that before Einstein's

[88] Dobson, John, 2002.

[89] Einstein didn't include either of these equations as such in his equation-rich 1905 papers, but he did articulate the principle that matter is energy.

paper, Classical Physics held that Energy and matter were two separate things and so measured them using two different coordinate systems. The systems were not normalized together.[90] To normalize the measuring systems and allow one actually to calculate the amount of energy contained in a unit of matter, it was necessary to introduce a conversion factor, a constant. The speed of light squared – c^2 – happens to work as that factor. The bottom line is that Energy and mass are not separate entities. Einstein's equation says that Energy and mass are exactly the same thing. E=m. A given quantity of mass represents a gigantic amount of energy, but they remain exactly the same!

Obviously, we perceive energy as one distinct thing that works on another – matter. For example, we see a bucket of sand and observe the energy it takes to lift it off the ground. But the equations tell us that this is, again, a misperception; both the bucket and the strain of picking it up are forms of energy. Our senses, Dobson said, perceive reality through the filter of space and time, but neither "really" exists. Time and space together equal zero. These equations are to be trusted; not our gut feelings or commonsense experience.

In the absence of space – which divides things such as an observer and an event – what's left in the universe must by definition be undivided. The universe, John said, "wants" to come together – because beneath what we perceive, it really is together – undivided. And in the absence of time – in which change can happen – we are left with something that is unchanging. Without time and space nothing can be divided

[90] c is the speed of light in a vacuum: https://en.wikipedia.org/wiki/Speed_of_light.

up or change, but that doesn't mean that nothing can be. What really is, John explained – the infinite, undivided, and unchanging (the "rope") – is hidden from us by the divided, finite, and changing (the "snake" we perceive).

But not entirely. Remember that the rope is always there; we do not conjure the snake out of nothing, and the rope is not as easily mistaken for a Cadillac. The qualities of the rope are there, hinting at the truth. So, when we probe the seemingly divided, finite, changing universe with our sense organs and instruments, we glimpse the true reality – in John's words – "shining through."

One way the undivided universe expresses itself within our perception of things being divided is by always, in John's words, "trying to come together." This tendency of things to come together, he explained, is the force we observe and call *gravity*. Space, then, is not really that which separates the many pieces of reality, but that which seems – snake-like – to divide up the one existing rope of reality.

John also asserted that since we misperceive changeless reality as always changing, we experience reality's actual changelessness as a resistance to change – in other words, as that which we call *inertia*. Thus, time is not that in which change actually happens, but that in which the changeless rope seems, snakelike, to change.

Finally, since we misperceive an infinite reality as finite, then according to John the particles making up the universe must be *electrically charged*. This is a little harder to understand, and to explain. The fundamental particle of charge, of the electron, is not a "thing" but a force. Its charge (which we call its mass) represents the amount of energy

necessary to keep the particle as small as it is. But the electron is all negative charge, and like charges always repel one another. So, there must be a positive counterforce – an electrical charge, acting against that repulsive force, holding the electron together, keeping it as small as it is. That, John said, is the Infinite "shining through" – because only when the size of the electron becomes infinite can its charge be zero. It follows that space is not that in which we actually see small things, but that in which the rope-like infinite appears, snakelike, to be small. Imagine it exploding infinitely when that force is eliminated.

I like to call these three concepts "Dobson's Laws:" that –

- Space is not that which separates the many pieces of reality, but that which seems to divide up the one reality;
- Time is not that in which change actually happens, but that in which the changeless seems to change; and
- Space is not that in which we actually see small things, but that in which the infinite appears to be small.

To Vivekananda's question, Is there evidence in our modern science of the Oneness underlying the universe? John of course answered yes. In his three laws, he formulated a relationship between the variables found by modern scientists to characterize the universe – gravity, inertia, and electricity – and the findings of ancient Indian sages through their meditative study of consciousness and sense perception. Dobson's laws were firmly rooted in modern science but entwined with the spiritual insights of the ancient Vedanta sages. Gravity, inertia, and electricity are the artifacts of Oneness, showing through our perception of reality as changing, finite, and divided.

In other words, we perceive an apparitional reality of change, finiteness, and division because we are looking at the ultimate reality, the Oneness, through the media of time, space, and causality. We see the snake. If we could apply our consciousness to remove the misperception, then we would experience reality for the Oneness it really is. We could finally see the rope itself.

To me, Dobson's interpretation of Einstein's equations is elegant and simple. For me it also implies that science based solely on observation of the physical universe, does not have the tools it needs in order to understand the whole universe including its non-physical character. It helped me overcome my uncertainties about the relationships between physics and Vedanta, but it heightened my frustration with most contemporary physicists' unwillingness to explore such relationships.

In both Vedanta and modern physics, Dobson would argue, consciousness is key to realizing the truth behind the apparition. He would say, first, that the *Brahman/Atman* is what we call consciousness. It's the rope. Second, he would say that conscious observation – by definition the work of consciousness – collapses the wavefunction, creating our misperception of the snake.

Mainstream physics, however, has for the most part set consciousness aside, and has taken the mysteries of gravity, inertia, and electricity for granted. Why don't scientists insist on examining what we take for granted? And if science does not have the tools to seek ultimate reality, why not consider other ways of looking at consciousness?

Chapter 3 Endnotes

On John Dobson: John Dobson was a great friend to Neil, Judy, and Anna. Although very much outside the scientific mainstream and expelled from his Vedanta ashram in Sacramento for spending too much time on science, he produced a substantial body of mostly unpublished literature, largely in the form of short papers and lectures. Some of these are available online.[91] He shared enough of them with Neil to fill two large, neatly indexed three-ring binders. These have been digitized and are available at https://www.nextincarnation.com. Two of his published books – Beyond Space and Time (with Ruth Ballard)[92] and The Moon is New[93] – outline his thinking in some detail but can be challenging reading despite their vernacular style. Both remain in print.

Neil continued to be inspired by John Dobson. Feeling that his old friend had opted out of the ongoing discussions of consciousness and reality, Neil created a PowerPoint presentation featuring Dobson's ideas and building on them, which he used in discussions of his and Dobson's thinking. We've consulted it heavily in editing his work.

On Thinking Mathematically: One of Neil's great strengths – which he shared with John Dobson – was a natural grasp of higher mathematics. Equations were easily comprehensible to him. We have not assumed that the reader has similar strengths, so we have avoided the use of equations and other forms of mathematical notation. For those who want to dive into the mathematics, Dobson's writings[94] and textbooks like David Bohm's Quantum Theory[95] provide plenty of food for thought.

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[91] At http://www.sidewalkastronomers.us/id56.html.

[92] Dobson & Ballard 2004.

[93] Dobson 2008.

[94] Dobson & Ballard 2004; Dobson 2008.

[95] Bohm 1951 (1989).

Richard Muller's Now: The Physics of Time[96] is a comprehensive discussion of time from a physicist's point of view – with very few equations.

On the Space Between Two Entities Being Zero: Without relying on the mathematics that simplifies descriptions of reality for physicists and engineers but often leaves the eyes of others glazed over, the reader may be able to understand Neil's point about "Einstein's correction" by reflecting on the premise that "(a)nything we observe with our five senses is not separated from us."

We perceive things by seeing, hearing, tasting, smelling, and touching them. In each case, perception does not involve direct contact with the thing perceived. Light travels to our eyes through space, across millimeters or light years, and then is transmitted to and interpreted by our brains. Touch involves the mutually repulsive interaction of the atoms making up our bodies with those making up the things touched – again interpreted by our brains as touching. It's the same with every other sense, though each involves its own mechanisms and timeframes.

Light travels to our eyes very fast – about 186,000 miles per second in a vacuum, somewhat more slowly through air, water, and other media. Sound reaches our ears much more slowly – in dry, cold air, at a bit under 770 miles per hour. And so on; the point is that some time always elapses between the event observed and our observation of it – regardless of the senses we employ or the instruments we use.

What, then, is the status of an event between the moment it occurs and the moment our brains perceive it to occur? Can we even say with certainty that the event did objectively occur "out there?" Neil, and John Dobson, and Advaita Vedanta, say "no" – or at least "not exactly." We can be certain only that what we interpret as happening "out there" occurs "in here" – in our minds, or perhaps in the universal "mind" in which all our minds

[96] Muller 2016.

participate. It exists, it occurs, but we cannot say, or show, that it takes place "out there." It's a rope that we interpret as a snake.

This obviously smacks of solipsism – the widely if not very rigorously discredited philosophical view that no one exists but oneself. "I think, therefore I am," in Descartes' famous formulation, and as a corollary, "I cannot be sure that anything or anyone other than me really is."

While solipsism has been consistently denigrated by philosophers over the years, it has never been disproved, and perhaps cannot be disproved (which of course does not make it true). In its metaphysical form – positing that in reality there is only one mind – it is virtually indistinguishable from the beliefs of Advaitists, and from the arguments of such scholars as Sir Roger Penrose (1994) and David Bohm (2002) that consciousness (Penrose) or an "implicate order" (Bohm) underlies what we perceive to be reality. Speculations by Bohm and neuroscientist Karl Pribram that perceived reality is something akin to a hologram are summarized and elaborated upon (rather uncritically and adventurously) by Michael Talbot in The Holographic Universe (2011). Bernardo Kastrup (2014), in an enlightening and entertaining exploration of idealism versus materialism, insists that the idealism he espouses is not solipsism, but the distinction he makes is something of a technical one.

On $E=mc^2$: Most textbook and on-line explanations of the equation $E=mc^2$ acknowledge that at base, it simply means that energy and matter are forms of the same thing, but they don't always explain what it doesn't mean. It doesn't mean that you can change mass into energy by somehow (if this were possible) accelerating it to the speed of light multiplied by itself (299,792,458 x 299,692,458 meters per second), or conversely that you can change energy into mass by decelerating it to the square root of lightspeed. Mass can manifest itself as energy – as we famously know from the example of an atom bomb – and energy can manifest itself as mass, but the point of the equation is their equivalence, not the mechanics of their manifestation.

The c^2 in the equation allows one to calculate the amount of energy tied up in a unit of matter.[97] The bottom line, though, is simply that although a fantastic amount of energy is knotted up in any given piece of matter, matter ultimately is energy; E=m, and m=E.[98]

On Consciousness: Sam Harris, whose book Waking Up was among those Neil read in his last months, rather airily dismisses the notion of consciousness as underlying reality:

> "Authors struggling to link spirituality to science generally pin their hopes on misunderstandings of the 'Copenhagen interpretation of quantum mechanics,' which they take as proof that consciousness plays a central role in determining the character of the physical world. If nothing is real until it is observed, consciousness cannot arise from electrochemical events in the brains of animals like ourselves; rather, it must be part of the very fabric of reality. But this simply isn't the position of mainstream physics. It is true that, according to Copenhagen, quantum mechanical systems do not behave classically until they are observed, and before that they may seem to exist in many different states simultaneously. But what counts as 'observation' under the original Copenhagen view was never clearly defined. The notion has been refined since and it has nothing to do with consciousness."[99]

Harris cites no authority for his flat "nothing to do" statement. Adam Becker, on the other hand, in his 2018 book What is Real?,[100] provides an extended and generally well-substantiated critique of the Copenhagen interpretation and the ways it has been understood and misunderstood over the years. Like Harris,

[97] See http://www.universetoday.com/114617/a-fun-way-of-understanding-emc2/ for an example using a human body as the unit.
[98] See http://www.emc2-explained.info/index.htm.
[99] Harris 2014:55.
[100] Becker, 2018.

Becker is unimpressed by the role assigned to the conscious observer/measurer by Copenhagen:

> "Copenhagen puts humans, indeed the self, at the very center of the universe, more important than anything else, just as the ancients had it, and everything else revolving around us. This is why quantum physics holds such appeal in 'alternative' circles." (Becker 2018:282).

Becker writes approvingly of the work of Bohm, but curiously neglects Bohm's proposal that an "implicate order" underlies reality and his openness to the idea that consciousness could be involved in that order (cf. Bohm & Hiley 1993:381-90). Becker's clear preference as an alternative to Copenhagen is the "many worlds" hypothesis, but with gratifying humility, he does not claim to have the last word on the matter. His perception that "Copenhagen puts humans…at the very center of the universe" (underscore added) – while it may be accurate with reference to how the Copenhagen interpretation is generally understood – assumes that only humans have consciousness. Recent research into plant and animal cognition suggests that this assumption may be unduly narrowminded, and Vedanta (like animism) imagines all of reality to be conscious – the Brahman.

4

Thinking It Through

To My Next Incarnation

In this chapter, I'm going to try to start organizing my thoughts – what I've learned from science, from Vedanta, from John Dobson and others. What does it all mean? What's really going on behind the "reality" we experience – or think we experience – in our daily lives?

A Return to India

By demonstrating a rational, science-based way to reconcile modern science and Vedanta, John Dobson inspired me to step away to some extent from my life as a businessman, an engineer, a pilot, and a family man, and take the time to reengage with Vivekananda, Indian philosophy, and consciousness as the keys to understanding the world and our place in it. I traveled again to India, on the occasion of the 1995 solar eclipse visible in large segments of that country. Because

the best location to see totality (when the sky goes dark) was projected to be the Triveni Sangam near Allahabad, that's where I went. The Triveni is a sacred spot at the confluence of three rivers, the Ganges, the Yamuna, and the mystical Sarasvati.[101] On what seemed to me at the time a whim, I decided to collect a bottle of water there during the eclipse and took it with me when I made my first visit to the Sri Sri Saradeswari Ashram[102] in Kolkata. I had recently learned about this women's monastery and, having been disillusioned by the chauvinistic attitudes I encountered at Vedantist monasteries for men, was intrigued to visit and learn more.[103]

I presented the water to the Ashram's head, Sri Bandana-Ma, who seemed surprised, and then revealed that I had miraculously completed a spiritual loop that had been predicted some time ago. The ashes of Gauri Ma, founder of the Ashram, had been scattered at the Triveni on February 25th, 1952, during an eclipse of the sun. Bandana-Ma said to me: "I have been waiting for you to come." When I invited her to visit America, she said that this was a fulfillment of another wish of hers and she readily accepted.

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[101] Dried up about 4,000 years ago, but important in Indian history and culture. See https://en.wikipedia.org/wiki/Sarasvati_River

[102] Established by Sannyasini(Nun) Sri Sri Gauri Puri Devi in 1895, at the direction of Sri Ramakrishna, especially devoted to the well-being and education of women and girls.

[103] One of the women monks at the Chicago Vedanta center, then living at the Vedanta center at Ganges, Michigan, suggested I visit. She had visited Kolkata a year or so before and serendipitously made contact with this renowned outpost of learning for women and young girls while walking the backstreets of Kolkata.

Judy adds: Neil became devoted to head nun Sri Sri Bandana-Ma, until his death treating her like a spiritual mother. I believe that he had chafed under the patriarchal order at Belur Math and in American Vedanta centers, which like Belur Math were run almost exclusively by Indian monks. He was a feminist at heart. The Ashram, and the many loving and sweetly cheerful nuns living there, to him embodied the joy of true spirituality.

Upon returning home, I became a benefactor of the Sri Sri Saradeswari Ashram. When Bandana-Ma came with several nuns to America a few years later, I accompanied her to various Vedanta centers and popular tourist attractions. I began to talk with friends about my experiences with Vedanta, science, and John Dobson. I returned to my college physics books and to the latest physics discoveries to bone up on my knowledge. And most of all, I pondered the meaning of all I had learned up until that point.

Modern science and technology have changed how we experience the world in ways that would have seemed unfathomable only a century ago. We can manipulate the atom, electricity, radio waves; we can transport ourselves through the air and across the ground using GPS and navigation instruments. All these accomplishments are based on, rely on, the principles of quantum physics – which tell us that our senses misperceive the universe. But in our day-to-day lives we don't take this characteristic of modern science seriously. Instead, we live our lives – perfectly reasonable lives, for the most part – relying on our (faulty) "common sense." We are ignoring the instruments in our airplane and operating based on assumptions no different from those of the ancient Greek philosophers.

My encounters with John Dobson led me back to pondering what lies beyond the reach of "common sense," from the standpoints of both science and Vedanta. Why is our common sense such a constant, even as science, enabling us to understand and manipulate the forces of the natural world, teaches us that it's wrong? Who is it that simultaneously comprehends science and insistently applies faulty common sense? Who is the perceiver whose perception of a particle collapses its wavefunction? And behind these questions: what is consciousness?

Conservation of Consciousness?

Pondering the three conservation laws – of energy, of matter, and of linear and angular momentum – along with Dobson's laws and the Vedanta concept of Consciousness as the Brahman/Atman Oneness underlying reality, I have come to wonder if there might be another scientific law to be formulated, that might be called "the law of conservation of consciousness." If consciousness underlies the universe we observe, then it is surely at least as fundamental as mass, energy, and momentum, so why shouldn't there be a law regarding its conservation?

The question of why Einstein's equations and quantum physics seem to be entangled with consciousness, it seems to me, should be a serious subject of study, as a fundamental philosophical challenge for our time. As yet, however, this question of meaning has mostly been avoided as being outside the scope of legitimate science. By and large, the prevailing view remains that of my engineering advisor who scoffed at me

back in 1970, "We don't ask why there's gravity, electricity, and inertia (or particles only when observed). We just take those as givens."

So, we're really just bebopping along. If you're curious and you read the scientific journals, you keep encountering these very interesting findings in subatomic physics that can't really be comprehended within a commonsense view of reality. But nobody's really taking this farther, to the conclusion that there's something very important going on underneath our scientific observations of the universe. And since so many of the odd, counterintuitive findings have to do with the Observer Effect (See Chapter 1), I think they point toward the need to examine consciousness as a real factor in the actual creation of reality. And all this tells me that science does not contradict in any way the idea of some kind of transcendent intelligence operating behind the observable universe we know.

