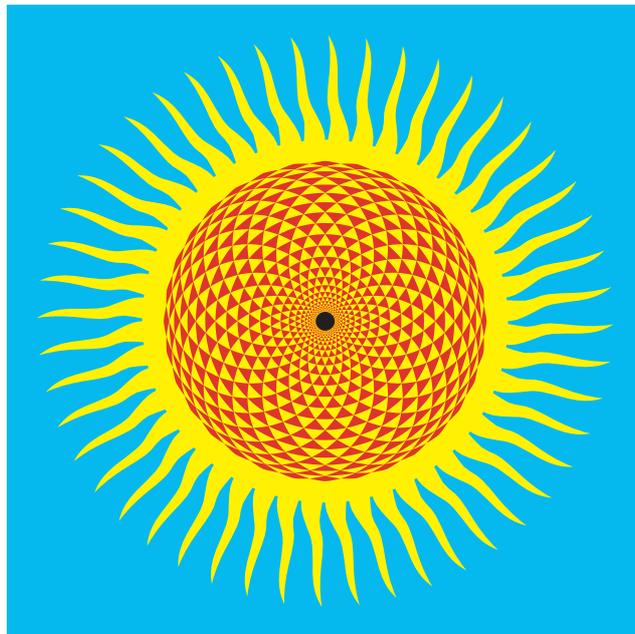




Mystical Pragmatics

Living Intelligently with Information Technology



Paul Hague

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paul at mysticalpragmatics.net
www.mysticalpragmatics.net

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Note

At the beginning of June, Ananta Kumar Giri of the Madras Institute of Development Studies kindly invited me to write an essay on 'Mystical Pragmatics', inspired by workshops he is currently holding on Practical Spirituality and Spiritual Pragmatics. As he suggested, what has become a treatise, as a summary of my life's work, is based on the architectonic of Charles Sanders Peirce, whose voluminous writings I studied in the autumn and winter of 2011 and 2012, discovering a kindred spirit. For Peirce began developing his philosophy of pragmatism, for which he is most famous, in 1878 in an article titled 'How to Make Our Ideas Clear'.

This has been the guiding principle of my entire life since I was eight years of age in 1950, when I realized that what I was being taught in religion and science did not make sense, an intuitive feeling that was confirmed over and over again as my rational education progressed. This questioning approach to learning stood me in good stead when I came to investigate the root causes of the unprecedented rate of evolutionary change being driven by scientists and technologists today, explained in outline in this treatise.

However, for this to be understood, it needs to be seen in the broader context that affects every child, woman, and man on our beautiful planet Earth. The changes currently happening in the world are the culmination of some fourteen billion years of evolutionary development since the most recent big bang. Yet, for the most part we do not understand the psychospiritual causes of all this change and hence we are not adapting to our rapidly changing environment, which we, ourselves, are creating. To live intelligently with information technology, we need to learn to think and live in a quite new way. For as Einstein famously said, you cannot solve a problem with the mindset that created it.

What this means is that the changes that my twin granddaughters will experience during the next fifty years will be greater than all the changes that have taken place during the past five thousand. So what can we do, as grandparents and parents, to help the next generations make the changes that they will need to make? Well, no doubt they will discover this for themselves, for Max Planck sadly remarked, "a new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it."

Nevertheless, the wisdom of the elders can also help, bringing the challenges our descendants will face into full perspective. John L. Petersen, founder of the Arlington Institute, has set up an Internet portal for what he sees as the World's Biggest Problems: Economic Collapse, Peak Oil, Global Water Crisis, Species Extinction, and Rapid Climate Change. However, there is an even greater challenge facing humanity today, as Martin Rees, one of the most distinguished scientists in the UK, describes in *Our Final Century: Will the Human Race Survive the Twenty-first Century?*

As Lord Rees says, we are currently facing a technology shock, where the hazards from technology could be far greater than their potential benefits. In particular, he has said, "A superintelligent machine could be the last invention humans ever make." We can compare the situation today with the threat of nuclear war in the 1950s, as he points out. Then eleven concerned scientists, led by Joseph Rotblat, signed what became known as the Russell-Einstein Manifesto, issued on 9th July 1955, containing the words, "Remember your humanity, and forget the rest." This Manifesto was followed by the first Pugwash conference on Science and World Affairs in a village in Nova Scotia in July 1957.