I think a lot of people, especially in this age of computers and other digital gadgets we have to play with and amuse ourselves, think that if we just put enough computing power in one box, at some point out of it is going to emerge true consciousness. Some people involved in the computer revolution have the notion that consciousness comes out of some kind of computations that our brains have evolved to be capable of doing, so there's nothing really strange about it.

I say, *Au contraire.* There's no way we're going to get consciousness out of building an ultimate computer, and there's no way to explain consciousness based on looking at just the chemical interactions or the electromagnetic interactions or the functions of a brain in terms of what we

understand from science. I think honest scientists will admit that they don't have a clue as to the nature of consciousness and how it has evolved. So why has it evolved? If you believe in Darwinian evolution, what is it doing there? What adaptive purpose does it serve? And why do we seem to be the only species that has evolved consciousness to a point of being self-conscious?

What we know from many, many experiments beginning in the earliest days of thinking about what would become Quantum Theory, is that whether something is a particle or wave is influenced by the observer; that's the Observer Effect. But what most physicists have done is just to throw up their hands and say, "Light is a particle and a wave. Depends on how you do the experiment, what you expect; accept it and get on with your calculations." A highly unsatisfactory solution to the problem, and it's a very real problem. A photon, the basic particle of light, behaves as though it has, for lack of a better word, some kind of intelligence – some way to know what it's supposed to do based on whether it's observed and the kind of experiment being performed. Isn't that completely absurd?

In practical science we're expected to say "Okay. It's a particle and a wave. Let's move on." I say no, we shouldn't move on. We should try to figure out what's really going on – even if it takes us beyond science as it's ordinarily understood.

The plain fact is that physics and the physical sciences have not been capable of explaining the anomalies between what happens at the sub-atomic level and the way we perceive the "actual" world. The philosopher Thomas Nagel has made consciousness itself the missing component in the science we use to explain the world. While he has encountered resistance

and even ridicule from some in the scientific community, I believe he is on the right track. If our senses misperceive the world, is the fault in our senses? Our science? Or is it consciousness and faulty sense perception themselves that impede us in understanding why the world we see around us, and the world of subatomic particles, seem to follow totally different rules?

While scientists continue to dodge the issue, some people – such as Nagel, who's an atheist – are starting to ask the necessary basic questions about the nature of consciousness. Nagel is willing to stick his neck out and say, "These are important questions and science really can't solve them." He says he can't solve them either, but he points them out. And just for pointing out the questions, he gets slammed by the academic and scientific communities. That's how scared everybody is of delving into this world, because it takes us right smack back to the questions of what the nature of the universe is. It forces us to confront the question of whether what we think we perceive is real.

Judy adds: Here Neil talks about people being afraid to inquire into consciousness and its role in reality. That's true, of course, particularly of academics. But at other times he wondered why so many people simply weren't interested, didn't care. Why are people content to suffer, enjoy, and then die with no thought of what's beyond other than whatever promises are held out by one's religion? It seemed obvious to him that we should want to know what this new understanding of the universe means for how we live our life, for what it means to live a moral life. After all, we idolize people like Plato, Socrates, Jesus, Newton, Galileo, and Einstein, who were interested, who did care. If such people are worth holding up as idols, why today do we scoff at the kinds of things they cared about?

These are all thorny questions, and solving thorny questions is what science is supposed to do. But most scientists say, in effect, "Don't bother with all that. We've got plenty to do without getting into the nature of the perceiver or what perception has to do with reality." Which is what the investigation of consciousness is all about.

The Implications of a Quantum, Non-Material Universe

Niels Bohr, the Danish physicist and Nobel laureate who was among Quantum Theory's discoverers, famously said, "Anyone who is not shocked by Quantum Theory has not understood it."[104] Among the shocking aspects of the theory were the Observer Effect – the fact that photons and electrons[105] act like particles or waves seemingly depending on whether they are being observed – and the instantaneous influence of particles on one another over indefinitely great distances known as "nonlocality."

Einstein soon became concerned about the picture of the world being painted by Quantum Theory – particularly nonlocality and the Observer Effect. He famously referred to nonlocality as "spooky action at a distance," and said of the Observer Effect that "I like to think the moon is there even if I

[104] As quoted by Barad (2007:254, with a footnote citing *The Philosophical Writings of Niels Bohr*,1998. See also https://en.wikiquote.org/wiki/Niels_Bohr.

[105] And, physicists have since learned, even larger things like molecules of substantial size; see Anasthawamy 2018:199.

am not looking at it."[106]

With regard to nonlocality Einstein was essentially in agreement with Aristotle, who had held that "matter cannot act where it is not." Matter, in other words, cannot interact with other matter unless it is (somehow) in contact with it either directly (as when a bat hits a baseball) or via its fields (as when a magnet's field arranges iron filings). Einstein accounted for actions at a distance solely through the light-speed or slower interaction of electromagnetic and other fields.

Newton, on the other hand, believed in action-at-a-distance without recourse to fields – which, of course, had not yet been conceived of. For Newton, every particle of matter embodied mysterious forces that attracted or repelled other particles. So, for example, every particle of the Earth attracts the apple when the apple detaches from the tree – and the sum of these attractions draws the apple towards the center of the Earth and hence to its surface – or in the apocryphal version of Newton's account, to the top of Newton's head.

Einstein believed his Field Theories superseded Newton's action-at-a-distance; that all matter-to-matter interactions at whatever distance near or far must take place through the operation of fields. The speed of such operations was strictly limited by the speed of light. So, when Quantum Theory effectively re-introduced instantaneous action-at-a-distance, Einstein strongly objected, characterizing the notion as "spooky."[107]

Einstein was convinced that Quantum Theory must be flawed; that there must be some still missing factor to explain

[106] Rosenblum and Kuttner 2011: 201.

[107] Cf. Musser 2015.

its spooky implications. Although he is regarded as the father of the modern Quantum Theory (because of his 1905 paper on the Photoelectric Effect), throughout his life he did not fully subscribe to it. On the contrary, in the 1930s he and his students Podolsky and Rosen came up with a series of thought experiments, famous today as the EPR (Einstein-Podolsky-Rosen) experiments, which he thought revealed some of Quantum Theory's flaws. He spent the latter part of his life arguing for his point of view. As experimental evidence built up supporting Quantum Theory in all its strangeness, Einstein's reputation began to suffer.

In fact, no experiment as yet – and there have been hundreds – has disproved any aspect of Quantum Theory. Quite the reverse, Quantum Theory has led to the invention of the transistor, GPS, computers, iPhones, and most other modern electronic "conveniences," to say nothing of nuclear weapons and power plants. The successful operation of all these systems further demonstrates that Quantum Theory is correct. Still, scientists are not in agreement about what it means in fields from astronomy to physics to evolutionary biology.

How are we to understand the idea that behind the observable universe is something not material but that is "really" energy? And that it might be influenced by subjective experience?

Chapter 4 Endnotes

On A Law of Conservation of Consciousness: While we haven't found any writer but Neil who has explicitly proposed a "law of conservation of consciousness," there is some online discussion

of the notion.[108] Bernard Haisch (2009), whose "God Theory" is similar in many ways to Neil's thinking, skates close to proposing that consciousness is conserved, though his theory is much more ambitious.

As noted in the endnotes to Chapter 2, there are many books and websites that explore the relationships between quantum physics and consciousness, with widely varying degrees of rigor. A quite recent and seemingly comprehensive one is Paul Levy's 2018 book, The Quantum Revelation. Dedicated to physicist John Archibald Wheeler and drawing substantially on his thinking, Levy's book is a polemic –he's sure of the truth and he spares no effort in articulating it, citing an impressive range of sources. Perhaps he's too polemical, and ranges too far afield, but he provides a lot of food for thought. To Levy, consciousness is at the very center of reality; indeed, it defines and creates reality. Quantum physics, he insists, reveals "the dreamlike nature of the universe" (p. 307).

On the other side of the ledger, in 2016 the philosopher Daniel Dennett published From Bacteria to Bach and Back: The Evolution of Minds, in which he tries to show how consciousness evolved through fairly simple processes from non-conscious matter and has nothing to do with the universe writ large. Dennett's book is clever and entertaining, but despite its 415 pages, not very convincing. Dennett consistently conflates "religion" with western European Christianity, and seems to ignore both eastern thought and post-Newtonian physics; materialism is for him the only alternative to Cartesian dualism; and he seems simplistically devoted to Aristotle's scala naturae, which – as discussed by animal cognition scientist Frans de Waal, "runs from God, the angels, and humans at the top, downward to other mammals, birds, fish, insects, and mollusks at the bottom"

[108]See http://maverickphilosopher.typepad.com/maverick_philosopher/2009/07/consciousness-and-the-conservation-of-energy.html and https://broadspeculations.com/2014/02/17/consciousness-state-of-matter/.

(de Waal 2016:12). The notion that any non-human creature could be meaningfully conscious seems quite foreign to Dennett, so it is easy for him to posit consciousness as simply an adaptation that humans have developed through the millennia. The work of scholars like De Waal put Dennett's assumptions to the test. It should be said that the work of de Waal and his colleagues also at least conditionally refutes Neil's assumption that "we seem to be the only species that has evolved consciousness to a point of being self-conscious," but we doubt if Neil would object to adjusting his thinking on this point.

For an example of the thinking of computer scientists on consciousness and how it might be achieved by artificial intelligence, see Subhash Kak, Sir Roger Penrose, & Stuart Hameroff, MD, eds: Quantum Physics of Consciousness: Contents Selected from Volumes 3 and 14, Journal of Cosmology. 2011, Cambridge, Cosmology Science Publishers.

Jim Holt's Why Does the World Exist (2012) is a romp through multiple contrasting hypotheses about the nature of reality, many of them involving the relevance of consciousness. Other writings on consciousness and physics include Lanza & Berman 2009, 2016, and Kraus 2017.

On Einstein's Dislike for Spooky Quantum Implications: There are many, many aspects and angles to the issue of nonlocality, which troubled Einstein until his death and continues to be the source of contention among physicists. For a stimulating extended discussion of the issues and optional interpretations, see George Musser's conveniently titled Spooky Action at a Distance (2015).

On Relativity Versus Newtonian Physics: Not everyone is certain that Relativity and Quantum Theory are quite correct. As one example, in 1993 the late electrodynamics specialist Peter Graneau and his son Neal published Newton versus Einstein, arguing that Einstein was wrong, and offering experimental evidence to support their point of view. Their main focus was on contrasting what they call Isaac Newton's belief in "far action" – that is, that bodies act on each other instantaneously via gravity

as a fundamental property of the universe – with Einstein's reliance on what they call "contact action" – that there has to be physical contact/communication between things (if only via their energy fields) in order for them to interact. Graneau and Graneau clearly believed in "far action," but offered no hypothesis as to how or why it happens. They simply agreed with Newton that it is fundamental to reality. And while expressing some scorn for Einstein, they were implicitly sympathetic with Quantum Theory's "spooky action at a distance."

The work of the Graneaus is typical of the "fringe" or "outsider" scholarship sympathetically discussed by Margaret Wertheim in her 2011 book, Physics on the Fringe (although they are not among her subjects). Although generally ignored by mainstream physicists, the "fringe physicists" remind us that we should be careful about adopting any theory as Gospel truth. As Wertheim puts it:

> "In the new landscape of modern physics, we are all of us in a real-life Mad Hatter's tea party, and in many ways the world we inhabit confounds common sense."[109]

Much closer to the scholarly mainstream, Adam Becker's What is Real? while it generally accepts Einstein's conclusions, rather thoroughly trashes the standard "Copenhagen interpretation" of quantum physics. Copenhagen supposes that measurement – the act of a conscious observer – is necessary to wavefunction collapse and hence to perceived reality. Most physicists and non-physicists alike – Paul Levy being an example whose book was published in the same year as Becker's – tend to accept Copenhagen without much argument, if any, but Becker provides ample reason at least to question its assumptions, if not to reject them altogether. By eliminating conscious measurement as integral to the observer effect, though, Becker seems to leave himself without much reality to which he can cling; he winds up leaning toward the "many worlds" hypothesis, which in effect has a new universe budding off every time a

[109] Wertheim 2011:91.

measurement is made. The Mad Hatter, quite likely, would be proud.

On Wheeler, Bohm, and Holographic Reality: Paul Levy's Quantum Revelation (2018) is dedicated to Wheeler and gives a great deal of attention to his thinking. The notion of "the universe as a massive hologram" was rather comprehensively and engagingly explored by Michael Talbot in his 1991 book, The Holographic Universe**.** Talbot is maddeningly credulous, giving essentially equal weight to contemporary science and thousand-year-old hearsay accounts, and the reader has to suspect that he cherry-picks his data. But that said, Holographic is a fascinating and well-referenced compendium of data from a dizzying array of fields, all suggesting that the universe we experience is something visualized but not really solid – not exactly "out there." Adding weight to his argument is that its two initial pillars of support are the works of the physicist David Bohm and the neuroscientist Karl Pribram.

Bohm, an eminent theoretician and participant in the Manhattan Project, driven out of the United States by the McCarthy witch hunts, was the author of notable works on quantum physics.[110] As Neil mentions, he posited the existence of an "implicate order" underlying reality as we experience it (the "explicate order"), and pursued a career path not entirely unlike Neil's, becoming interested in relationships between the findings of quantum physics and the wisdom of ancient India. Late in life he collaborated with the Hindu philosopher Jiddu Krishnamurti to explore these relationships.[111] As this is written, a new documentary is in production about Bohm, probably to be released in early 2020.[112]

[110] E.g. Bohm 1951; Bohm & Hiley 1993.

[111] E.g. Krishnamurti & Bohm 1985. See also http://bohmkrishnamurti.com/.

[112] See http://thebohmdocumentary.org/2014/01/.

5

Vivekananda's Legacy

"… religion does not consist in doctrines or dogmas. It is not what you read nor what dogmas you believe that is of importance, but what you Realize…The power of attaining it is within ourselves."
–Swami Vivekananda[113]

To My Next Incarnation

I don't know where you will find inspiration, or down what paths it may draw you. I don't mean to limit your choices in any way. But from what I've learned in the course of my lifetime, Vivekananda's thinking is worth your careful consideration. So, in this chapter I'll try to outline some of the key points in his teachings that I think you may want to ponder.

[113] Vivekananda 1997 (Complete Works), Vol. 5, Sayings and Utterances, https://tinyurl.com/ybmgaotr.

Vivekananda's Idea

Vivekananda was in a unique position to propose a reconciliation of modern science and spirituality when he arrived on America's shores in the 1890s. He represented a Vedantic tradition that, unlike Judeo-Christian beliefs tied to ancient sacred Scripture,[114] was open to reason and logic, wherever they led. Judging by the exhibitions of science and technology on display at the Chicago World's Fair, so, too, was American society. He felt that if an even higher form of spirituality was to thrive anywhere, it would be in a democracy based on values of equality and freedom. He admired Americans' curiosity, industriousness, and individuality, and marveled at the freedom of women – even in an age before the 20th Amendment. He felt that modern science would be the means by which the West, and the United States in particular, would come to realize that ultimate reality was unchanging, undivided, and infinite, and he set about challenging scientists like Nicola Tesla to show that this concept did not contradict modern science. Rational science would, he thought, meet and finally "shake hands" with realized spirituality.

Vivekananda's attempt to reconcile science and spirituality is all the more remarkable because his ideas anticipated Einstein's equations by a dozen years. He was so convinced by his experience of realization – and that of the ancient sages and his teacher Ramakrishna – that he predicted that science also

[114] While Vedanta is by definition and practice grounded in the Vedas, in the Upanishads and Bhagavad Gita, its essential call is upon practitioners to seek reality within themselves.

would ultimately reveal that the universe of apparent multiplicity that we observe is, in reality, a unity.

And it has.

Vivekananda set the ball in motion for reconciling modern science and spirituality but his early death, in 1902, slowed its momentum to at best a crawl. Vedanta centers were established in New York and California, and later in cities across America. But since 1965, when U.S. immigration laws were loosened and there was a huge influx of immigrants from South Asia, the centers have become dominated by Indian immigrants and have come to serve primarily as "Indian cultural centers" concentrating more on Hindu traditions than the Vedanta philosophy that Vivekananda brought to the West. Equally detrimental to the original ideal, most centers are headed by Indian swamis appointed by the Belur Math headquarters.[115] I don't think this is what Vivekananda intended.

When I went to India and received initiation in 1973, I was told that Gopesh Maharaj, a devotee and attendant of Holy Mother, the beloved wife of Sri Ramakrishna, had stated decades before that "There will be no Vedanta in America until Americans are teaching it."[116] I agreed then, and still do now.

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[115] Belur Math is the Headquarters of Ramakrishna Math and Ramakrishna Mission in Kolkata, India. These twin organizations were founded by Swami Vivekananda, the chief disciple of Ramakrishna.

[116] Swami Saradeshananda, usually referred to as Gopesh Maharaj in the Ramakrishna Order, was a disciple and attendant to Sri Sarada Devi (the Holy Mother, wife of Sri Ramakrishan), and is considered a Brahmajnani (a knower of Truth). See https://www.youtube.com/watch?v=muXzzpPf9W4.

Vivekananda wanted "Vedanta for and by Americans," and that remains, I think, a worthy goal to pursue and achieve. In his voluminous writings and transcribed lectures, Vivekananda left behind a vision for Neo-Vedanta – his synthesis of ancient Vedanta and modern thought – that goes indirectly and directly to my questions about what Einstein's equations mean for a new, modern worldview, and about how we might lead meaningful lives.

Leading a Meaningful Life

> "The root of evil is in the illusion that we are bodies. This, if any, is the original sin…"
>
> "You cannot teach a child any more than you can grow a plant. All you can do is on the negative side– you can only help. It is a manifestation from within; it develops its own nature."
>
> "… we have no right to sneer at any ideal. Let everyone do the best he can for realizing his own ideal. Nor is it right that I should be judged by your standard or you by mine."[117]

To the questions that have puzzled me since college days about how to live my life, knowing that my sensory perceptions are misperceiving the universe, Vivekananda provided important insights that I think are relevant to others. In the three

[117] Vivekananda 1997 (Complete Works):Vol 1:59. See https://preview.tinyurl.com/y8j2oowu.

quotations above, Vivekananda explained the essence of Vedantist morality: striving for Knowledge, seeking inner Truth, and keeping the Ideal always alive. Morality flows directly from the realization that everyone and everything is One, that each person is divine. The goal of the moral life, Vivekananda explained, is to break through the illusion that we are bodies, to move from ignorance to understanding that we are divine and One with the universe. Until the illusion (which he suggested is the real "original sin") is removed, Vivekananda said, "this little personalized self is the cause of all my misery. This individualized self, which makes me different from all other beings, brings hatred and jealousy and misery, struggle and all other evils." From the realization that all is one flows moral action:

> "Behind everything the same divinity is existing, and out of this comes the basis of morality. Do not injure another. Love everyone as your own self, because the whole universe is One. In injuring another, I am injuring myself; in loving another, I am loving myself."[118]

Isn't this moral directive pretty much the same as in most world religions? Is it not "Do unto others as you would have them do unto you?" It is, but with a crucial distinction: Vedanta takes non-dualism literally. We are not simply "brothers" under a Divine Being; we are all One and hence we ourselves are Divine.

For his Christian audiences, Vivekananda illustrated the moral ideal in his lecture "Christ, The Messenger." In the

[118] Vivekananda 1901:12.

Sermon on the Mount, Jesus admonished his listeners, and us, to "resist not evil."[119] The same directive, Vivekananda explained, has been taught by many of the world's great spiritual teachers. It is the purest goal of non-dual Advaita Vedanta. For the individual who fully internalizes the Oneness of the universe, all sensory illusions and ignorance fall away. All distinctions – good and evil, man and cow, life and death – are obliterated. Because, remember, all is One, there is no differentiation.

Vivekananda recognized that this moral ideal seems absurd. "We all know that, if a certain number of us attempted to put that maxim fully into practice, the whole social fabric would fall to pieces, the wicked would take possession of our properties and our lives." Vivekananda acknowledged that the ideal could be lived only by a few realized souls. But that didn't lessen its truth. Each individual, moving slowly and gradually through stages of moral development, should always be mindful of the ideal to "resist not evil," but until they attain the fully realized state, Vivekananda said, their duty is to do exactly the opposite: a "man's duty is to resist evil; let him work, let him fight, let him strike straight from the shoulder. Then only, when he has gained the power to resist, will non-resistance be a virtue."[120]

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[119] The words are actually those of Jesus's Sermon on the Mount in the Gospel of Matthew 5:38-39: 38 "You have heard that it was said, 'an eye for an eye, and a tooth for a tooth.' 39 But I say to you, do not resist an evil person; but whoever slaps you on your right cheek, turn the other to him also. 40 If anyone wants to sue you and take your shirt, let him have your coat also."

[120] Vivekananda 1997 (Complete Works) Vol. 1, Karma Yoga, Chapter II "Each is Great in His Own Place' https://tinyurl.com/ybs8lkqp.

Vivekananda illustrated these stages of moral development by citing the conversation between the warrior Arjuna and his charioteer that comprises most of the *Bhagavad Gita.*

There have been a number of translations of the Gita, some of them Advaita Vedantist and others not, so it's important to look at who's commenting. But the basic story remains the same. Prince Arjuna and his charioteer, who's really Lord Krishna in disguise, drive their chariot out between two armies – the Pandava and the Kaurava – who are all lined up to fight. Arjuna is the Pandava leader, but the Kaurava army is made up of his relatives. He is distraught; he doesn't want to fight; he throws down his arms. But Krishna tells him he has to fulfill his duty as a warrior, and he explains why.

For Westerners, the first time reading the Gita is disconcerting. It's hard to understand what the heck it's about. What it's about is ashes to ashes. All this around you, Krishna says to Arjuna, and us, is dead, unreal. If you really want to lead a spiritual life, you have to do your duty, see through it, and not expect any reward, not expect any payoff. Ignore your ego. That's Karma Yoga.

That's what the Bhagavad Gita is about: Karma Yoga as a way to enlightenment. But I think what people don't like about the Gita is seeming to be told to fight. Neither does Arjuna, of course. When he puts down his arms, he says, "I should become a monk. I'm going to end up killing my brothers, sisters, friends. For what?" So he sees the vanity of it, but his conclusion is wrong.

Krishna, who is God Himself, says, You're not thinking straight, buddy. These people are all dead, but you're here to

either be a great hero or to die on the battlefield. If you shirk your duty, you'll be considered a coward and you will never make any spiritual progress. The pathway of the monk is not for you. Your whole life you've been the best warrior of your day. If you lay down your arms, what message does that send? You'll disrupt the whole scheme. You'll put doubt in people's heads. Whereas, if you do your duty with the right attitude, you'll get everything.

That's what it's about. Attitude. There's hardly any place on the planet where people don't have an ulterior motive for what they do. No matter how altruistic it looks, there's still some type of reward expected. Something that boosts the ego. Spiritual life is all about breaking the ego. Karma Yoga is one way, the other three yogas are other ways. You choose your poison.

Krishna says that Arjuna's motivation to be non-violent is not pure. It is not benevolence (resist not evil) or selfless action but self-serving fear, for his relatives if not for himself. He is weak; he is under the illusion that he is body, and so are they. Therefore, his moral duty is to fight. Karma Yoga – the spiritual path of work and duty, which in Arjuna's case includes fighting his relatives – is in fact Arjuna's path toward Enlightenment.

Vivekananda chastised as "childish" those Christian commentators who have struggled to interpret away the moral implications of Christ's comparable call to "resist not evil."[121] He gently suggested that Jesus is not understood in America, admonishing his Christian audiences to understand "resist not evil" as the revolutionary moral statement it is. But sadly, not

[121] Gospel of Matthew 5:39.

much has changed in Christian commentary on the subject since Vivekananda's day. Christian theologians still seem intent on finding "acceptable" ways to soften Jesus's words to allow us moral leeway to resist evil. Christianity doesn't have a Bhagavad Gita or a concept comparable to the Yoga pathways or to the various stages of moral development leading toward an ideal morality – which is, in fact, realizable in this life. Entreaties by modern writers like Leo Tolstoy to go back to Jesus's revolutionary message are mostly unheeded.[122] So we continue to be confused by Jesus' direction.

Paths for Moral Development

For the majority of humanity who, like Arjuna, have not achieved the highest ideal of Advaita Vedanta, the Yogas provide a variety of pathways to follow and practices to use in overcoming ignorance and revealing knowledge of the true Reality. These paths are especially suited to different personalities and spiritual needs. In his talk "Four Paths of Yoga," Vivekananda explained the character of the four paths: *Jnana* (Yoga of Knowledge), *Bhakti* (Yoga of Devotion), *Raja* (Yoga of Meditation), and *Karma* (Yoga of Work):

> "… there are various ways of attaining to this realization…Karma-Yoga is purifying the mind by means of work… Therefore, all work should be done without any desire to enjoy the fruits thereof…. Bhakti or worship or love in some form or other is the

[122] See, in particular, Tolstoy's philosophical treatise *The Kingdom of God is Within You* (1894), in which he lays out his idea of a society that adheres to Christ's message of nonviolence and nonviolent resistance.

> easiest, pleasantest, and most natural way of man… Therefore the God of love must be in some sense a human God…Râja-Yoga… addresses inquirers of all classes with or without any belief, and it is the real instrument of religious inquiry… Meditating on the meaning of these holy names [Om] while repeating them is the chief practice… Jnâna-Yoga…is divided into three parts. First: hearing the truth – that the Atman is the only reality and that everything else is Mâyâ (relativity). Second: reasoning upon this philosophy from all points of view. Third: giving up all further argumentation and realizing the truth."

While Vivekananda's teacher, Sri Ramakrishna, had declared that Bhakti Yoga was the easiest and best yoga for modern times, Vivekananda said Karma Yoga was the right path for industrious, hard-working Americans – as it was for the warrior Arjuna. Work should be carried out with detachment, selflessly, as a spiritual offering, renouncing any results or benefits of action. In his talk "Karma Yoga," he explained how it can liberate those who follow it from ignorance and illusion:

> "Every work must necessarily be a mixture of good and evil; yet we are commanded to work incessantly…The solution reached in the [Bhagavad] Gita in regard to this bondage-producing nature of work is that, if we do not attach ourselves to the work we do, it will not have any binding effect on our soul… This is the one central

> idea in the Gita: work incessantly but be not attached to it."[123]

At different stages of life, work can play distinct roles, but when practiced with detachment, each stage is equal to every other in moral value:

> "The Hindu begins life as a student; then he marries and becomes a householder; in old age he retires; and lastly he gives up the world and becomes a Sannyasin [monk]. To each of these stages of life certain duties are attached. No one of these Karma Yoga stages is intrinsically superior to another. The life of the married man is quite as great as that of the celibate who has devoted himself to religious work."[124]

A key to success in a work life lived according to Karma Yoga, as indeed in a life led according to any of the Yogas, Vivekananda said, is moral strength. Weakness, on the other hand, is the cause of immorality. How to become strong? Through self-knowledge: remember the Vedanta ideal. Tell yourself you are God: "Whatever you think, that you become. If you have to think, think good thoughts, great thoughts." Reiterating his frequent criticisms of Christian notions of the sinfulness of man, he said, "What good does it do me to say I am a sinner?" Morality is not about following rules, about obeying God's laws out of fear of punishment. It comes from inner realization of Oneness, from strength. It grows as we

[123] Vivekananda 1895-6: Karma Yoga. https://tinyurl.com/ycn2euj7, p. 28.

[124] Vivekananda 1895-6: Karma Yoga. https://tinyurl.com/ycn2euj7, pp. 12 ff.

remove the illusion and replace ignorance with knowledge. Of course, some people will fail to recognize their true nature and succumb to weakness and immoral acts, but the true moral compass always must be found within, following our own spiritual path and being strong.[125]

Vivekananda's explanation of Vedantist ideas about morality and how to live a meaningful life must have seemed liberating to his Western audiences, accustomed as they were to a Judeo-Christian God whose judgment would seal each soul's eternal fate, a belief that there is only one true path to God and that humankind is weak and sinful. Here was a philosophy that not only adhered to the highest moral principle, but that provided a variety of moral and spiritual practices to help individuals, whatever their stage in life, to rise through the various stages of moral development. I know his message was a revelation to me when I first read it. The idea that the life of the monk and that of the householder could hold equal spiritual value was an important one in my own early life when I chose marriage and work over life in a monastery. The choice wasn't either/or. Both could be true paths.

The recognition of value in any number of moral paths was an alternative to – and an implicit rebuke of – institutional Christianity. Vivekananda had been shocked at the religious chauvinism he felt, often at first hand, as he – a Hindu – traveled around the United States. Christian teachings that the

[125] Interestingly, Vivekananda spoke also of the necessity of physical strength. We should keep our bodies healthy and strong, able to withstand any physical challenges. He would criticize Indians whose abstemious habits and vegetarian diets made them both physically and spiritually weak and so unable to take on tasks with spiritual and physical energy.

only way to God was through Christ seemed to give believers the moral justification to view non-Christians as heathens consigned to oblivion or worse. How much more appalled he would be today, when religious fundamentalism and hatred borne of claims by religious institutions and their leaders that there is only one true faith – whether Jewish, Christian, Muslim, or Hindu – threaten the lives and stability of people in all corners of the world!

In contrast to the claims of exclusivity, Vedanta recognizes all religious traditions as morally relevant.[126] There is no one morality, no single correct way to explain good and evil. For some cultures, Vivekananda explained, bigamy is acceptable, for others it is anathema. Morality, he argued, is specific to each country, culture, stage in life: "The important thing is to know that there are gradations of duty and of morality – that the duty of one state of life, in one set of circumstances, will not and cannot be that of another." As critical as he was of aspects of Christian belief and religious chauvinism, Vivekananda called on Christian listeners not to reject their faith but to reclaim Christ's original teachings, as I explain below. Our duty towards others, Vivekananda explained, is not to declare there is only one way to truth but "to encourage everyone in his struggle to live up to his own highest ideal, and strive at the same time to make the ideal as near as possible to the truth." These words should be recognized as a moral ideal for our own time as well.

[126] Vivekananda's guru Ramakrishna is said to have experimented with Christianity and Islam and concluded that these and other spiritual paths also lead to enlightenment.

Worship of God in Man[127]

"We are the servants of that God who
by the ignorant is called man."
–Swami Vivekananda[128]

In his concept of "worship of God in man" Vivekananda brought together the best of East and West as he saw it. In essence, he sought to create a new spiritual discipline suited to Neo-Vedanta and modern needs – a modern Yoga. He admired the hard-working spirit of Americans and their generous philanthropy and charitable services for the poor. But he warned that for Karma Yoga (work as worship) to be a spiritual discipline, it requires detachment:

> "Let us give up all this foolish talk of doing good to the world. It is not waiting for your or my help; yet we must work and constantly do good, because it is a blessing to ourselves. That is the only way we can become perfect."

And he cautioned against misplaced charitable motives. Service to the poor is good, but know that the poor man is you:

> "The desire to do good is the highest motive power we have, if we know all the time that it is a privilege to help others. Do not stand on a high pedestal and take five cents in your hand and say, 'Here, my poor man,' but be grateful that the poor man is there, so

[127] Following common English language usage of the time, Vivekananda used the word "man" to refer to humanity regardless of gender.
[128] Vivekananda's August 9, 1895 letter to his devotee Mr. E. T. Sturdy: https://tinyurl.com/y9tqq8er.

> that by making a gift to him you are able to help yourself. It is not the receiver that is blessed, but it is the giver."[129]

While this view of service may seem to be a subtle distinction, it goes to the heart of the difference between dualistic Western religious traditions, as well as dualistic Hindu traditions, and Advaita Vedanta non-dualism. As Ramakrishna said, the purpose of service is not materialistic but spiritual, not compassion but worship: "No, no; not compassion to *Jivas* (living beings) but loving service to them as Shiva (God)!" [130]

Vivekananda explained the Vedantist concept of Worship of God in Man – a concept that is, in my view, a worthy model for development in the West – in this way:

> "It is our privilege to be allowed to be charitable, for only so can we grow. The poor man suffers that we may be helped. Let the giver kneel down and give thanks; let the receiver stand up and permit. See the Lord back of every being and give to Him. This is the gist of all worship; to be good and do good to others. He who sees God in the poor, in the weak, and in the diseased really worships; and if he sees God only in the image, his worship is but preliminary. He who has served and helped one poor man, seeing God in him, without thinking of his caste or creed or race, or

[129] Vivekananda 2017:3.

[130] Vivekananda 2017:3: "1884 Sri Ramakrishna: "How can an ordinary human being, finite and limited as he is, bestow compassion on other beings? Who is he to bestow compassion? No, no; not compassion to Jivas (living beings) but loving service to them as Shiva (God)!"

> anything, with him God is more pleased than He is with the man who sees Him only in temples."[131]

In creating the Ramakrishna Mission, Vivekananda distilled the essence of the Worship of God in Man philosophy: "the attainment of spiritual enlightenment through service to all beings, looking upon them as God." In the motto he formulated for the Mission, he combined Advaita non-dualism with the goals of "worship of God in man": "For one's own salvation and for the welfare of the world."[132]

It is relevant to understand that Vivekananda's message to India, and hence his legacy there, was different from his message to the West. In India, he is credited with having brought together hundreds of different beliefs and practices into a unified system of Hindu spirituality. He emphasized core principles and redefined the four paths or yogas – Karma Yoga (work), Bhakti Yoga (devotion), Raja Yoga (meditation), and Jnana Yoga (knowledge).[133] Rajagopalachari, the first Governor-General of independent India said of him, "Swami Vivekananda saved Hinduism and saved India. But for him, we would have lost our religion and would not have gained our freedom."[134]

At the same time, he was criticized for importing to India Western ideas of charity. Vivekananda saw the great benefits in the West of social service for the uplift of people and he wanted

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[131] Vivekananda 2017.

[132] See http://www.belurmath.org/Ideology.htm.

[133] Vivekananda 1997 (Complete Works), Vol. 8, Writings, Prose: Four Paths of Yoga; see http://www.ramakrishnavivekananda.info/vivekananda/volume_8/writings_prose/four_paths_of_yoga.htm.

[134] See Amarananda 2014.

to bring that same spirit of service to India. The monastery he established in 1895 was not only a traditional monastery but also the first Vedanta mission in India – the Ramakrisha Math and Mission – dedicated to serving God in the poor and outcast. But traditionally, Hindu monks did not do this kind of service. Vivekananda said it would take a thousand years to overcome the ancient and deep-seated religious and cultural traditions, the myriad Hindu gods and religious practices, and the strict caste system. He thought that the democratic, free-thinking, and rational West was more fertile ground for creating a new, modernized Vedanta that would bring together the best of the East and the West.