We need something similar today. To this end, I am currently planning to set up a new website for the Alliance for Mystical Pragmatics, with the motto 'Harmonizing Evolutionary Convergence'. However, this is not an intellectual exercise. To face today's challenges, we need human intelligence, not artificial

intelligence. To this end, in *Spirituality and Social Action: A Holistic Approach*, Vimala Thakar was much inspired by Mohandas Gandhi's *Satyagraha* 'Truth force' as a means of transforming society. Ananta Giri has been similarly inspired in *Knowledge and Human Liberation: Towards Planetary Realizations*.

In turn, Gandhi was inspired by Arjuna, the spiritual warrior in the Hindu classic *Bhagavad Gita*. This is the essence of Mystical Pragmatics, rebuilding science and business on Eastern mysticism. No other way of life is viable for humanity at the present time, as I trust will become clear as events unfold.

Abstract

In summary, the primary purpose of this treatise, as an expression of Wholeness, is to use the semantic modelling methods of information systems architects in business to answer the most critical unanswered question in science: "What is causing the pace of scientific discovery and technological invention to accelerate exponentially?" In particular, it shows how the abstract transcultural, transdisciplinary modelling methods that underlie the Internet have evolved from the architectonic logic of the polymath Charles Sanders Peirce, the founder of the philosophy of pragmatism in the nineteenth century.

This treatise then goes on to show how we could use the universal system of thought that arises from the completion of Peirce's lifework to rebuild the educational, medical, legal, economic, and political infrastructure of society in harmony with the fundamental law of the Universe, called the Principle of Unity—*Wholeness is the union of all opposites*. Heraclitus, the pre-Socratic mystical philosopher of change, aptly called this paradoxical principle the Hidden Harmony because most have rejected this irrefutable, universal truth through the ages, in favour of egoic, either-or reasoning, which only leads to delusion.

In conclusion, this essay shows why it is absolutely essential for both human ontogeny and phylogeny to recapitulate what Joseph Campbell called the Cosmogonic Cycle. For if we do not return to the Non-manifest Eternal Now in our spiritual journeys in life, we shall suffer terribly as the global economy self-destructs, missing the wonderful opportunity to realize our fullest potential as Divine, Cosmic human beings before the inevitable death of our bodies and species. As Shakyamuni Buddha said on his deathbed, "Behold, O monks, this is my last advice to you. All component things in the world are perishable. They are not lasting. Strive on with diligence."

About the author

Paul Hague was born near London in the middle of the Second World War, early disquieting experiences that led to a lifelong search for Love and Peace. After being educated mainly as a mathematician, he then spent his business career in the information technology industry, primarily with IBM in sales and marketing in London in the 1960s and 70s and in software development in Stockholm in the 1990s.

In 1980, to investigate the potential of human intelligence vis-à-vis artificial intelligence, Paul imagined that he was a computer that had the task of integrating all knowledge in all cultures and disciplines into a coherent whole without an external human designer to tell it how to do this. This thought experiment has enabled him to end the long-running war between science and religion so that there is no longer any division within him between Eastern mysticism and Western rationality.

As a consequence, evolution has become fully conscious of itself within him, carrying him to evolution's Omega Point, its glorious culmination, much as Pierre Teilhard de Chardin prophesied in *The Human Phenomenon*, published posthumously in 1955.

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Living Intelligently with Information Technology

On 6th May 1949, a team of engineers, scientists, and mathematicians, led by Maurice Wilkes, successfully ran the first program on the first practical stored-program computer at the University of Cambridge in England.¹ The Computer Age we know so well today was truly born. But what have we invented? Do the politicians, financiers, business executives, and technologists who govern and manage our practical affairs understand the long-term psychological and economic implications of this invention, which is dominating all our lives? Apparently not.

The reason why the democratically elected ruling authorities are so ignorant of what is happening to humanity at the present time is that the computer is a machine quite unlike any other that the *Homo* genus has invented during the past two thousand millennia. For unlike the flint axe, wheel, printing press, telescope, steam engine, and telephone, for instance, which extend our rather limited physical abilities, the computer is a tool of thought, able to extend the human mind, even in some cases replacing it.

So even though the accelerating power of computer hardware has arisen from discoveries in quantum physics, materialistic and mechanistic science can tell us little about what we have invented. For it is the software that determines how computers function. Similarly, it is our conscious, subconscious, and unconscious minds that mostly determine how we behave, not our brains or mutating DNA molecules.

The central issue facing humanity today is that a deep split opened up between East and West at the dawn of history and birth of civilization. The worldview that governs science, medicine, and business today was established in the Western mind some 5,000 years ago, when Babylonians in Mesopotamia began to map the skies. Helped along by Aristotle's *Physics* and Newton's *Principia*, this has led the West to believe that the Universe is the physical universe of mass, space, and time, and that all phenomena, including human behaviour, can be explained in terms of the mechanistic laws of physics.