The Religion of the Future?[135]

"No book, no person, no personal God."
–Swami Vivekananda[136]

Vivekananda originally came to America to raise funds for his future Math (monastery) in India. But following the 1893 World's Parliament of Religions and the World's Fair in Chicago, he began to formulate his larger message of reconciling Eastern spirituality and Western rational, technological, and scientific inquiry. Seven years later, after traveling through the cities of America and Europe lecturing on Vedanta and meeting with scientists and religious leaders, he formulated a vision for a universal future religion. He laid

[135] Vivekananda 1997 (Complete Works) Vol. 8, Lectures and Discourses; Is Vedanta The Future Religion? https://tinyurl.com/y7mysyb5.
[136] Vivekananda 1997 (Complete Works), https://tinyurl.com/y7mysyb5.

out his vision in a talk entitled "Is Vedanta The Future Religion," delivered in San Francisco on April 8, 1900.

Vedanta, he said, "teaches the God that is in everyone," – without the need for, or reliance on, sacred texts and divine incarnations that too often are the cause for disagreement and discord among different religious traditions. His vision was of nothing less than a world community devoted to the highest form of Vedanta, non-dualistic Advaita Vedanta. To get there would require a coming together of the ancient philosophy of the East (updated to the modern era) and Western reason, science, technology, and democratic equality and freedom. He felt that the West could benefit from the spiritual insights of Vedanta, even as the East could benefit from the West's strong work ethic, organizational skills, social equality, and relative freedom from cultural and religious bias.

Vivekananda opened his remarks in San Francisco by acknowledging the challenge:

> "Vedanta is the most ancient religion of the world; but it can never be said to have become popular. Therefore, the question 'Is it going to be the religion of the future?' is very difficult to answer."[137]

He envisioned a religion that would rise above the irrationality, dogmatism, and chauvinism of traditional religions. This religion would espouse the underlying unity and Oneness of the universe, in which all beings would recognize that they are one spirit. None of its principles would be incompatible with reason, logic, or science. This vision was so lofty that

[137] Vivekananda 1997 (Complete Works), https://tinyurl.com/67qfazk.

Vivekananda realized it could take thousands of years to achieve:

> "If Vedanta – this conscious knowledge that all is one spirit – spreads, the whole of humanity will become spiritual. But is it possible? I do not know. Not within thousands of years. The old superstitions must run out."

Vivekananda described the formidable challenge ahead for a universal Vedanta by comparing the "old superstitions" with Vedanta. Popular dualistic religions, he said, were characterized by certain ultimately unnecessary elements. First, there is a book, "the Center round which human allegiance gathers." Second, there is veneration for some person, a great Teacher such as Buddha or an incarnation such as Jesus Christ. Third, to be strong and sure of itself, this kind of religion must believe that it alone holds the Truth. Vedanta, however, does not hold to any of these tenets.

At the end of his San Francisco talk "Is Vedanta the Future World Religion?" Vivekananda spoke of his vision as an experiment:

> "I am the servant of a man who has passed away [Sri Ramakrishna]. I am only the messenger. I want to make the experiment. The teachings of Vedanta I have told you about were never really experimented with before. Although Vedanta is the oldest philosophy in the world, it has always become mixed up with superstitions and everything else."

As you'll recall, Vivekananda explained that Vedanta has "no book, no person, no personal God." Vedanta "denies emphatically that any one book can contain all the truths about

God, soul, the ultimate reality." Furthermore, in Vedanta "Not one man or woman has ever become the object of worship … A man is no more worthy of worship than any bird, any worm…I am exactly the same as the lowest worm." And above all, God is not a separate being, not a king sitting on a throne to be feared and propitiated, not the God of the Jews or Christians. "Vedanta teaches the God that is in everyone, has become everyone and everything."

Vedantist morality is living with the understanding of the Oneness of the universe – all creatures, all creation, across all time and space. Vedanta "formulates, not universal brotherhood, but universal Oneness. I am the same as any other man, as any animal – good, bad, anything. It is one body, one mind, one soul throughout." Death is of no consequence but is simply another element of Oneness. The individual's "spirit never dies. There is no death anywhere, not even for the body. Not even the mind dies…The universe is my body. See how it continues. All minds are mine. With all feet I walk. Through all mouths I speak. In everybody I reside."

Vedanta worship also embodies this Oneness. In contrast to the temples and churches of popular religion, in Vedanta "There is but one temple – the body," Vivekananda said. This embodies the philosophical and spiritual underpinnings for Vivekananda's concept of "Worship of God in Man:"

> "You are the Personal God. Just now I am worshipping you. This is the greatest prayer. Worship the whole world in that sense – by serving it. This standing on a high platform, I know, does not appear like worship. But if it is service, it is worship."

It is this concept that Vivekananda embedded in the motto for the Ramakrishna Mission: "For one's own salvation, and for the welfare of the world."

At the end of his San Francisco talk, Vivekananda wondered aloud where the Vedanta ideal could take hold and grow. How could Vedanta, with its emphasis on the infinite principle of God embodied in every one of us, gain a world following? How to get rid of the old idea of God the majestic king who sits enthroned above the clouds? India, Vivekananda said, "cannot give up his majesty the king of the earth." Vedanta could become the religion of the United States, he said, "because of democracy." Americans had expelled the king and embraced the idea that all individuals are equal and free. The power and authority rests within the people, not in some king.

Vivekananda believed that his Vedantist vision of a religion with "no book, no person, no personal God" could appeal to the rational, scientific West at the turn of the 20th century, and, in particular, to independent-minded Americans. But he saw also that the Advaita non-dualist spirituality was up against long-standing religious traditions grounded in duality, doctrinal certainty and exclusivity. Without a book, without an incarnation to worship, without a special claim to truth, without a God in Heaven, what would draw people to this new religion? He didn't have an answer. But he spent his years in America and then in Europe laying the philosophical and spiritual groundwork for his vision for Vedanta. Though little known today, his writings and lectures give us the basis for examining his legacy for our own time.

With Vivekananda's death, his vision for the West lost momentum. Although there are now many Vedanta centers in the West, his concept of worshipping God in Man has not, to my knowledge, taken hold. It is certainly not widely known and practiced as a spiritual discipline particularly suited to the modern age and our work-dominated lives. Perhaps this idea could be revived and put to work as a new form of spiritual practice for women and men dissatisfied with traditional religious practices and rituals, seeking ways to live a moral life, approaching the mundane activities of life as parts of a spiritual practice.

Rational Spirituality

Vivekananda's critique of Western religion still resonates today. He railed against God-in-heaven dualism, against materialism, against over-reliance on ancient texts and irrational concepts of good and evil, original sin, and resurrection of the body. Interestingly, modern atheistic scientists echo most of Vivekananda's criticisms (materialism is a major exception). Unlike modern scientists, however, Vivekananda did not reject religion out of hand because of its limitations or errors. The proper response to superstitions or irrational religious beliefs in any tradition, he said, was simply to "throw out whatever does not fit." Vivekananda said, "I take as much of the Vedas as agrees with reason." His words went to the heart of Vedanta morality. *We simply should not base our lives on untruths.*

The example of Vedanta for the modern world, Vivekananda said, is that unlike popular religions that believe

they alone have the truth, it allowed an infinite variation in religions "because the goal is the same:"

> "As the Vedantist says in his poetical language: 'As so many rivers, having their source in different mountains, roll down, crooked or straight, and at last come into the ocean, – so, all these various creeds and religions, taking their start from different standpoints and running through crooked or straight courses, at last come unto Thee.'" [138]

In his speech to the Parliament of Religions, his message was to support and strengthen, not refute, world religious traditions:

> "…if anyone here hopes that this unity will come by the triumph of any one of the religions….to him I say: 'Brother, yours is an impossible hope.' Do I wish that the Christian would become Hindu? God forbid. Do I wish that the Hindu or Buddhist would become Christian? God forbid…each must assimilate the spirit of the others and yet preserve its individuality and grow according to its own law of growth."[139]

To his Christian audiences, he was both reassuring and provocative:

> "I do not come to convert you to a new belief. I want you to keep your own belief; I want to make the Methodist a better Methodist; the Presbyterian a

[138] Vivekananda 1997 (Complete Works): 393, https://tinyurl.com/ybmgaot.
[139] Vivekananda 1997 (Complete Works): 21, https://tinyurl.com/ybmgaot.

> better Presbyterian; the Unitarian a better Unitarian. I want to teach you to live the truth, to reveal the light within your own soul."[140]

Clearly, he had thoughts of spiritual reform in mind. In effect, he challenged his Christian audiences to launch a kind of new "Christian reformation" by returning to origins, to Jesus's life and words literally as he spoke them.

> "Christ said, 'I and my father are one', and you repeat it. Yet it has not helped mankind. For nineteen hundred years men have not understood that saying. They make Christ the saviour of men. He is God and we are worms! Similarly, in India. In every country, this sort of belief is the backbone of every sect. For thousands of years millions and millions all over the world have been taught to worship the Lord of the world, the Incarnations, the saviours, the prophets. They have been taught to consider themselves helpless, miserable creatures and to depend upon the mercy of some person or persons for salvation. There is no doubt many marvelous things in such beliefs. But even at their best, they are but kindergartens of religion, and they have helped but little."[141]

Jesus's message was quite simply a non-dualistic one that echoed Vedantist thought: "The Kingdom of Heaven is within you"[142] – not in some materialistic region above the clouds. Jesus's moral teachings set out in the Sermon on the Mount tells us that we are all One and equal – the poor, the weak, the

[140] Vivekananda 1997 (Complete Works)-: https://tinyurl.com/ybmgaot.
[141] Vivekananda 1997 (Complete Works), https://tinyurl.com/y7mysyb5.
[142] See the Gospel of Luke 17:20-21.

outcast. Christ should be understood, Vivekananda said, in a larger context of world religions. He was one of several divine incarnations or avatars; others were Krishna and Buddha before him and Sri Ramakrishna in the modern era. All four incarnations came into the world at times of moral peril. They were revolutionaries, breaking down social barriers and showing special concern for the poor, the weak, and social outcasts.

Vivekananda's challenge of Western religion's reliance on books and sacred scriptures went to the heart of the problem of authority – then, and, I would say, now in the 21st century. Superstition and irrational beliefs must be thrown out. For Vedanta, the teachings of the ancient sages were crucial, but conscious perception was the primary authority for truth and morality:

> "Of all the scriptures of the world it is the Vedas alone that declare that even the study of the Vedas is secondary. The real study is 'that by which we *realize* the Unchangeable.' And that is [only accomplished by] neither reading, nor believing, nor reasoning, but superconscious perception, or [what Vedantists call] Samâdhi."[143]

Each individual must become aware by her or his own personal realization of the ultimate reality of Oneness.

I believe Vivekananda's critique of Western religion, and his vision for a new kind of spirituality that incorporates the non-dualism of Vedanta, can resonate today with Western audiences. I think that a spirituality that does not contradict reason, that takes seriously Jesus's original non-dualist

[143] Vivekananda 1997 (Complete Works), https://tinyurl.com/y8mzz2sb.

teachings, and that seeks truth by looking within, may appeal to Christians who are abandoning church dogma and seeking a more relevant guide to spirituality. It may appeal as well to those who reject religion altogether, or who are skeptics. Many may find his denunciation of dogma refreshing and his explanation of Vedanta philosophy an intriguing way to understand reality and seek meaning in life.

Science and reason are tools that can open minds. They guided me toward my own spiritual awakening by first astonishing and confounding me, then forcing me into a larger and more complex understanding of the physical world and my (mis)perception of it.

One message Vivekananda left for Americans suggests Worship of God in Man is more relevant now than in his day. He admired the fruits of American industriousness in modern science, technology, manufacturing, and wealth but was critical of our materialism:

> "This is a great land, but I would not like to live here. Americans think too much of money. They give it preference over anything else. Your people have much to learn. When your nation is as old as ours, you will be wiser."[144]

The gap in America – and worldwide – between the rich and the poor requires a moral reckoning. Pope Francis has taken the important step of putting his moral authority behind a call for critical examination of economic inequalities. Perhaps in taking up the challenge of addressing this world-wide problem, we can bring to bear both Einstein's discoveries and Vedanta to help shape a new worldview comparable to the

[144] Vivekananda 1997 (Complete Works): https://tinyurl.com/ybmgaotr.

revolutionary changes that accompanied the discoveries of Copernicus and Darwin. Copernicus made us see ourselves as part of a larger universe, Darwin revealed our connections to the animal world. Today astronauts in space and astronomers with modern telescopes – to say nothing of physicists, all using Relativity and Quantum Theory – are helping us grasp the subtleties of our place in the universe. The tools we use can be scientific – but the issues to be addressed are moral ones, about how we know who we are and how we live our lives. Modern discoveries are pointing us toward seeing that we are all one existence, one consciousness. Arriving at answers requires a meaningful examination of consciousness.

Scientific discoveries since Vivekananda have confirmed his "prediction" that science would discover the Oneness of the universe – though neither scientists nor others seem to be widely aware of it yet. I hope others will take up John Dobson's insights and further examine them. I hope someone – perhaps my next incarnation – will find my hypothesized "Law of the Conservation of Consciousness" interesting enough to study and refine.

Quantum Theory has shown not only that the universe is bizarre but that that our very consciousness changes it as a subject of observation. Who or what then is the subject of an observation, who is the observer? Or are they the same, the One? These are questions science will continue to explore using the tools of the scientific method. And maybe in coming years, Vivekananda will again be proved correct.

Vivekananda believed that in our highly technological society, with religion discredited in the eyes of so many, it would probably be up to the scientific community to lead

future conversations about reconciling science and spirituality. He cautioned, though, that science, like religion, should be subject to careful scrutiny:

> "In olden times the churches had prestige, but today science has got it. And just as in olden times people never inquired for themselves, never studied the Bible, and so the priests had a very good opportunity to teach whatever they liked, so even now the majority of people do not study for themselves, and, at the same time, have a tremendous awe and fear before anything called scientific."

His words bring us full circle to the "truth" of science that first inspired my search for meaning in my life. Einstein's equations and Quantum Theory describe a universe most of us cannot understand. We owe it to ourselves, individually and as a world community, to look critically at both our science and our religion. Can we reconcile two different ways of knowing the universe – one through objective observation and measurement, the other through subjective realization, the deep experience of the consciousness we are?

Can science and spirituality "shake hands" for the good of humanity and construct a modern worldview that reconciles our deep commitment to science and technology, with the equally strong human impulse to know or become aware of a transcendent reality?

Perhaps in my next incarnation, I'll find out.

Chapter 5 Endnotes

On "All Is One:": In his 2016 book Now: The Physics of Time, Richard Muller – reflecting on the thinking of John Wheeler and without reference to Vedanta, speculated that:

> "Maybe … (y)our soul, when you die, moves backward in time, scatters, and becomes a forward moving soul, a different person. This happens many times. Maybe there is indeed only one soul in the universe. A nice aspect of this religion is that it doesn't require us to postulate the Golden Rule. In fact, the Golden Rule is an inevitable consequence. Whatever you do unto others, you are in fact doing unto yourself" (Muller 2016: 247-48).

On "Resist Not Evil": in the mid-20th century the Protestant theologian Reinhold Niebuhr struggled to understand "resist not evil" and came to believe that there must be two moralities, one for the individual and one for society.[145] On its website, the US Conference of Catholic Bishops seem to soften the starkness and interpret the words to mean, "do not retaliate against a person who does evil."[146] In contrast, Leo Tolstoy late in life said that he found the key to morality in these three words.[147]

On The "Little Personalized Self" as The Source of Evil: Neuroscience, like Vedanta, now seems to be saying that the individual self does not exist. For example, see Ananthaswamy 2015.

On Christianity's Lack of a Bhagavad Gita: The Christian monastic tradition is similar to the Vedantist idea of moral development. One begins as a student and a cenobite, living in a community of monks under tutelage of an abbot, and ends life, if spiritual growth has proceeded, in removing oneself to live in

[145] See Kirsch 2015.

[146] http://www.usccb.org/bible/matthew/5.

[147] Tolstoy 1894.

isolation and contemplation as a hermit.[148]

On The Four Yogas: A fuller version of this text is: "… there are various ways of attaining to this realization. These methods have the generic name of Yoga (to join, to join ourselves to our reality). These Yogas, though divided into various groups, can principally be classed into four; and as each is only a method leading indirectly to the realization of the Absolute, they are suited to different temperaments. Karma-Yoga is purifying the mind by means of work… Therefore, all work should be done without any desire to enjoy the fruits thereof…. Bhakti or worship or love in some form or other is the easiest, pleasantest, and most natural way of man… The object of Bhakti is God. Love cannot be without a subject and an object. The object of love again must be at first a being who can reciprocate our love. Therefore, the God of love must be in some sense a human God. He must be a God of love… Next is Râja-Yoga. This Yoga fits in with every one of these Yogas. It addresses inquirers of all classes with or without any belief, and it is the real instrument of religious inquiry… The chief parts are the Prânâyâma, concentration, and meditation. For those who believe in God, a symbolical name, such as Om or other sacred words received from a Guru, will be very helpful. Om is the greatest, meaning the Absolute. Meditating on the meaning of these holy names while repeating them is the chief practice… Next is Jnâna-Yoga. This is divided into three parts. First: hearing the truth – that the Atman is the only reality and that everything else is Mâyâ (relativity). Second: reasoning upon this philosophy from all points of view. Third: giving up all further argumentation and realizing the truth" (Sen 2006:195 – 197, excerpted from "Four Paths of Yoga, Written by Swami Vivekananda during his first visit to America in response

[148] See the Rule of St. Benedict, Chapter 1, "On the Kinds of Monks," http://www.gutenberg.org/files/50040/50040-h/50040-h.html#chapter-1-nl-on-the-kinds-of-monks.

to questions put by a western disciple, c. 1894. CWV: VIII: pp. 153-5.)[149]

On The Primacy of Reason: Vivekananda said: "Personally I take as much of the Vedas as agrees with reason. Parts of the Vedas are apparently contradictory. They are not considered as inspired in the Western sense of the word, but as the sum total of the knowledge of God, omniscience. This knowledge comes out at the beginning of a cycle and manifests itself; and when the cycle ends, it goes down into minute form. When the cycle is projected again, that knowledge is projected again with it. So far the theory is all right. But that only these books which are called the Vedas are His knowledge is mere sophistry. Manu[150] says in one place that that part of the Vedas which agrees with reason is the Vedas and nothing else. Many of our philosophers have taken this view"[151]

On Accommodating Multiple Religious Doctrines: Vivekananda wrote: "Another peculiar idea of the Vedanta is, that we must allow this infinite variation in religious thought, and not try to bring everybody to the same opinion, because the goal is the same; as the Vedantist says in his poetical language: 'As so many rivers, having their source in different mountains, roll down, crooked or straight, and at last come into the ocean, – so, all these various creeds and religions, taking their start from different stand-points and running through crooked or straight courses, at last come unto Thee.' As a manifestation of that, we find that this most ancient philosophy has, through its influence, directly inspired Buddhism, the first missionary religion of the world and indirectly, it has also influenced Christianity, through the

[149] https://tinyurl.com/ycgy4bvx.

[150] *Manu* has various meanings relating to interpretation of the Vedas; see https://en.wikipedia.org/wiki/Manu_(Hinduism).

[151] Vivekananda 1997 (Complete Works), Vol. 5, Sayings and Utterances #35 See https://en.wikisource.org/wiki/The_Complete_Works_of_Swami_Vivekananda/Volume_5/Sayings_and_Utterances.

Alexandrians, the Gnostics, and the European philosophers of the middle ages. And later, influencing German thought, it has produced almost a revolution in the regions of philosophy and psychology…" [152]

On "The Kingdom of God Is Within You:" For a European perspective, note that around the turn of the 20th century, Leo Tolstoy critically examined his Christian beliefs, going back directly to the words of Christ that "the Kingdom of God is within you" as the basis for his interpretation of the Oneness of humanity that underlay Christ's message. See Tolstoy 1884 and 1894.

On Jesus, Buddha, Krishna and Ramakrishna as Incarnations or Avatars: In Indian philosophy, Avatars or Incarnations appear when the world is spiraling out of moral balance and questioning the role of religion. There comes a need for re-centering. These Avatars manifest the qualities of renunciation, discrimination, compassion, and love, and establish new examples of spirituality. Sri Ramakrishna is considered by millions to be the latest Avatar. He achieved Spiritual Realization, a state of supra-consciousness in which the observable universe fell away to allow him to directly experience the Unchangeable "One without a second." He passed on the fruits of these realizations to Vivekananda.

[152] Vivekananda 1997 (Complete Works), Vol. 1, Lectures & Discourses, wikisource.org/wiki/The_Complete_Works_of_Swami_Vivekananda/Volume_1/Lectures_And_Discourses/The_Spirit_And_Influence_Of_Vedanta.

6

Can Science and Spirituality "Shake Hands?"

"The Kingdom of Heaven is within us. God is within us. He is the Soul of our souls. See Him in your own soul. That is practical religion. That is freedom."

–Swami Vivekananda[153]

To My Next Incarnation

The thinking of Swami Vivekananda has been central to my understanding of Advaita Vedanta ever since my undergraduate days. Following him, and John Dobson, I have come to believe that Vedanta and modern physics outline essentially the same view of reality; it is to be found within us.

Believing this is one thing, however, and making it into a "practical religion" is something else again. This is particularly the case when we are constantly barraged, as we were during my lifetime, with expressions of conflict between science and religion. This may be a challenge for you to consider.

[153] Vivekananda 1997 (Complete Works), Vol. 5, Sayings and Utterances: https://tinyurl.com/ybmgaotr.

Science and Consciousness

I think we are shortchanging reason and science if we don't openly acknowledge what the scientific method can and can't achieve by observation and computations alone. I also believe that we are missing an opportunity to enrich spirituality and religion if we fail to examine the spiritual implications of Einstein's revolutionary equations, and Quantum Theory's implications about consciousness. I believe that in the future new insights about consciousness will fill some of the gaps that science has not, and probably cannot, resolve, such as how we think about our moral responsibilities to one another, the natural world, death, and the existence of a transcendent reality. I think we should give serious consideration to the idea that a law of the conservation of consciousness exists, along with the other conservation laws. I believe that Vedanta and other philosophical and religious traditions can play an important role in helping us understand the moral implications of living meaningful lives within an apparitional universe.

Although he lived more than a century ago, Swami Vivekananda provided what I believe is a particularly relevant blueprint for bringing together the best of the East and the West, the spiritual and the scientific, to find answers to what it means to live a moral life in our modern times. He was uniquely qualified to distill the ancient Vedanta philosophy and create a new synthesis for modern times – what historian Amiya Sen calls "Neo-Vedanta."[154] As a realized soul, he spoke

[154] Amiya Prosad Sen is a historian specializing in modern Indian intellectual and cultural history, who has written extensively about Ramakrishna and Vivekananda, including his 2003 biography. The term

from direct experience with Vedanta wisdom and with the Oneness of ultimate reality. As a Western educated believer in reason, logic, and industriousness, he understood the power of education, science, and technology – and the willingness to work hard – to raise individuals out of poverty and help make them free. He viewed America's democratic founding principles – "all men are created equal" – as a kind of philosophical and moral precondition for the spread of his form of Vedanta, in which all individuals are equal and equally divine. He synthesized all these qualities into a new, modern spiritual discipline that combined Vedantin philosophy with service to the poor. He called it the worship of God in Man.

Now, in the 21st century, we live in an age in which science has discovered far stranger and more confounding mysteries of the universe than Vivekananda knew. Meanwhile technology is taking over our lives, and traditional Western religions are rapidly losing authority. At the same time many people are asking questions about the meaning of it all, and how we find meaning in an increasingly complicated universe. I believe that Vivekananda offers rich insights for us to use in re-examining the meaning of it all.

Vivekananda's Message to America

Today, many of us take religious pluralism for granted, and have some basic knowledge of Indian thought through physical or asana yoga and the widespread popular – if often

"Neo-Vedanta" has a substantial history, however, and a complex relationship with the history of India and the thinking of Vivekananda and others – see https://en.wikipedia.org/wiki/Neo-Vedanta.

misunderstood and materialistic – interpretations of Indian thought, particularly in the context of "self-help."[155] The influence of South Asian culture does not seem unfamiliar to many in America. At the turn of the 20th century, however, few knew much of Indian culture and its deep spiritual traditions. Vivekananda introduced Americans to the ancient Hindu sacred scriptures, to the Vedanta, but he sought to give these 4,000-year-old texts a very modern resonance.[156] The Upanishads and the Vedanta (end of the Vedas) recorded the experiences of ancient Indian sages who lived lives of renunciation and meditation, through which they discovered a unity of being.

This unity is a key concept; there is only Oneness, "One without a Second." Advaita Vedanta has at its core the idea of non-dualism, which recognizes not only that there is one true universal reality, *Brahman,* but that the individual's true self, *Atman,* is the same as *Brahman.* Those who practice Advaita Vedanta try to find and understand this truth by looking within themselves – to "Know Thyself."

> "This world is the great gymnasium where we come to make ourselves strong." –Vivekananda[157]

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[155] Type "Yoga, self-help" into your internet browser and see what amazing list of mostly superficial advice sites pop up.

[156] While Vivekananda grounded his thinking in the Vedas and Upanishads, he also insisted – as do they – that true enlightenment comes only from within. It is a measure of how thoroughly (if unconsciously) this message has been absorbed into American and world culture that Master Yoda makes the same point to Luke Skywalker while burning up the ancient Jedi library in the film *Star Wars: The Last Jedi* (2017).

[157] Vivekananda 1997 (Complete Works), Vol. 5, Sayings_and_Utterances, https://tinyurl.com/ybmgaotr

While like other Eastern spiritual traditions, Vedanta holds that the material world, *Maya,* is illusory, apparitional, it is not understood to be a meaningless or purposeless illusion. It is a "moral gymnasium" in which each individual gradually, usually through multiple reincarnated lives, dispels ignorance and attains knowledge of true Reality. The challenge of our practice in this gymnasium is to realize through direct understanding or experience that the apparition is exactly that – a misperception of the true reality hidden beneath, that the snake is really a rope. This realization sheds the veil of Maya. And reveals the Oneness behind it – Brahman. Remember (Chapter 2), that in Vedanta – unlike in Buddhism – there *is* something behind Maya; the rope is Brahman, and Brahman and Atman are the same.

Reason and logic have been my touchstones throughout my life. They underpinned my interest in science, my skepticism about religion, and my belief that in all things, scientific as well as spiritual, logic and reason must always prevail. But logic could only take me so far. It couldn't answer ***why*** the world described by Einstein's equations and Quantum Theory was so strange, and what that meant for how to live my life. My introduction to Vivekananda and Vedanta opened to me a whole other approach to the world, the contemplation of consciousness and spirituality. Where science seeks truth through observation, reason, and mathematics, Vedanta seeks it through subjective methods like meditation.

Vedanta helped me to address gaps that troubled me in scientific knowledge without requiring that I put aside reason and logic (as traditional Western religions based on sacred

texts as final arbiters of truth do). Vivekananda stressed the primacy of experience over texts: if a text defies reason and experience, then we should reject it. By looking within ourselves and examining consciousness, we – like the ancient sages, and Sri Ramakrishna and Vivekananda – can realize the Oneness underlying our misperception of the universe. To me, John Dobson demonstrated that there is no inherent contradiction between modern physics and Vedanta as practiced by Vivekananda and his followers.

The Limits of Science

"One party says thought is caused by matter, and the other says matter is caused by thought. Both statements are wrong; matter and thought are coexistent. There is a third something of which both matter and thought are products."

–Vivekananda[158]

The "shock" of Quantum Theory, as Niels Bohr put it – that the observer or subject affects the observation or object – suggests that we need to find new tools to examine the role of consciousness in what may underlie the universe. Vivekananda's synthesis of Vedanta for modern people was the mandate to look within. Consciousness was the tool with which to uncover the truth behind or underneath the universe we observe, to find what is truly real.

[158] Vivekananda 1997 (Complete Works), Vol. 5, Sayings and Utterances, https://tinyurl.com/ybmgaotr.

Science simply does not have the proper tools to examine consciousness. It's not valid to expect the study of the objective, observable universe to be able to explore something subjective and personal. Modern psychology has tried to make the study of human consciousness into a legitimate science, and some modern biologists are confident in the assumption that consciousness is a by-product of matter, of neurons firing in the brain. Based on this assumption, some believe that computers will eventually be designed to replicate human consciousness. But science can't prove that consciousness is purely a product of materialism. And it cannot answer the question of what comes first, consciousness or matter.

Advaita Vedanta, and to varying degrees every major world religious tradition, offer tools for examining the subject of consciousness – if we are open to using them. Vedanta tells us in so many words that Consciousness (non-material "Spirit") comes first, and that to discover the nature of ultimate reality we must first turn within and examine the subject – that is, *Atman,* ourselves – from within.

The ancients contended that a prerequisite for gaining these insights is philosophical clarity and morality. Unlike in science, where morality is not a factor and good science can come out of evil motives, research into consciousness and spirit – looking within – requires one to lead a moral life. In Vedanta, moral teachings and the Yogas, or spiritual paths, provide direction.

In my opinion, our thinking about what it means to be moral in our scientific and technological age could benefit from a serious conversation between science and religion. Can modern science get over its aversion to spirituality in

considering the enigma of consciousness? Can Western religion broaden its understanding of divine revelation to include, as medieval monastics did, a higher realization that comes through direct mystical experience of truth, beyond knowledge gleaned through sacred scripture (Of course Jews and Christians and Muslims will never give up their sacred texts which, after all, are the Word of God), to consider a spiritual consciousness based on reason and direct experience?

Scientists vs. Spirituality: The Challenge

In our modern technological world, science and spirituality are considered to be totally separate, and mutually antagonistic. An atheist viewpoint has now become a sort of religion (what some critics call "Scientism")[159] among highly educated and scientifically sophisticated elites, and to be more or less expected of scientists. Many people have come to the firm conclusion that "God must be dead"[160] – or that he, she, or it never existed in the first place. This view is espoused in so many words by well-known public scientists like Neil DeGrasse Tyson, Steven Weinberg, and Richard Dawkins. Weinberg has said that "religion is an insult to human dignity."[161] On the basis of such "expert scientists" who relate

[159] See https://www.aaas.org/page/what-scientism for a definition and critical discussion of scientism.

[160] See https://en.wikipedia.org/wiki/Death_of_God_theology for a discussion of God's ostensible demise.

[161] "Religion is an insult to human dignity. With or without it you would have good people doing good things and evil people doing evil things. But for good people to do evil things, that takes religion."—Steven Weinberg, in an address at the Conference on Cosmic Design, American Association for

routinely with the public, many educated people believe that science has conclusively "proved" that God is a worthless idea. Religion is okay for some, they say, but it's just no longer credible or respectable as part of a modern worldview.[162] Questions of life's meaning and morality are considered irrelevant to science.

To "win" their arguments, these public scientists set up and easily demolish straw men based on their perception of religion as "irrational." They carefully avoid acknowledging that modern science contains equally "irrational" elements – the shocking facts that matter is really energy, and that the observer, the subject, apparently influences the character of what's observed. They undermine their own certainty by what they too easily dismiss or ignore. Quantum Theory, just as much as religion, points to something not easily accessible to human reason operating underneath our observable universe. Why do we misperceive that universe? What is that underlying something? Looking at these and other questions could, I think, get beyond the science-religion divide and take us toward a serious and rational conversation about where science and spirituality might intersect.

The first charge often leveled against religion is the shameful history of the Christian Church's war against reason

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the Advancement of Science, Washington, D.C., April 1999. See https://www.facebook.com /4ffrf/posts/10154324160114728:0.

[162] Weinberg (2015:253-255), dates "true science" to the 16th and 17th centuries when religious concerns and questions no longer dictated how scientists looked at the world. Compared to the ancient and medieval world, "Modern science is impersonal, without room for supernatural intervention."

and science. The persecution of scientists by the Church starting in the 16th century constitutes a popular "founding legend" for the beginning of modern science, and in many ways rightly so. Weinberg has said, "It was essential for the discovery of science that religious ideas be divorced from the study of nature." Copernicus, Galileo, and others risked censure, excommunication, and worse for their scientific observations. Their discoveries and hypotheses were understood to contradict the authority of the Old and New Testaments, and, with them the authority of the Church and State that upheld Christian dogma. But today scientists and members of the public don't fear the Church in the least, thanks to technology's obvious successes.

The divorce that was required in the 17th and 18th century, as secular values took hold in the West, is no longer justified. On the contrary, scientists have the upper hand today, and the Catholic Church virtually acknowledges it – in running a most sophisticated astronomical observatory at the Vatican, for example, and in policies like Pope Francis's 2015 Encyclical on Climate Change. The encyclical calls for action to reduce the threat, saying:

> "A very solid scientific consensus indicates that we are presently witnessing a disturbing warming of the climatic system. ... A number of scientific studies indicate that most global warming in recent decades is due to the great concentration of greenhouse gases (carbon dioxide, methane, nitrogen oxides and

> others) released mainly as a result of human activity."[163]

This surprisingly politically engaged pope is already making significant progress in asserting on the world stage that we all need to take moral responsibility for the destructive effects of some of our science and technology.

A second claim against God, or body of evidence that there is no God at all, is that evil has existed in the world throughout history, in our time represented by such horrors as the Holocaust and continuing atrocities against humanity we see exposed every day on television. Again, Weinberg, an outspoken atheist, makes the case:

> "I don't need to argue here that the evil in the world proves that the universe is not designed, but only that there are no signs of benevolence that might have shown the hand of a designer. . . You see the problem here: If we are not yet convinced of His existence, and are looking for signs of His benevolence, then what other standards can we use?"[164]

Of course, it's hard to argue with the premise that war, hatred, illness, persecution, and death give us no evidence of a benevolent deity. The God of the Old Testament could be mean and vengeful, throwing humanity out of the Garden of Eden because Adam and Eve were disobedient; directing Abraham to sacrifice his son; torturing Job despite his righteousness. The God of the New Testament sent his only son to die a horrifying death at the hands of the Roman

[163]http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html.

[164] Weinberg 2001:240.

Empire. But what requires us to define a higher power only by the authority of the Hebrew and Christian Bibles? What requires us to look for benevolence and goodness as the primary, or sole, evidence of the existence of God or a transcendent reality? Many of the atheists' charges are not in the least relevant to non-dualistic Eastern religious traditions such as Vedanta, which provide other ways of thinking about God. Most popular scientific atheists carefully ignore religions other than Christianity.

Popular scientists too easily dismiss any and all religions as obsolete artifacts of the pre-scientific era. Modern science, they suggest, has explained the universe without the need for any transcendent power, universal intelligence or ultimate reality. But popular science carefully ignores what Quantum Theory suggests – that there is indeed something underlying the observable universe that is not yet explained. That something doesn't have to have anything to do with the Judeo-Christian God in Heaven.

If for no other reason than scientific curiosity, shouldn't there be room for exploring that something? For considering what might account for the disconnect between our perceptions of the universe and what Quantum Theory says?

I think the problem is that we don't yet have a very sophisticated view in the West of what is really going on with this universe. We think it's got to be either all mindless evolution or all directed by some old man in the sky with a beard who gets angry and makes arbitrary decisions. We conclude that no real guy in the sky would allow the evils and disasters we see, and that's as far as a lot of people go; they accept that as proof that there is nothing going on behind the

universe. It must be as cold and dark and pointless as they believe that science – as they define it – suggests.