In contrast, Rishis in the Indus Valley, who wrote the *Upanishads*, discovered a quite different Universe by looking inwards. We in the West urgently need to adopt their mystical worldview in order to live in harmony with the fundamental laws of the Universe, free of our deluded minds. Delusion mostly arises from our cultural conditioning, being taught that we are separate from the Divine, Nature, and each other, whereas our Authentic Self is Wholeness, with no divisions or borders anywhere.

So we can only solve the immense psychospiritual, ecological, and economic problems of our times through self-inquiry, an activity that religionists, scientists, and business managers alike discourage. Indeed, it is not too much of an exaggeration to say that knowing ourselves, never mind understanding ourselves, is a cultural taboo. So the many millions of spiritual seekers in the world are part of a global counter-cultural movement, which needs to become predominant if the children being born today are to have any chance of growing old enough to have children of their own.

For as Vimala Thakar points out in *Spirituality and Social Action*, an inspirational book dedicated to the quest for Wholeness:

In truth, the inner life or the psychological life is not a private or a personal thing, it's very much a social issue. The mind is a result of a collective human effort. There is not your mind and my mind, it's a human mind. It's a collective human mind, organized and standardized through centuries. The values, the norms, the criteria are patterns of

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behaviour organized in collective groups. There is nothing personal or private about them. There is nothing that could be a source of pride or embarrassment.²

Specifically, to understand the computer, we need to understand ourselves by following the maxim that seven wise men, led by Thales, the first Greek philosopher, inscribed on the temple of Apollo at Delphi: γνῶθι σεαυτόν (*gnothi seauton*) “Know thyself.”³ In other words, to intelligently manage our practical business affairs with full understanding of the creative evolutionary energies that cause us to behave as we do, we need to at least answer the question, “Who am I?”

However, answering this question just takes us to our Cosmic Soul at the Origin of the Universe. It does not enable us to answer the question, “Who are we?” explaining what is currently happening to our species. To answer this question and the other Big Questions of human existence such as “Where have we come from?” “How can we live in love, peace, and harmony with each other?” and “Where are we going?” we need to use our self-reflective Intelligence—the Divine quality that distinguishes humans from the other animals and machines, such as computers—to map the Cosmic Psyche, the 99% of the Universe inaccessible to our physical senses. In the words of Kabbalah, there is a curtain that divides our reality into two realms, 1% being our physical world, while the other 99% “is the source of all lasting fulfilment. All knowledge, wisdom, and joy dwell in this realm. This is the domain that Kabbalists call *Light*.”⁴

With such an all-inclusive map, we can then answer a question that Alan Turing, generally considered the founder of computer science, asked one year after the EDSAC (Electronic Delay Storage Automatic Calculator) ran its first program: “Can machines think?” At the time, he wrote, “I believe that at the end of the century the use of words and general educated opinion will have altered so much that one will be able to speak of machines thinking without expecting to be contradicted.”⁵

Well, this did not happen. But this has not stopped computer scientists attempting to build computers with artificial intelligence (AI), surpassing any level of intelligence that we humans might aspire to. Marvin Minsky and John McCarthy, among others, laid down the foundations of AI at the Dartmouth Conference in 1956, when the latter stated the fundamental hypothesis of AI as follows: “Every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it”.⁶ And Herbert A. Simon said in 1960, “I believe that in our time computers will be able to perform any cognitive task that a person can perform.”⁷

More recently, in 1990, the American philanthropist Hugh Loebner agreed with The Cambridge Center for Behavioral Studies in Massachusetts to underwrite a contest designed to instantiate a variation of what Turing called an ‘imitation game’ to test the hypothesis that machines can think for themselves.⁸ In this Turing Test, a human interrogator asks questions of a computer and a human trying to determine which is which from the answers. A Grand Prize of \$100,000 and a Gold Medal is to be awarded for the first computer whose responses are indistinguishable from a human’s. It is suggested that such a computer could be said ‘to think’.⁹

But what such computer scientists are ignoring is a statement that Ada Lovelace, the daughter of Lord Byron and his wife Anne, a poet and mathematician,¹⁰ respectively, made in 1843. In a brilliant memoir on Charles Babbage’s Analytical Engine, the first design for a general-purpose computer, she wrote:

The Analytical Engine has no pretensions to *originate* anything. It can do whatever we *know how to order it* to perform. It can *follow* analysis; but it has no power of *anticipating* any analytical relations or truths. Its province is to assist us in making *available* what we are already acquainted with.¹¹

Yes, indeed! The key point about the stored-program computer is that, based on a design proposed by John von Neumann,¹² its programs are stored in the main memory of the machine, unlike the first electromechanical and electronic computers, where programs were held externally, for instance set up in

switches or entered on paper tape.¹³ So we can rephrase Turing's question, "Can machines think?" with "Could computers program themselves without human, that is Divine, intervention?" Alternatively, we can ask, "Could the creative power of Life help us to transform our consciousness and hence culture, enabling us to live intelligently with information technology?"