Astronomy certainly suggests that we're just a tiny speck in a massive universe, but I don't think that's the whole story. That observation doesn't take into account the observer, the perceiver, the subject – that is, every one of us, and how we and our consciousness relate to the universe. Maybe it doesn't relate, but if Quantum Theory is to be believed, maybe it does. Science as we know it may never solve the issue of who perceives and what is perceived, because science as we know it can observe only what's observable.

It's a dilemma, and what I find fascinating is that it may be resolved by looking back to Vedanta, one of the most ancient philosophies on planet earth, evolved thousands of years ago in the general vicinity of India and still vigorous in India today. I find it highly ironic that something so ancient still has pertinence – and perhaps more than pertinence; perhaps it's essential, for people at least to understand as a guide to sorting out what might really be going on in the universe and in their own personal lives.[165]

Implications for Morality and Meaning

Throughout history, scientific discoveries have spurred revolutionary social, cultural, and moral reevaluations and

[165] "The Yoga Vasistha, one of the major texts of Vedanta…, proposes a startling idea… the ultimate reality … 'is that which we cannot imagine, but from which all imagination springs.' To me, this statement is so close to quantum reality that I keep wondering when my scientific friends will jump into the water – and discover that not only is it safe, it is familiar" (Depak Chopra in Chopra & Mlodinow 2012:291).

growth. Copernicus, Galileo, and Darwin not only had major impacts on the development of science, their discoveries also upended the conventional worldviews of their times and altered the relationships between of science and religion. These scientific revolutions eroded faith-based concepts of Truth and elevated the status of reason and logic in thinking about the human place in the universe.

I don't think we have yet digested the implications of Einstein's equations and Quantum Theory; their social and cultural impacts are yet to come. In my opinion, Einstein's equations suggest an even more significant shift than those triggered by Galileo or Darwin. Einstein not only overturned Classical Physics once and for all; despite his beliefs about the independent existence of the moon, he also undermined the validity of our "common sense" perception of the universe. Quantum Theory deepened the conflict by suggesting that the observer has an effect on the observed. Is each observer in effect the "creator" of the universe?

I believe there is real urgency to facing the implications of physics for meaning and morality, because of what science can do to and with human beings and the earth. Development of atomic weapons based on Einstein's equations, and of the exponentially even more powerful hydrogen bomb, has almost literally made humans creator and destroyers of almost God-like power – a sentiment memorialized in Robert Oppenheimer's reaction, taken from the Bhagavad-Gita, to witnessing the Trinity Nuclear explosion on July 16, 1945:

"Now, I am become Death, the destroyer of worlds."[166]

[166] See https://en.wikipedia.org/wiki/J._Robert_Oppenheimer.

In the aftermath of Hiroshima and Nagasaki, and as we go about life in possession of weapons far more destructive than those that leveled those two cities, what is our responsibility to our fellow humans, to nature? How do we evaluate the effect of the latest technological innovations – computers, cell phones, GPS, and so on – to our sense of human value and meaning? And what are the moral challenges of climate change, perhaps the most urgent existential threat of our time, to the wellbeing of our planet and all of humanity?

This is not to say there's a lack of serious public discussion of these questions. But I believe that a major overlooked question – a particularly apt one for our scientific age – is that of what Einstein's equations and quantum physics mean to them. What does our new understanding of the universe contribute to this discussion? We haven't yet taken up that question, and we should – indeed we must.

There's something missing in our culture, even though it provides us with virtually whatever we want. When we think about it, we wonder why we're so selfish, considering what we have compared to others. But the things that we have are material and are not ultimately satisfying. There's a reason for this – it's because we are not material.

We wonder – at least I've found myself wondering – why people who have very little in certain cultures are smiling, happy, getting along just fine, and are able to treat a guest like the guest is a god in their home despite having little to offer. We can't comprehend why they're not miserable. But they're somehow more in touch with who they really are. It always comes back to this notion that we really are afraid of the fact that in order to see the truth, you have to give up the stuff that's

distracting (your material goods). When you do, you may get a higher reward, which is very hard for anybody to believe.

I started asking in college about the moral implications of modern science, and I've been disappointed ever since in the fact that there seems to be little interest in such matters among both scientific and religious leaders alike. Physicists say moral questions are not relevant to their examination of the universe. Western religious leaders rely on ancient sacred texts – the Old Testament, the New Testament, the Quran – to define right behavior and action, and these can be hard – if not impossible – to relate to modern science. Certainly, there is a fundamentally timeless and universal aspect to morality – do not murder, do not steal, and so on. But these ancient texts and the traditions associated with them do not and cannot take into account the earth-shattering, revolutionary discoveries in modern science that seem to undermine basic assumptions (presumptions) about human nature itself. They don't go far enough: The teaching to "do unto others…" should conclude "because they, and you, ARE God." Spiritual traditions that are not rigidly text-based – like Vedanta – are more able to do this.

To my mind, only Eastern philosophy, and in particular Vedanta, starts from a fundamental premise about human nature that is fully consistent with Einstein's equations and Quantum Theory: that we are all one consciousness, and that ultimate reality is intimately related to that consciousness. That is why I believe Vivekananda's message is the most relevant <u>modern</u> approach for asking and answering questions about morality.

Chapter 6 Endnotes

On the "Worship of God In Man." It may be realistically said that Neil was seeking a religion – a spiritual tradition – that was compatible with his firm commitment to rationalism. The Abrahamic religions didn't suffice, but Advaita Vedanta held possibilities for him.

But Vedanta is a millennia-old philosophy that has acquired many, many accretions of tradition, myth, and customary practice from Indian culture and especially Hindu tradition. Flowers, incense, holy days, sacred places, sacred people and animals. Is it possible to conceptualize a "Neo-Vedanta" that is free of these trappings? Entirely open to the mysteries of modern science? Is such a religion needed? These may be questions for you, Neil's next incarnation, to explore.

On Vedanta and Buddhism: In some ways, Vedanta has more in common with Christian mysticism than with Buddhism, in that both believe in union with the transcendent that can be achieved in stages through prayer and meditation. Both, too, see a rope – Brahman, God – behind the snake of illusion. But while there are similarities between Vedanta and the mystics of Jewish, Christian, and Muslim traditions, the nature of the unity is fundamentally different. Western mystics seek union or communion with an eternal that is "above" human nature. This is dualism, which creates a fundamentally different moral order than non-dualistic Vedanta. In Vedanta, the union is realization that the human spirit is not sinful or material, but divine and transcendent – that Atman is Brahman.

On Monasticism: Both Eastern and Western monastic disciplines can seem so extreme as to rule out everyone but the most devoted, able and willing to live a life of renunciation and total devotion to a life of prayer and meditation. The monastic life is a philosophically pure response to belief but is certainly not for everyone. Most people have family obligations and jobs. Philosophers needed to find some middle ground to allow people outside the monastery to have access to spirituality. In medieval

European Christianity, this happened in the 11th to 14th centuries, as new forms of spirituality expanded from monastic communities to include the laity – accompanied by development of the Gothic cathedral whose luminous environment offered a mystical experience to all believers. In Hindu history, the ancient traditions of the various yogas recognize different temperaments and provided correspondingly different paths to realization.

Judy Comments On the "Moral Gymnasium:" Neil often said ruefully, "I'm no businessman," even though he owned two successful companies and managed up to 60 employees. He had some successes, plenty of frustrations, a few failures. During particularly difficult times, I'd sometimes despair but he'd seem to stay on an even keel. He'd refer to the idea of life as a "moral gymnasium," and I think it gave him comfort and a sense of purpose. I have to say, though, that I saw a similar sense of detachment in his atheist father, who never seemed fazed by business failures or personal betrayals.

The Bhagavad Gita stresses the value – in the "moral gymnasium" – of performing work without expectation of benefit. Neil would often contrast this philosophy with the popular American self-help culture, including its versions of yoga, that aim at building the self. The goal of Vedanta meditation is actually to lose the self in the larger unity.

On Which Came First: Consciousness or Matter: Materialists by self-definition express no doubt that matter came first, and that consciousness is produced by the interaction among atoms and molecules. See Daniel Dennett (2016) and Sean Carroll (2017) for examples. Robert Lanza (2009, 2016) and Paul Levy (2018) seem equally convinced that consciousness has priority, and Bernardo Kastrup (2014) has nothing but scorn for the materialist position. Most writers have avoided taking a firm stance on the question, and many may not regard it as relevant.

On Good and Evil: It should be noted that Vedanta concepts of good and evil are rather more nuanced than is the case among the Abrahamic religions. In the latter, the problem of evil requires reconciling belief in an omniscient, omnipotent, and omnibenevolent God with the existence of evil and suffering in the world. In contrast, Swami Abhedananda, for example, in an

1899 Vedanta Society brochure, discussed the fact that in Vedanta, good and evil are regarded as interdependent and relative:

> "Take, for instance, the nearest example. I am talking to you. Perhaps I am doing some good. At least, I intend to do so. But at the same time, I am causing the death of millions of microbes. It may be good to me, or to you, but the poor animalculae would not call it good. When we see the results of this act from our standpoint, we call it good, but if we were to look at it from the microbes' standpoint it would appear quite different, they would doubtless call it evil."[167]

On Going Beyond Science Through Vedanta: Neil never tried LSD or similar hallucinogens – marijuana was the only drug he ingested. So he said he never had the personal experience of an altered state – but wished he had. He set up an altar in a corner of his basement office, with images of Vivekananda and Ramakrishna as well as Christian icons, and would often meditate and perform puja rituals following Indian practice and the instructions of his guru.[168] These were faithful expressions of his Bhakti yoga practice. He found that meditation was tough for him. Nevertheless, he persisted.

[167] Abhedananda 1899.

[168] See https://en.wikipedia.org/wiki/Puja_(Hinduism).

7

Facing Transition

To My Next Incarnation

It's time for me to bring this narrative to a close, leave it in your – my, or our – hands to do with as you will. I hope reading it has been helpful to you, and that you'll carry on our journey to enlightenment. Here are some closing thoughts.

Death, Denial, Dualism

Being forced to look directly at what every single one of us will have to deal with at some point reinforces my belief that it's worth contemplating and thinking about the nature of the universe and our place in it. And that we shouldn't approach this contemplation with a sense of denial or the belief that science has solved it all – that science has authoritatively dismissed the idea that there's a transcendent something behind it all, under it all, beyond it all, and that's that.

At the same time, we don't need to accept the dualistic solution that Western religion has given us: God up there, separate from us. Or maybe He's in the middle, or there's some spark of Him in us, but basically He's separate. And we have to

worship Him or appease Him or glorify Him. For a scientist – or at least for this engineer – that's a totally unsatisfying solution to the problem.

Outside of Time – One Consciousness

In Vedanta, this ancient philosophy says "no, you have to go beyond that." The actual reality, underneath everything we see as the universe, is something we can call spirit, or consciousness, and that's eternal. Again, eternal doesn't mean infinite time, it's outside of time. And we don't have any concept at all of what that means.

"Eternal" and "infinite" are really beyond our comprehension; they don't just involve adding more numbers on. They're completely outside our experience. But if there is something infinite that's underneath this reality, whatever you call it, there can only be one. There can't be two infinites. So, there's only one spirit, one consciousness, and we're part of it, we are it.

That's the core of Advaita Vedanta. That's the reality. And of course, then you say, "What the heck is this that we experience, then? This isn't One. This is diverse. This is multiplicity. It's time-space and causation." And the answer comes back, "Well, it's a misperception." We are misperceiving something that's infinite, undivided, unchanging and, I would add, highly super-intelligent and playful. It's got a wicked sense of humor.

We may not appreciate that humor, because at some point it involves talking about death. But unless we see that death is the flipside of life – that you can't have one without the other

and they're a continuum – death will make no sense whatsoever.

We're too content to stop and just say, "Okay, this show is real," when in fact it isn't. Throughout history a small percentage of humanity has kept saying, "Wake up. This is not all there is. In fact, your nature is the infinite, the undivided, and the unchanging. And this is so much more spectacular than what think you're confined to, because you're free. Totally free of all limitations because you are that Oneness."

Oneness Within

It's easy to reject all this as an absurd idea. We don't experience Oneness. We see, hear, smell and taste nothing to suggest Oneness. And yet here's this ancient philosophy that insists on it. And every time a new religion is established by someone who's experienced some sort of revelation, they say – in terms that make sense to the culture and times they're in – the same thing. Look within first. Seek thee first the Kingdom of Heaven within yourself. When you find out who you are, then this will make sense. It's all within.

It's always within, and what we're doing is looking out. We are convinced that by observing, and by trying to make what's infinite finite, we'll figure it out. That isn't going to work. We have to turn back inside and examine the nature of the subject: who perceives this reality? And the sages say you can do that, everybody can do that. No exception. Because that is our nature, and in fact all of us are going to do that. Just like all of us are going to die, we're all going to figure this out.

How can that happen? Well, you can't do it in one lifetime. The Hindus – and actually early Christianity and many other religions – have this notion you come back again and again, and each time you're getting closer, hopefully, to solving the mystery. That's what's going on; that's what your life is about. You're building experiences, and for the most part it's a fun thing to participate in – until it gets nasty and there's pain or sickness or the imminence of death. When it gets nasty, we turn within, we start to ask, "Why is this happening to me? Who's behind this? What's behind this?"

I'm doing that again. I've been doing it for a long time but only in a theoretical sense. Now it's no longer theory for me. I've got a finite amount of time. There's no cure for cancer, and yet right now I'm very lucky. I have this reprieve;[169] I can sort of review backwards and see what I think, what I've experienced.

But I don't think it's a matter of somebody – me or anyone else – writing a book about what kind of an institution can solve our problems. That's because the problems, and the solution, transcend an intellectual approach. The more I look at it, the more I realize it's extremely simple and almost impossible because the world is, as Vivekananda explained, simply a big, moral gymnasium, that's all it is. It has no other meaning. God is not on anybody's side. So many times we get thrown, or I did, thinking, "Well, God would never let that happen," or "this is beyond the pale." Because we don't

[169] Having been sent home from a brief hospital stay in June 2014 to end his days with the help of Hospice, Neil tried one last-ditch treatment, then experienced a brief remission in his cancer until January 2015, after which treatment failed.

understand what we're caught in. In the Bhagavad Gita, Krishna points out to Arjuna, who's had his lapse of courage or conviction, "These people are all dead already. Just do your duty."

We don't know that we're all dead already and that in what we do, the means is what's important, not the ends. We're all trying to build a better world and we have. Everybody lives a princely life that outshines the life of the Buddha when he was a kid. His father didn't want him to experience anything negative and had the means, he thought, to protect the Buddha, Prince Siddhartha, from pain, sickness and death. That's what we try to do. We think we can protect ourselves from pain, sickness and death, and we do a pretty good job until the end and then it all comes crashing down, because nobody escapes it.

As a rationalist – a person with a deep respect for science and a lot of skepticism – I've embraced Vedanta as the best means I can find to make sense of the big mystery that science reveals to us but doesn't solve. Science examines the observable universe, using five senses, five kinds of energy. That's all it has to work with, and with that it can tell you quite a lot about what the observable universe is made of and how it works. The unanswered question is who's the observer, the perceiver? Science doesn't answer that, and can't, because we're limited to those five senses that we use to do the observing, the perceiving.

Spiritual life is about cultivating consciousness. It's about understanding how consciousness works to reveal not only the ordinary observable universe, but also the internal universe,

which is actually far grander than what we see. Far bigger and yet far smaller.

You read contradictions like this written by spiritual people and you ask, "What the hell are they talking about?" But they're right. This whole universe, 14 billion light years across, is inside your heart and head and mind.

If there's any faith that I have it's that consciousness comes first, bodies come second. Even though I've died, and my body's gone to ashes in the River Ganges, my core consciousness can't be touched. It's eternal.

I do identify with my personality, and it's painful to lose it. It's like living in the house I've shared with Judy. You don't want to leave it. It's very comfortable. It's very pretty. I like it. I don't want to leave it, but we all do so.

Nothing is Lost; All is Learning

The very fact that I'm writing this book, and imagining my next incarnation reading it, is an indication of how little I've progressed. But in Vedanta, nothing is lost, all is learning, through all our incarnations. In this life I've learned that there's no contradiction between science and the ancient idea at the core of Vedanta. That's what I want the book to show. Figuring that out is Step One. Step Two, I think, will be using that knowledge to conduct your life.

People have asked if I base my belief on Vivekananda or Ramakrishna. No, I don't base my conclusions on any authority. I can quote Vivekananda or Ramakrishna; they're guides. They've put together something that makes a lot of sense and cut away a lot of the nonsense that's centuries old

and burdens every religion. I can say now that, yes, I believe what Ramakrishna said, 100%, but Ramakrishna's authority is not why I believe what I believe. I've struggled my whole life trying to prove Ramakrishna wrong, trying to prove to myself that he was nuts. He wasn't.

In this past year, as I've had to accept the imminent reality of death, all this has taken on more urgency. A person like me can't get serious until death has a grip on him. That's what happened. All this stuff was theoretical, and there was plenty of time to think about it in the future. When it became clear that there wasn't – when I could see the clock ticking – I went back and looked at everything and said, "Oh my God. I wasn't paying attention properly and now I get it. And I do get it. And it's too late." I can't do anything for anybody else, it's only for me. Why that should be, I don't know. It seems like whatever's behind everything really doesn't want very many people to know what's really going on. My personality is such that I'd like to shout it to the world; go around, shake each person: "Don't you understand what's happening to you? You're wasting your time. You still have time. You have health, you have energy, you can sort this out, you can figure this out. I can show you."

And of course, they'd look at me and think, "This guy belongs in an insane asylum. Get away. Don't talk to me about death. That's the last thing I want to hear about."

But sometimes, the time is right. Sometimes people are ready to consider death and what it does and doesn't mean. Sometimes everyone's a Vedantist. Years ago, I was asked to give a speech at a business retreat in Minnesota. Shortly before the dinner where I was to speak, we were all out in a boat when a plane – it turned out to be one of the retreat

leaders – flew at the boat and barely missed. We were all horrified. So, I changed my speech; I spoke about death, sickness, pain, suffering. People told me they never forgot that speech.

Remember Death, Constantly

There's a saying, common among religious traditions East and West, that goes "Remember death, constantly."[170] To which people add: "Because you could be killed at any time." But that's not why. We should remember death because this life is not ultimately real. If we just live day to day, we're putting our eggs in the wrong basket. We can escape that trap if we keep an eye on death, but we don't. We insist that this life, this universe, is all that's real and don't bother me with all that other crap.

That's a mistake. The only way to conquer pain, sickness, and death is by cultivating a spiritual inner life. That's my conclusion. It was not what I thought 40 years ago, but it's what I've concluded after all these years of study. That inner life is the only way; it's what everything's really about.

If you come across somebody who claims to be spiritual and they're not smiling and uplifting, they're not spiritual, because if they're spiritual they understand they're here to

[170] This simple meditation on the inevitability of death is found in medieval Latin Christianity, Buddhism, Islam, and numerous other world traditions. https://en.wikipedia.org/wiki/Memento_mori. Judy notes that the monastic Rule of St. Benedict, which governed life at medieval Benedictine monasteries, states "keep death daily before one's eyes." (4:47) http://www.gutenberg.org/ebooks/50040.

relieve suffering. They're outside of suffering, inside a place that's happy. They want to take you there.

If I had more time on this earth there are many things I'd like to devote more time to, study more, converse with people about. I'm intrigued by the thinking of Thomas Nagel and others about what's missing from our contemporary scientific models. Does the Big Bang really make sense? What alternatives are there to it – including the one that John Dobson laid out, that the universe perpetually recycles from its observed boundaries – but others as well. I'd like to study various ideas about consciousness, exploring new fields, what we do and do not know. I'd like to probe new avenues of research and understanding.

At the popular level, I'd like to explore the increasing cross-cultural disaffection with traditional religious doctrines, and the search for deeper personal meaning in non-traditional – or very traditional – spirituality. In the U.S., of course, we have a fascination for yoga, meditation, and our vaguely defined notions of Eastern thought. Sam Harris, I recall, came to science via his exploration of consciousness, in particular Eastern meditation. I won't be able to ponder all the other writers – a burgeoning crowd even now – or to read all the new books, but I hope that in my next life I – and others – can do so, can build on what's been learned and realized.

There are so many books I'd like to read – old ones and especially new ones that relate modern science to still unexplored fields, including consciousness. Although I don't think that consciousness is by any means limited to the physical human brain, I'm intrigued by the studies of neuroscientists on how the synaptic connections in the brain

are shaped by contemplative states like yoga and meditation. I am not at all sympathetic with the arguments of people like Richard Dawkins, who deride spirituality and set up straw man fights between science and their narrow conceptions of religion. What they promote is a waste of time and emotion.

Maybe what I've thought and experienced can be of value to others because I came at it from the standpoint of science – figuring out what Einstein and the quantum theorists were saying and realizing its implications, which led me to Vedanta. I know it's a bold thing to say, but I think that anybody who follows the logic that I hope I've put together here will see the same thing, which is that science does not in any way refute the idea of an immaterial, conscious, timeless, and infinite reality behind what we experience. To me, the existence of that reality is the simplest explanation for our existence, for the universe. But that idea's not even being considered seriously, and it should be.

Perhaps considering it, and giving it the attention it deserves, and we deserve, is the challenge for you, my next incarnation.

Judy adds: On March 1, 2017, Anna and I, along with Richard Bragstad ("Ram"), Neil's monastic friend since Chicago, boarded a small boat with three attendants and a priest and scattered Neil's ashes at the Triveni Sangam near Allahabad. It is said those whose ashes are scattered here, at the confluence of the Ganges, the Yamuni, and the ancient Saraswati rivers, are liberated from the cycle of rebirth; Neil, though, had said he was pretty certain he'd be coming back. Neil had a special connection with the Triveni, dating to 1995, when he had visited the spot during the solar eclipse and taken a bottle of its sacred waters to the Sri Sri Saradeswari Ashram (See Chapter 4). After scattering Neil's ashes, we visited Bandana-Ma at the

Ashram to console her – who Neil called "Mother" – at the loss of her "dear son" and tell her that Neil had made a bequest to the ashram. (Anna and I had met Mother during our visit with Neil to Kolkata in 2011 and we had joined Neil for Skype calls with her during 2014 and 2015.) We presented her with sacred waters we had collected the day before at the Triveni and received her blessing. She passed away later in 2017.

When I look back at that last year we were recording and videotaping Neil as he put forward the ideas for this manuscript, I recall a remarkable calm and lucidity about him. He was a passionate thinker and debater throughout his life but now he seemed almost infused with singular purpose and clarity. I'm hoping one day to make publicly available the videos of his conversations for anyone who'd like to hear the questions Anna and I put to him and how his responses just seemed to flow from deep within. [Those videos can be viewed at www.nextincarnation.org.]

Chapter 7 Endnotes

On Death and Reincarnation: Advaita Vedanta and other schools of eastern philosophy assume, in Neil's words, that "you come back again and again, and each time you're getting closer, hopefully, to solving the mystery." This does not mean that each of us goes through cycles of birth and death in rigid sequence, or that each of us represents an always distinguishable "being" that goes through a multitude, even an infinite number, of personal incarnations. Each of us is Atman, and each of us is Brahman, and how we express our infinite being in each incarnation is beyond our ability to imagine – except perhaps in samadhi.

So, is Neils next incarnation with us now, wandering about in our reality, looking for this book? It's easy to say "no, he (or she) is too young; it'll be a few years before s/he is frequenting bookstores." But we have no particular reason to think that chronology as we experience it is meaningful to the reality – by definition timeless – that underlies what we see around us. Why should the rope obey the same temporal constraints as the snake

we imagine? Perhaps Neil's "next" incarnation "will be" in the time of Genghis Khan, or Akhenaten. And why should Neil's next incarnation be as a human being? Perhaps he can get closer to solving the mystery by being a bird for a while, or a tree, or a paramecium. Or someone resident on Kepler-186f.[171]

But there is some evidence that after death human beings do reincarnate at least sometimes as new human beings, sometimes in chronological sequence. Belief in personal reincarnation is widespread in human society, and apparently has been for a very long time; Lives Unlimited: Reincarnation East and West (Banerjee and Oursler 1974), describes and analyzes examples from India, America, and elsewhere. Reincarnation in World Thought (Head and Cranston 1967), is a remarkable – though perhaps dated – survey of reincarnation beliefs in some 20 world religions, as well as in western philosophy, literature, and science. In 1994 Antonia Mills and Richard Slobodin edited a substantial volume compiling studies of reincarnation beliefs among Native American populations past and present (Mills & Slobodin 1994). Some of the authors in their book take pains to distinguish between Native American beliefs and those of Hinduism and Buddhism.

It is easy enough for a skeptic to dismiss such beliefs as "just folklore," but the systematic studies carried out by the Division of Perceptual Studies at the University of Virginia are more difficult to brush off.[172] Under the leadership of the late Ian Stevenson and continuing today, the Division has carried out detailed investigations of people who claim to have had past lives, throughout the world. Stevenson's work, and that of other scholars, has been engagingly summarized in Tom Shroder's 1999 book Old Souls (Shroder 1999).

On John Dobson and The Big Bang: You can read Dobson's critique of the Big Bang at The Sidewalk Astronomers website.[173]

[171] Visit https://en.wikipedia.org/wiki/Kepler-186f.

[172] See https://med.virginia.edu/perceptual-studies/.

[173] See http://www.sidewalkastronomers.us/id170.html.

He argues that the universe is not in fact expanding from a single event (the Big Bang) but constantly renewing itself as particles "tunnel" back to the "center" from the "border." They "are made of gravity, electricity, and inertia simply because the changeless, the infinite, the undivided must show through what we see in space and time, like the length and diameter of a rope showing through the snake for which it is mistaken."

Dobson was not alone in questioning the Big Bang, despite the status of orthodoxy it has achieved in contemporary cosmology. For example, the late astronomer Halton Arp organized substantial data supporting the idea that the displacement of spectral lines toward the red end of the spectrum in radiation from distant celestial objects does not necessarily reflect a Doppler effect and hence does not indicate that the universe is expanding (See Alp 1997). A considerable group of researchers are currently (as of 2019) investigating Alp's ideas among others under the rubric of "the electric universe."[174]

On Cross-Cultural Spiritual Dissatisfaction: Neil said that he would "like to explore the increasing cross-cultural disaffection with traditional religious doctrines, and the search for deeper personal meaning in non-traditional – or very traditional – spirituality." The fact that "Millennials" in the United States and beyond are far less likely to be traditionally practicing Christians than were their parents and grandparents has been widely noted.[175] The situation is less clear with respect to non-Christian religions,[176] and some spiritual traditions, notably Buddhism, are

[174] Cf. http://www.holoscience.com/wp/synopsis/synopsis-4-what-big-bang/; http://www.holoscience.com/wp/rupert-sheldrake-on-the-electric-universe/.

[175] Cf. www.pewresearch.org/fact-tank/2016/01/08/qa-why-millennials-are-less-religious-than-older-americans/.

[176] Cf. https://www.huffingtonpost.com/james-zogby/muslim-millennials-views_b_8942060.html.

experiencing an influx of Millennial practitioners.[177] Vedanta itself offers an alternative for many dissatisfied practitioners of western religions.[178] The ancient beliefs and practices of animism, scorned and ridiculed for centuries by scientists, theologians, and philosophers alike, are gaining new respect by thoughtful researchers and advocates (cf. Narby 1998; 2005; Quinn 1994.)[179] The revival of scientific and medical interest in and respect for psychedelics as pathways both to mental health and to enlightenment (cf. Pollan 2018) may also offer possibilities for exploration. If Neil had lived to read Pollan's book, he probably would have been intrigued and wanted to do more. Neil believed and often stated that the breakthrough probably needed to be led by the scientific community, which has the status – in past times afforded religion – as the authoritative voice for our age. He may have found new possibilities for further scientific investigation in Pollan's discussion of experiments showing that psychedelics like psilocybin, LSD, and other chemicals can elicit in the mind experiences akin to mystical experiences reported in many spiritual traditions.

So, if you suspect that you may be Neil's next incarnation – or if you simply share his desire to understand what's behind this show we take to be the universe – there's work for you to do. If Neil's right – and we think he is – there's a great coiled, twisted, knotted rope of reality out there, masquerading as a snake, that's waiting for you to figure it out. In the incarnation that ended in 2015, he/you made some progress; we hope you can use this book, the website to which it's linked, and other sources like those we've noted, to help you continue the journey.

[177] Cf. https://www.unilad.co.uk/featured/how-buddhism-is-helping-more-and-more-millennials-tackle-anxiety/.

[178] Cf. https://vedantala.org/.

[179] See https://www.youtube.com/watch?v=lmhFRarkw8E).

Afterword

By Anna E. Feldman

I hope what I can add to the narrative and what I can manage to convey in this short aside – which says much and yet not enough about my dad as I knew him for the first 27 years of my life – is that he was a complex person who truly wrestled with belief like so many of us do. He had faith, yes, but he had limits to his faith that he kept seeking to break down through his practice.

My father's humanity, personality, humor, and flaws contributed as much to his ability to take us this far along his almost unbelievable path as did his intellect and passion for science and discovery. All good questions were to be explored, and if they begot more questions, good! My dad did not often let everyday things (fear of ridicule being one he cites often in the case of modern scientists) constrain him as he sought answers when he truly chose to seek them. He and Vivekananda seem to share that quality, the relentless pursuit of truth.

My father's conviction that the path of Advaita Vedanta was the way to experiencing true reality, that science and spirituality could go hand and hand, or "shake hands," that consciousness was the key to unlocking these connections was incredibly strong – almost palpable. He spoke of the looks on people's faces when he explained to them the connections between Vedanta and physics. This is due to the incredibleness of his and others' scientific and spiritual revelations, yes, but also because he had a way of conveying both the wonder and

awe of those conclusions, of sharing – no – transferring that energy and delight to others.

I think my dad made people pause and really look again at what they knew they had felt glimpses of somehow. He re-ignited some of their desires to experience spirituality that had been pushed aside without a grounding in something that made logical sense to them. (I admit myself that my amateur knowledge of this philosophy helped me both simultaneously appreciate and dismiss most of my Catholic education in a certain type of morality. Toss out that which does not make logical sense, and keep what does, right?)

I think my dad made people ask – is there more to those moments of inexplicable connection we sometimes feel, or that too-weird foreboding or dream or déjà vu, or even that lingering sense of unity that sometimes comes upon us with other people, with nature, with music, with beauty or even in moments of extreme sadness? So what does it mean that I don't observe the chair I'm sitting in as a form of energy, even if science proves that it is, that this is a failure, that this is a mistake of my senses to feel and see it as solid matter? How the heck do I begin to comprehend how Einstein's equations set the groundwork for so much of modern technology, that the products I'm using right now work based on physics that hint at a "spooky" not-easily-observed reality underlying my senses? And how do I explain to anyone what I think it means to be conscious?

Really, asks my father, when you really think about it, how on earth can all of this stuff not blow your mind?

"…And now for something completely different."

From the eulogy for my father, Neil Brian Feldman, delivered at a service and celebration at his home with family and friends. I hope you're out there reading this, Dad, and that this rings familiar to you as much as everything else that we have written in this book:

I couldn't deliver a eulogy for my father without at least one Monty Python reference. He would have wanted that – I hope.

I want to talk next about what it was like growing up with my dad, and how his personality reflected his particular brand of strangeness. He was deeply spiritual and serious, yes, but he could also be remarkably funny and irreverent.

On that note, thank you all for coming. I know he would have loved to be here. Of course, he would have said just the opposite. Had he heard that over 100 family and friends were showing up at our house today, he definitely would have said to us, "You two have fun, I'll be staying at the hotel down the street."

He was a fierce debater and a principled person who loved a good challenge, and who, I have no doubt, may have gotten into it with a few of you on many occasions. He loved to argue about what he believed in. If you thought he was quiet, much of the time he was, but you might have also missed most of his under-the-breath comments. His sense of humor was always with him, even in his last week.

From the Hitchhiker's Guide to the Galaxy:

"'Sir,' I said to the universe, 'I exist.'

'That,' said the universe, 'creates no sense of obligation in me whatsoever.'"

My dad searched for meaning and had no problem talking about it. But in reality, I think he often felt he had fallen short of fully internalizing his spirituality and he struggled with that. But his humor spoke to his knowledge of how important laughter was, how hard it was to be serious all the time, and his overall appreciation of all that was absurd in this life. He introduced me to the best of writers, philosophers, and highest of thinkers: Mel Brooks, Douglas Adams, the members of the Flying Circus, and the Marx Brothers. "Blessed are the poor in spirit," yes, but Groucho would have added, "Blessed are the cracked, for they shall let in the light."

My dad was a great father. The thing was, he really had no idea how to punish anyone. He just didn't have it in him. It was lucky for him that I didn't make much trouble. However, I remember when I was 16, he borrowed my car, opened the glove box and found certain…paraphernalia…there. I remember him calling me into his office, (his lair filled with physics books, radios, flight simulator equipment, 2-3 people's computers mid-repair, a picture of the solar eclipse and a small Indian shrine…). He held up a small bag and said, "Is this yours?" to which I naturally, horrified, stammered something about holding it for a friend. He paused sternly and said, "…Just don't keep this in your car, you could get in a lot of trouble," before he paused again and asked, "…Do you want it back?"

I'm told my dad was gone traveling for work a lot when I was growing up, but that's not what I remember. What I remember is him reading to me every night. He read me every

book from the Chronicles of Narnia, not just the fun ones. He read me the entire Adventures of Robin Hood. When I was recovering from surgery at age 14, he read me a book by Al Franken. I can't even remember what happened in any of those books, but I can so clearly see him perched on the side of the bed, reading to me.

When he was teaching me to drive, having taken over for my mom who couldn't stand it, my dad handed me the Jeep manual, and said, "Here – read this." What a ridiculous thing to ask a 15-year-old to do. But that was my dad – why wouldn't you read the manual?

In grade school, the moms used to show up to serve hot lunches at my grade school – he was the only lunch line dad who showed up regularly, totally oblivious that there was anything strange about that. He guest-taught astronomy to my second-grade class and had to tell me to stop raising my hand to answer his questions. I was just so proud to have him there. No one else's dad built telescopes for fun and broke them out when the nights were clear enough.

Dad, I still have questions. What are all these gadgets hooked up to the TV? What will we all do with our broken computers now? Who will roll their eyes at Mom with me over dinner? Who will burp loudly just to bother her? I'll miss you rewashing the dishes that I've just put in the dishwasher, driving like you were on 5th Avenue in Manhattan in rush hour when we were on a quiet suburban road, and telling me it was perfect weather for the Crawling Eye or some other awful, old, ridiculous sci-fi movie creature. (Incidentally, and so you all know, the Crawling Eye comes out when it's foggy.)

How can I tell you about 27 years? I wish there were 27 more. He was one of my best friends, and he was one of the only people who will ever just, sort of, get me. There's much more I could say, but no number of anecdotes can convey that presence; deeply thoughtful, humble, ever-watchful, occasionally unreasonable and sharply critical, and always quietly amused.

"It is the emptiest and yet the fullest of all human messages: Good-bye."