Well, this is essentially what is happening in the great Spiritual Renaissance and Scientific Revolution that is emerging today. And these two great movements are making Mystical Pragmatics possible, unifying the two extremes of human endeavour: the meditative and contemplative with the design and management of integrated business systems that ensure the equitable distribution of the goods and services we all need to survive and flourish in an interdependent world.

We can obtain some understanding of what this means by studying the root meanings of words, which David Bohm aptly called the archaeology of language. For while we live in unprecedented times, we are in effect rediscovering our forebears' ancient wisdom, called *prisca sapientia* (pristine wisdom), which Isaac Newton spent many years searching for,¹⁴ or *philosophia perennis* (eternal wisdom), in his rival Gottfried Leibniz's terms,¹⁵ which has been lost through the dominance of materialistic and mechanistic science and business, far removed from Reality.

The mystical worldview

First, *mystical* derives from Greek *mustikos* 'mystical, secret', from *mustēs* 'initiated person', from *mūein* 'close the eyes or lips', the primary sense probably being 'one vowed to keep silence' the *Oxford English Dictionary* suggests, rather than closing the eyes in meditation. So a mystic is a person with direct, immediate inner knowing of divine mysteries, living in union with the Divine, profoundly grounded in Reality. We can call such inner knowing Gnosis, from Greek *gnōsis* 'knowledge', cognate with Sanskrit *jñāna*, from the Proto-Indo-European (PIE) base **gnō-* 'to know', in contrast to symbolic knowledge, expressible in words and other signs. So a time-honoured way to realize Gnosis is through *jñāna-yoga* 'path of wisdom and abstract knowledge' in Advaita 'not-two'.

But more than this. A mystic is someone who is free of attachment to the fulfilment of desire, accepting and surrendering to *what is*, following Shakyamuni Buddha's teachings, encapsulated in his three marks of being (*trilakshana*):

1. There is nothing whatsoever that is permanent in the Universe, including our bodies and any groups, from our family, through our cultures, to our species, that we feel we belong to (*anitya*).
2. If we do not recognize this fundamental principle of existence, we shall suffer (*dubbha*).
3. The way to end suffering is to pass through a psychological death, free of the sense of a separate self, of attachment to the egoic mind (*Anatman*), leading to *Moksha* 'liberation and release from worldly bonds', *Nirvāna* 'extinction', and *Kaivalya* 'Solitude, Absolute Consciousness'.

Here are two other short passages describing the mystical worldview, in contrast to the traditional scientific worldview, from the *Mandukya Upanishad*, the shortest of the *Upanishads*, and from Lao Tzu's *Tao Teh Ching*:

AUM stands for the supreme Reality.

It is a symbol for what was, what is,

And what shall be. AUM represents also

What lies beyond past, present, and future.

Tao can be talked about, but not the Eternal Tao.

Names can be named, but not the Eternal Name.

As the origin of heaven-and-earth, it is nameless:

As 'the Mother' of all things, it is nameable.

In other words, "Brahman is all, and the Self [Atman] is Brahman," as the *Mandukya Upanishad* goes on to say. This is not conceptual knowledge, as it might be for a pandit-type figure. For we can understand this in the utmost depth of being with Absolute Certainty, exquisitely expressed in the

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Sanskrit word *Satchidananda* 'Bliss of Absolute Truth and Consciousness', from *Sat* 'Absolute, Eternal, Unchanging Being, Truth', *Chit* 'Absolute Consciousness', and *Ananda* 'Bliss, Absolute Joy', the first morpheme being cognate with Mohandas Ghandi's *Satyagraha* 'Truth force'.

With such a realization, we shall then have fulfilled the prophesy made in 1901 by the Canadian psychiatrist Richard Maurice Bucke in *Cosmic Consciousness*: "our descendants will sooner or later reach, as a race, the condition of cosmic consciousness. ... In contact with the flux of cosmic consciousness all religions known and named to-day will be melted down. The human soul will be revolutionized." And when this happens, "Churches, priests, forms, creeds, prayers, all agents, all intermediaries between the individual man and God will be permanently replaced by direct unmistakable intercourse. Sin will no longer exist nor will salvation be desired. Men will not worry about death or a future, about the kingdom of heaven, about what may come with and after the cessation of the present body. Each soul will feel itself to be immortal,"¹⁶ extraordinary words written many years ahead of their time.

Bucke wrote these words because for thousands of years there has been a perceived split between humanity and the Absolute Whole, preventing us from realizing our Authentic Self, discovering what it truly means to be a human being. We can see the nub of this problem from the root of *human*, which is Latin *humus* 'ground, earth', from the PIE base **dhghem-* 'earth'. This etymology shows that our forebears some 7,000 years ago conceived of human beings as earthlings in contrast to the divine residents of the heavens, as Calvert Watkins explains in *The American Dictionary of Indo-European Roots*.¹⁷ So the split between the human and the Divine lies deep in the collective unconscious. To be humble, which derives from the same root, is therefore to deny our Divinity. Conversely, it is arrogant to realize and acknowledge our True Nature as Divine Beings, *arrogance* being the opposite of *humility*.

The Greeks encapsulated this condemnatory attitude in the word *hubris*, which in Greek tragedy indicated excessive pride towards or defiance of the gods. Thus those who are out of touch with Reality can resent those who know the Divine with Absolute Certainty, calling it excessive self-confidence, seeking to bring Gnostics back down to earth. In Greek mythology, the goddess Nemesis was the spirit of divine retribution, punishing, by transference, those who might seem to rise above their station, thereby challenging the order of the world.¹⁸

In the three Abrahamic religions of Judaism, Christianity, and Islam, the ruling religious authorities have taken on the role of Nemesis, for all three monotheistic religions believe that God is other, unlike those in the East. As F. C. Happold tells us in *Mysticism*, "To Jew, Christian, and Moslem, a gulf is felt to exist between God and man, Creator and created, which can never be crossed. To assert that 'Thou' art 'That' [as the Hindus do] sounds blasphemous".¹⁹ And as Elaine Pagels tells us, "Even the mystics of Jewish and Christian tradition who seek to find their identity in God often are careful to acknowledge the abyss that separates them from their divine Source".²⁰

The reason for their timidity is that ruling religious authorities can be terrified of anyone in their midst who speaks the Truth that sets us free, sometimes being quite ruthless with them. For instance, Yehuda Berg tells us that the Zohar, the primary Kabbalistic text, "warned that the 'governing religious authority' would always try to prevent the people from claiming the spiritual power that was rightly theirs." Such authorities would "act as an intermediary between man and the divine". For if they allowed people to "connect directly to the infinite, boundless Light of Creation" that "would mean their demise as gatekeepers to heaven".²¹ This is most clear in the case of the Sufi Mansur al-Hallaj, who suffered a gruesome death in Baghdad in 922 for declaring, "I am the Truth."²²

Then in 1329, Pope John XXII issued a bull convicting the pre-eminent Christian mystic Meister

Eckhart of heresy.²³ For Eckhart, an immensely popular Dominican preacher and scholar, was wont to make such statements as, “The eye with which I see God is the same as that with which he sees me.”²⁴ Presumably Eckhart would have been burnt at the stake, the official punishment for heresy since the Synod of Verona in 1184, if he had not died before such a sentence could have been carried out.²⁵

In 1600, the Italian Dominican friar, philosopher, mathematician, and astronomer Giordano Bruno did not escape so lightly, being burnt at the stake for heresy, as much for challenging the authority of the inquisitors as for his infinite cosmology, going far beyond even the geocentric and heliocentric views of the universe that prevailed at the time, considering the Sun to be a star just like any other.²⁶

This natural cosmology led Bruno to write “that law of love that is spread far and wide ... which derives ... from God the father of all things so that it is in harmony with all nature,” “is the religion that I observe”. Bruno told this to Rudolf II, the Holy Roman Emperor who later employed Tycho Brahe and Johannes Kepler as his ‘Imperial Mathematicus’. In response, Ingrid D. Rowland, Bruno’s biographer, writes, “If the inquisitors killed him for observing [this incontrovertible religion], they would have to explain to the world how they could do so in the name of love, forgiveness, and the Gospel.”²⁷

As the Divine is as much immanent as transcendent, it is not surprising that some mystics in these religions, known as Kabbalists, Gnostics, and Sufis, are courageously beginning to speak out. For instance, at the *Synthesis Dialogues* in Rome in 2004 organized by the Association for Global New Thought and attended by the Dalai Lama, the Benedictine monk David Steindl-Rast said that one of his great concerns is that the Western God-view is warped and makes us sick. The idea of God as being separate from us is an extremely dangerous view.²⁸ And as the Jungian therapist Anne Baring wisely writes in her lyrical magnum opus in 2013, we urgently need a new image of God, different from that which we have inherited from the patriarchal religions, which portray a transcendent God creating the world from a distance, distant and separate from the created world and ourselves.²⁹ We explore this critical situation further in Subsection ‘The great taboo’ on page 79.