– Anna Elsa Feldman, December 2018

Acknowledgement

The editor for a posthumously published memoir has an almost impossible task. Tom King achieved the impossible, in my opinion. He had never met Neil and only knew him through what he learned from me, Anna, and the videos and writings Neil left behind.

I met Tom, a prolific author of nonfiction and fiction, some years ago after reading one of his brilliantly clear-eyed books on historic preservation practice. Noting that he lived in nearby Silver Spring, I invited him for coffee to see if he could offer insight into preservation matters I was struggling with regarding the proliferation of memorials on the National Mall. Years later, a few months after Neil died, I learned from a mutual acquaintance that Tom's wife had passed away the year before. I thought maybe he was someone I could share stories with and talk about my trepidation over the enormous task ahead of editing Neil's manuscript. Neil strongly felt he needed to get his ideas down in writing so his next incarnation could pick up where he left off; I needed to get the physics and Vedanta right. So, I invited Tom to lunch.

Tom asked to read Neil's story. What he realized, as he immersed himself in Neil's thought and did more reading in physics and Vedanta, was the importance of putting together endnotes. These notes would explain to the reader the rich body of writings, some published after Neil's passing, to help inform further study and future investigations. I believe Tom's remarkable achievement makes for a multi-leveled aspect suited to Neil's inquisitive personality. It gives Neil and others who I hope will find

interest and even inspiration in his intellectual and spiritual journey a head start on building on the foundation Neil laid.

For Tom's dedication and friendship in this collaboration, and his marvelous editing skills, I am deeply grateful.

– Judy Scott Feldman

Bibliography

View Neil B. Feldman videos and transcripts at https://www.nextincarnation.com

Aczel, Amir D.
2000 *God's Equation: Einstein, Relativity, and the Expanding Universe.* London, Delta.

Abhedananda, Swami
1899 *Philosophy of Good and Evil.* New York, Vedanta Society, https://www.globalgreyebooks.com/vedanta-philosophy-philosophy-of-good-and-evil-ebook.html.

Amarananda, Swami
2014 Swami Vivekananda's Contribution to the East. *Chicago Calling* (Publication of the Vivekananda Vedanta Society of Chicago), No. 1.

Arp, Halton
1997 *Seeing Red: Redshifts, Cosmology and Academic Science.* Apeiron.

Atmarupananda, Swami
2010 *Vedanta: a Religion, a Philosophy, a Way of Life.* Hollywood, CA, Vedanta Press.

Banerjee, H.N. & Will Oursler
1974 *Lives Unlimited: Reincarnation East and West.* New York, Doubleday & Company.

Barad, Karen Michelle
2007 *Meeting the Universe Halfway*: *Quantum Physics and the Entanglement of Matter and Meaning.* Durham, NC, Duke University Press.

Barker, Nicola
2016 *The Cauliflower.* New York, Henry Holt.

Becker, Adam
2018 *What is Real? The Unfinished Quest for the Meaning of Quantum Physics.* New York, Basic Books.

Berger, D.L.
2004 *The Veil of Maya: Schopenhauer's System and Early Indian Thought.* Binghamton, New York, Global Academic Publishing.

Bohm, David

1951 *Quantum Theory*. New York, Prentice-Hall, Repub.1979, New York, Dover.

1980 *Wholeness and the Implicate Order*. New York, Routledge & Kagan, Repub. 2002. Routledge Classics.

and B.J. Hiley

1993 *The Undivided Universe: An Ontological Interpretation of Quantum Theory*. London, Routledge.

Bohr, Niels

1987 *The Philosophical Writings of Niels Bohr*. Woodbridge, CT, Ox Bow Press. https://en.wikiquote.org/wiki/Niels_Bohr.

Capra, Fritjof

1975 *The Tao of Physics: An Exploration of the Parallels Between Modern Physics and Eastern Mysticism (5th edition 2010)*. Boston, Shambhala.

Chopra, Deepak and Leonard Mlodinow

2012 *War of the Worldviews: Where Science and Spirituality Meet – and Do Not*. New York, Three Rivers Press.

Carroll, Sean

2017 The Big Picture: On the Origins of Life, Meaning, and the Universe Itself. New York, Dutton.

Dennett, Daniel C.

2017 *From Bacteria to Bach and Back: The Evolution of Minds*. New York, WW Norton and Company.

and Alvin Plantinga

2011 *Science and Religion: Are They Compatible?* Oxford, Oxford University Press.

Dobson, John

1983 *Advaita Vedanta and Modern Science*. Los Angeles, Vivekananda Vedanta Society.

1993 *The Equations of Maya*
http://quanta-gaia.org/dobson/EquationsOfMaya.html.

2002 A Brief History of Cosmology.
http://www.sidewalkastronomers.us/id80.html.

2008 *The Moon is New: Time Comes In with a Minus Sign*. Los Angeles, Berbeo Publishing.

and Ruth Ballard
2004 *Beyond Space and Time*. Temple Universal Publishing. Previously published (1983) as *Advaita Vedanta and Modern Science.*
Douglas-Klotz, Neil
1990 *Prayers of the Cosmos: Reflections on the Original Meaning of Jesus's Words*. New York, Harper-Collins.
Einstein, Albert
1920 Ether and the Theory of Relativity. Lecture, May 5, 1920 University of Leyden. See http://zionism-israel.com/Albert_Einstein/Albert_Einstein_Ether_Relativity.htm.
1950 Letter to Robert S. Marcus, February 12, 1950, upon the death of Marcus's son. http://www.lettersofnote.com/2011/11/delusion.html.
Feynman, Richard (with Robert B. Leighton and Matthew Sands)
2011 *Feynman Lectures on Physics*. New York, Basic Books, New Millennium series.
Feldman, Neil
2013 Swami Vivekananda's Appeal in America. *American Vedantist,* http://americanvedantist.org/2013/articles/swami-vivekanandas-appeal-for-america/.
Graneau, Peter, and Neal Graneau
1993 *Newton versus Einstein: How Matter Interacts with Matter*. New York, Carlton Press.
Haisch, Bernard
2009 *The God Theory: Universes, Zero-Point Fields, and What's Behind It All.* San Francisco, Weiser.
Harris, Sam
2014 *Waking Up: A Guide to Spirituality Without Religion*. New York, Simon & Schuster.
Head, Joseph and S.L. Cranston
1967 *Reincarnation in World Thought*. New York, Julian Press.
Heisenberg, Werner
1962 *Physics and Philosophy: The Revolution in Modern Science.* New York, Harper Perennial.
1983 *Encounters with Einstein and Other Essays on People, Places, and Particles.* Princeton, University of Princeton Press.

Holt, Jim

2012 *Why Does the World Exist? An Existential Detective Story.* New York, Norton/Liveright.

Jeans, Sir James Hopwood

2017 *The Mysterious Universe* (revised 1930 edition). Aukland, Muriwai Books.

Jonas, Hans

1958 *The Gnostic Religion* (Second Edition 1963). Boston, Beacon Press.

Kak, Subhash, Sir Roger Penrose, and Stuart Hameroff (editors)

2011 *Quantum Physics of Consciousness.* Cambridge, Cosmology Science Publishers.

Kaiser, David

2012 *How the Hippies Saved Physics: Science, Counterculture, and the Quantum Revival.* New York, Norton.

Kastrup, Bernardo

2014 *Why Materialism is Baloney*. Hants, UK, Iff Books.

Khan Academy

n.d. *Indus River Valley Civilizations.* https://www.khanacademy.org/humanities/world-history/world-history-beginnings/ancient-india/a/the-indus-river-valley-civilizations.

Kripal, Jeffrey J.

1998 *Kali's Child: The Mystical and the Erotic in the Life and Teachings of Ramakrishna.* Chicago, University of Chicago Press.

Krishnamurti, J, and David Bohm

1980 *The Ending of Time: Where Philosophy and Physics Meet* (Revised & Expanded Edition 2002). New York, Harper One.

Lanza, Robert, with Bob Berman

2009 *Biocentrism: How Life and Consciousness are the Keys to Understanding the True Nature of the Universe.* Dallas, Ben Bella Books.

2016 *Beyond Biocentrism: Rethinking Time, Space, Consciousness, and the Illusion of Death.* Dallas, Ben Bella Books.

Levy, Paul

2018 *The Quantum Revelation: a Radical Synthesis of Science and Spirituality*. New York, Select Books.

Medimaging International Staff Writers
2011 Arterial Spin-Labeling MRI Demystifies Meditation, Illustrates How Meditation Reduces Pain. *Medimaging Daily News,* April 21, 2011. https://www.medimaging.net/mri/articles/294734609/arterial-spin-labeling-mri-demystifies-meditation-illustrates-how-meditation-reduces-pain.html.

Mills, Antonia, and Richard Slobodin (editors)
1994 *Amerindian Rebirth: Reincarnation Belief Among North American Indians and Inuit.* Toronto, University of Toronto press.

Muller, Richard A.
2016 *Now: The Physics of Time.* New York, Norton.

Müller, Max
1989 *Ramakrishna: His Life and Sayings.* London, Longman's Green & Company.

Nagel, Thomas
2012 *Mind & Cosmos: Why the Materialist Neo-Darwinian Conception of Nature is Almost Certainly False.* Oxford, Oxford University Press.

Narby, Jeremy
1998 *The Cosmic Serpent: DNA and the Origins of Knowledge.* New York, Jeremy P. Tarcher.
2005 *Intelligence in Nature: An Inquiry into Knowledge.* New York, Jeremy P. Tarcher

Neihardt, John G.
1979 *Black Elk Speaks: Being the Life Story of a Holy Man of the Oglala Sioux, as told through John G. Neihardt (Flaming Rainbow).* Lincoln, NE, University of Nebraska Press.

Newton, Sir Isaac
1687 *Philosophiae Naturalis Principia Mathematica.* See https://plato.stanford.edu/entries/newton-principia/.

Nikhilananda, Swami
1953 *Vivekananda: The Yogas and Other Works.* New York, Ramakrishna-Vivekananda Center.

Novella, Steven Paul
2013 Biocentrism
http://www.skepticblog.org/2013/11/25/biocentrism/.

Pagels, Elaine

1979 *The Gnostic Gospels.* New York, Random House.

2003 *Beyond Belief: The Secret Gospel of Thomas*, New York, Random House.

Penrose, Sir Roger

1994 *Shadows of the Mind: A Search for the Missing Science of Consciousness.* Oxford, Oxford University Press.

Pollan, Michael

2018 *How to Change Your Mind: What the New Science of Psychedelics Teaches Us About Consciousness, Dying, Addiction, Depression, and Transcendence.* New York, Penguin.

Quinn, Daniel

1994 *Providence: The Story of a Fifty-Year Vision Quest.* New York, Bantam.

Rajaram, N.S.

2014 Aryan Invasion: History or Politics? *Archaeology Online.* http://archaeologyonline.net/artifacts/aryan-invasion-history.

Ravindra, Ravi

2002 *Science and the Sacred: Eternal Wisdom in a Changing World.* Wheaton, IL, Quest Books.

Rosenblum, Bruce, and Fred Kuttner

2011 *Quantum Enigma: Physics Encounters Consciousness* (2nd edition). Oxford, Oxford University Press.

Rothman, Tony

2015 Was Einstein the First to Invent $E=MC^2$? *Scientific American,* April 24, 2015.

Sagan, Carl

1997 *The Demon-Haunted World: Science as a Candle in the Dark.* New York, Ballentine.

Schroder, Tom

1999 *Old Souls: the Scientific Evidence for Past Lives.* New York, Simon & Schuster.

Schrödinger, Erwin

1992 *What is Life?* Essay, with "Mind and Matter" and Autobiographical Sketches. Cambridge, Cambridge University Press.

Sen, Amiya P.

2003 *Swami Vivekananda*. New Delhi, Oxford University Press. (editor)

2006 *The Indispensable Vivekananda: An Anthology for Our Times*. Delhi, Permanent Black. https://books.google.com/books?id=usBhrZcnJ78C&printsec=frontcover#v=onepage&q&f=false.

Talbot, Michael

2011 *The Holographic Universe* (2nd edition). New York, Harper Perennial.

Tyagananda, Vrajaprana

2010 *Interpreting Ramakrishna: Kali's Child Revisited.* Delhi, Motilal Banarsidass.

Vivekananda, Swami

1895 Letter, August 9, 1895, to Mr. E. T. Sturdy: https://tinyurl.com/y9tqq8er.

1901 The Vedanta Philosophy. Address to the Graduate Philosophical Society of Harvard University, March 25, 1896. New York, Vedanta Society.

1997 *The Complete Works of Swami Vivekananda* (9 volumes). Kolkatta, Advaita Ashrama.

2017 Worship of God in Man. *Global Vedanta XX:2,* Seattle, WA.

Weinberg, Steven

2001 *Facing Up. Science and Its Cultural Adversaries*. Cambridge, Harvard University Press.

2015 *To Explain the World: The Discovery of Modern Science.* New York, HarperCollins.

Wertheim, Margaret

2011 *Physics on the Fringe*. New York, Walker and Company.

Wolf, Fred Alan

1989 *Taking the Quantum Leap: The New Physics for Non-Scientists.* New York, Harper & Rowe.

Wikipedia Pages

Adi Shankara
https://en.wikipedia.org/wiki/Adi_Shankara
God's Death, etc.
https://en.wikipedia.org/wiki/Death_of_God_theology
Kepler 186f exoplanet
https://en.wikipedia.org/wiki/Kepler-186f
Occam's Razor
https://en.wikipedia.org/wiki/Occam%27s_razor
Oppenheimer
https://en.wikipedia.org/wiki/J._Robert_Oppenheimer
Remember Death
https://en.wikipedia.org/wiki/Memento_mori
Vedanta
https://en.wikipedia.org/wiki/Puja_(Hinduism)
Vivekananda Rock Memorial
https://en.wikipedia.org/wiki/Kanyakumari#Vivekananda_Rock_Memorial

Other web pages

Animism
https://www.youtube.com/watch?v=lmhFRarkw8E
Belur Math, Kolkatta
http://www.belurmath.org/Ideology.htm.
Bohm, David
http://bohmkrishnamurti.com/
Consciousness, conservation of
http://maverickphilosopher.typepad.com/maverick_philosopher/2009/07/consciousness-and-the-conservation-of-energy.html
https://broadspeculations.com/2014/02/17/consciousness-state-of-matter/
Dobson, John
http://www.sidewalkastronomers.us/id32.html

http://www.sidewalkastronomers.us/id170.html
https://www.smithsonianmag.com/science-nature/35-who-made-a-difference-john-dobson-113799923/
http://americanhistory.si.edu/collections/search/object/nmah_1184523

$E=mC^2$
http://www.universetoday.com/114617/a-fun-way-of-understanding-emc2/
http://www.emc2-explained.info/index.htm

Electric Universe
http://www.holoscience.com/wp/synopsis/synopsis-4-what-big-bang/
http://www.holoscience.com/wp/rupert-sheldrake-on-the-electric-universe/

John Dobson and the Big Bang
http://www.sidewalkastronomers.us/id170.html

Millennials and religion
www.pewresearch.org/fact-tank/2016/01/08/qa-why-millennials-are-less-religious-than-older-americans/
https://www.huffingtonpost.com/james-zogby/muslim-millennials-views_b_8942060.html
https://www.unilad.co.uk/featured/how-buddhism-is-helping-more-and-more-millennials-tackle-anxiety/

Pythagorean theorem
http://www.purplemath.com/modules/pythagthm.htm

Pope Francis
http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html

Reincarnation studies, University of Virginia
https://med.virginia.edu/perceptual-studies/

Remember Death
http://www.gutenberg.org/ebooks/50040

Scientism, etc.
https://www.aaas.org/page/what-scientism

Swami Saradeshananda
https://www.youtube.com/watch?v=muXzzpPf9W4

Vedanta
https://independent.academia.edu/SwamiSarvapriyananda
https://en.wikipedia.org/wiki/Neo-Vedanta
http://www.vedantany.org/
https://vedantala.org/
Weinberg on evils of religion
https://www.facebook.com/4ffrf/posts/10154324160114728:0
World Religions, 1893 Parliament of
https://parliamentofreligions.org/parliament/chicago-1893
http://www.encyclopedia.chicagohistory.org/pages/1386.html
Yogas
https://philosophy.lander.edu/oriental/yoga.html
http://www.ramakrishnavivekananda.info/vivekananda/volume_8/writings_prose/four_paths_of_yagoa.htm

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To My Next Incarnation

Are you Neil Feldman's next incarnation? Do the wonders of science, or your own spiritual, meditative, psychedelic, or intellectual experiences make you think that there may be more to reality than what we routinely see, hear, taste and smell? But are you impatient with the credulous faith on which most mainstream religions are built? Do you want to explore alternative possibilities?

So did Neil. Having encountered the mind-blowing theories of Relativity and Quantum Mechanics in high school, while studying for his electrical engineering degree he grappled with what might lie under and behind their conclusions and predictions. This led him to Advaita Vedanta, the realizations of sages in ancient India, and to a life long passion for both scientific inquiry and the spiritual quest of Vedanta. Although he became a successful engineer and entrepreneur, Neil's ultimate devotion was to showing that the discoveries of modern science and the realizations of Vedanta sages both point toward the same vision of reality. He was working on explaining his thinking through writings and lectures when his life was cut short by cancer. Neil died on July 30th, 2015, but not before his wife Judy and daughter Anna captured the hours of video from which they and he extracted this book.

Neil's great fear was that when reincarnated – as he was sure he would be – he would have to start all over again and re-learn what he learned in the life that ended in 2015. He wrote this book in the hope that he would find it and learn from it, next time around. He also hoped, as do his editors, that it can inspire likeminded people who seek enlightenment in our modern world.

Feldman