Peirce’s architectonic

To understand the practical side of Mystical Pragmatics, we first note that *pragmatics* derives from Latin *prāgmaticus* ‘skilled in business’, from Greek *prāgmaticos* ‘active, business-like, versed in affairs, relating to fact’ from *prāgma* ‘deed, action, fact’, from *prāssein* ‘to do, make, manage’, also root of *practical*. So we can regard pragmatics as the science or study of our practical business affairs, extending the conventional linguistic and semiotic meanings of the word.

As such, the science of pragmatics is closely related to the philosophy of pragmatism, which Charles Sanders Peirce introduced in an article titled ‘How to Make Our Ideas Clear’ in 1878.³⁰ However, Peirce (pronounced *Purse*) did not actually use the word *pragmatism* in this essay. In the event, it was not until 1900, when Peirce wrote to his closest friend, the philosopher and psychologist William James, that they realized that they had been using the term for many years in philosophical conversation without it appearing in their publications and without a clear definition of the term, which the *Century Dictionary Supplement* eventually gave as “A theory concerning the proper method of determining the meaning of conceptions.”³¹ In Peirce’s original article, he wrote that clearness of apprehension could be attained in this way: “Consider what effects, which might conceivably have practical bearings, we conceive the object of our conception to have.”³²

For me, this is the essence of what makes knowledge scientific in contrast to philosophical or theological speculation. In the way that I use the word *science*, this consists of a coherent body of

knowledge that corresponds to all our experiences, from the mystical to the mundane. Peirce himself, as an architectonic polymath, made enormous strides to the realization of this great dream of humanity. For as Max H. Fisch wrote in 1979:

Who is the most original and the most versatile intellect that the Americas have so far produced? The answer 'Charles S. Peirce' is uncontested, because any second would be so far behind as not to be worth nominating. Mathematician, astronomer, chemist, geodesist, surveyor, cartographer, metrologist, spectroscopist, engineer, inventor; psychologist, philologist, lexicographer, historian of science, mathematical economist, lifelong student of medicine; book reviewer, dramatist, actor, short story writer; phenomenologist, semiotician, logician, rhetorician, metaphysician.³³

However, if we are to fully understand the great contribution that Peirce made to Mystical Pragmatics, we need to focus attention, not on all these specialisms, but rather on the profound transformation that he went through during the four years either side of his fiftieth birthday in 1889. We can see the beginnings of Peirce's endeavours to integrate all knowledge into a coherent whole from an unpublished piece he wrote in 1885, when he felt that he may have "found the key to the secret of the universe",³⁴ writing to William James, "I have something very vast now. I shall write if for Mind. They will say that it is too vast for them. It is ... an attempt to explain the laws of nature, to show their general characteristics and to trace them to their origin & predict new laws by the law of the laws of nature."³⁵ Nevertheless, reflecting on this endeavour nearly twenty years later, he wrote that he was applying a method that any intelligent person could master.³⁶

This initial piece was intended as Chapter 1, 'One, Two, Three: Fundamental Categories of Thought and Nature' in an uncompleted book titled *A Guess at the Riddle*. As the title of this chapter indicates, the guess was the proposition that the basic building block of all knowledge is the triad, inspired by Immanuel Kant, "the King of modern thought, ... who first remarked the frequency in logical analysis of *trichotomies* or three-fold distinctions."³⁷ In *Critique of Pure Reason*, Kant had defined four groups, each of three categories,³⁸ as a refinement of Aristotle's ten categories as the foundation of his logic.³⁹ Peirce, himself, began his own search for a new list of categories in a published essay in 1868, in which he began with just two categories—substance and being—writing "substance and being are the beginning and end of all conception,"⁴⁰ likening them to subject and predicate in Aristotelian syllogistic logic.⁴¹

However, in *A Guess at the Riddle*, he felt a triadic approach was necessary to obtain the highest level of generalization, the triads being isomorphic to first, second, third. So the proposed second to ninth chapters of this first attempt to write his magnum opus were titled 'The triad of x ', where x stood successively for 'reasoning', 'metaphysics', 'psychology', 'physiology', 'biology', 'physics', 'sociology', and 'theology'.⁴²

Then in the autumn and winter of 1887 and 1888, Peirce wrote an introduction to *A Guess at the Riddle*, beginning with these words: "To erect a philosophical edifice that shall outlast the vicissitudes of time, my care must be, not so much to set each brick with nicest accuracy, as to lay the foundations deep and massive,"⁴³ the very first sentence of the first volume of the eight-volume set of *Collected Papers* published between 1931 and 1958. He then went on to write in the same paragraph:

The undertaking which this volume inaugurates is to make a philosophy like that of Aristotle, that is to say, to outline a theory so comprehensive that, for a long time to come, the entire work of human reason, in philosophy of every school and kind, in mathematics, in psychology, in physical sciences, in history, in sociology, and in whatever department there may be, shall appear as the filling up of its details. The first step toward this is to find simple concepts applicable to every subject.⁴⁴

Although Peirce actually fell far short of completing this book, even in draft form, we can see the direction of his thoughts from five metaphysical essays he wrote from 1891 to 1893 for the *Monist*, edited by Paul Carus, who was the compiler of *The Gospel of Buddha: Compiled from Ancient Records*, the classic

text on Buddhism that first introduced many Westerners to Buddha and his teachings, first published in 1894.⁴⁵

In the first of these essays, titled ‘The Architecture of Theories’, Peirce explained what he meant by First, Second, Third in his triadic logic: “First is the conception of being or existing independent of anything else. Second is the conception of being relative to, the conception of reaction with, something else. Third is the conception of mediation, whereby a first and second are brought into relation.”⁴⁶

Peirce thus came close to discovering the fundamental law of the Universe, named as the *Principle of Unity* on page 52, the essence of Mystical Pragmatics. For if we do not obey this Divine, Cosmic law through ignorance, as most have been doing for millennia, the result is the conflict and confusion we see in the world today.

In the other four essays, Peirce described the three pillars of his evolutionary cosmology: “*tychism*, the theory that chance is really operative in the universe; *synechism*, the theory that continuity prevails and that the presumption of continuity is of enormous methodological importance for philosophy; and, finally, *agapism*, the thesis that love, or sympathy, has real influence in the world.”⁴⁷

First, in ‘The Doctrine of Necessity Examined’, Peirce showed that the doctrine of absolute necessity, alternatively called the ‘mechanistic philosophy’, could not be maintained. By observing that evolution is a process of growth and increasing complexity, he surmised “there is probably in nature some agency by which the complexity and diversity of things can be increased, ... thus admitting pure spontaneity or life as a character of the universe.”⁴⁸

Then in the third essay, titled ‘The Law of Mind’, he named this hypothesis of chance-spontaneity *tychism*, from Greek *tukhē* ‘chance’, which is really the much ridiculed vitalism in disguise, writing “I have begun by showing that *tychism* must give birth to an evolutionary cosmology, in which all the regularities of nature and of mind are regarded as products of growth.”⁴⁹

In the same essay, by following the maxim “Know thyself,” Peirce showed that concepts could not be looked at in isolation from each other; they are all interrelated, ultimately in Ineffable, Nondual Wholeness. By basing his architectonic on self-awareness, Peirce was thus breaking the great taboo that holds Western science, philosophy, and religion in a straitjacket. Although he did not explicitly state that our minds create our reality and govern our behaviour, this is implicit in this essay, which he began writing shortly after having a sudden and overwhelming mystical experience when making a rare visit to church on 24th April 1892. As he described in a letter to the priest afterwards, “when the instant came [to take communion], I found myself carried up to the altar rail, almost without my own volition.” Having this direct experience of the power of the Divine, Peirce went on to write, “I have never before been mystical, but now I am.”⁵⁰

Nevertheless, Peirce was rather ambivalent about this revelation, as he sardonically indicated in an introductory autobiographical paragraph to this seminal essay. It seems that he sought to distance himself from the transcendentalists, some influenced by “minds stricken with the monstrous mysticism of the East”, yet still recognizing, “it is probable that some cultured bacilli, some benignant form of the [transcendental] disease was implanted in my soul, unawares, and that now, after long incubation, it comes to the surface, modified by mathematical conceptions and by training in physical investigations.”⁵¹

So what was so critically foundational in ‘The Law of Mind’? Well, Peirce began by writing that there is but one law of mind, defining it thus: “ideas tend to spread continuously and to affect certain others which stand to them in a peculiar relation of affectibility. In this spreading they lose intensity, and especially the power of affecting others, but gain generality and become welded with other ideas.”⁵²

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Peirce called this basic principle of existence *synechism*, from Greek *synekhēs* ‘holding together, continuous, contiguous’, from *sun* ‘together, with’ and *ekhein* ‘to have, hold’, not unlike *synergy* ‘working together’. He regarded continuity to be an idea of prime importance in philosophy.⁵³ But not only in philosophy. The synechistic principle, similar to *holistic* and *integral* tendencies today, is fundamental to all aspects of human endeavour, challenging virtually everything that we have learnt about ourselves and of our relationship to God and the Universe since the dawn of history.

In Peirce’s case, he first illustrated synechism with Georg Cantor’s infinitesimal continuum, questioning the opinion of many mathematicians at the time “that an infinitesimal quantity is an absurdity.”⁵⁴ For a few years earlier, Cantor had showed that there is not just one infinite cardinal; there are at least two. First, there is an infinite set of rationals between any two rationals, which can be mapped to the integers in a one-to-one correspondence, which Cantor called countable. However, Cantor also showed that the real numbers cannot be mapped to the integers and so an innumerable infinite cardinal must also exist,⁵⁵ an idea that fascinated Peirce, as it has done many mathematicians ever since.

The fourth essay was titled ‘Man’s Glassy Essence’, a reference to Shakespeare’s *Measure for Measure*, in which Isabella says to Angelo that man is “Most ignorant of what he’s most assured”: “His glassy essence”.⁵⁶ For as Kenneth Laine Ketner, explains in *His Glassy Essence*, curiously subtitled *An Autobiography of Charles Sanders Peirce*, *glassy* in Shakespeare’s time could mean ‘mirror-like’, mirrors being used as literary images of self-awareness.⁵⁷ *Glassy* could also refer to the reflection of Divinity, as a glossary of Shakespeare’s words tells us.⁵⁸

To help readers understand that which they are most ignorant of, Peirce sought to use the doctrines of tychism and synechism to shed light on “the relation between the psychical and physical aspects of a substance.” Using experience gained from being educated as a chemist and employed as a geophysicist for nearly thirty years, he likened consciousness to protoplasm, which he called ‘life-slime’.⁵⁹

Peirce’s use of protoplasm to illustrate synechistic principles in the physical universe highlights a central issue about humanity’s relationship to the Divine, made most clear by studying the archaeology of language. For *protoplasm* derives from Late Latin *prōtoplasma* ‘first thing created’, from Greek *prōto-* ‘first’ and *plasma* ‘moulded thing, figure, form’, from *plassein* ‘to shape’, from PIE base *pelə* ‘flat, to spread’, also root of *field*, *plane*, *floor*, and *plastic*. Yet, as I understand the situation, never actually having seen protoplasm, protoplasms appear as amorphous, from Greek *amorphos*, from *a-* ‘without’ and *morphē* ‘shape’. We explore this critical issue further in the final section of this treatise on ‘Recapitulating the Cosmogonic Cycle’ on page 88.

If Peirce were seeking to unify mind and matter today, he could well follow those scientists who say that quantum effects in the physical universe can only be understood by recognizing the existence of Consciousness as Ultimate Reality. For instance, in *The Self-Aware Universe*, the quantum physicist Amit Goswami describes how consciousness creates the material world, turning the conventional materialistic worldview upside down, putting it back on its feet, for it is today standing on its head.⁶⁰ And in *The Akasha Paradigm in Science*, the systems theorist Ervin Laszlo uses the word *akasha* to refer to the Universal Quantum Field.⁶¹ He took the word from Vivekanda’s *Raja Yoga*: “Everything that has form, everything that is the result of combination, is evolved out of this Akasha. ... Just as Akasha is the infinite, omnipresent material of this universe, so is this Prana the infinite, omnipresent manifesting power of this universe.” And in *The Field*, the journalist Lynne McTaggart simply calls Ultimate Reality the Field, cognate with *plasma*.⁶²

In Hinduism, the Sanskrit word *Ākāśha* is the æther, “a substance that is said to fill and permeate the entire universe and to be the particular vehicle of life and sound.” Buddhists regard *Ākāśha* more as space than substance,⁶³ which is closer to Greek *aither* ‘pure, fresh air’, in Latin *æther*, “the pure essence where the gods lived and which they breathed”.⁶⁴ Traditionally Akasha or Æther has thus been regarded as the fifth element as a basic constituent of the Universe, the other four elements being fire, air, earth, and water. Today, we can refer to the Cosmic Soul as *quintessence*, from Medieval Latin *quinta essentia*, a translation of Greek *pep̄tē* ‘fifth’ and *ousiā* ‘being, essence’, “thought to be the substance of the heavenly bodies and latent in all things”.⁶⁵

But what is this quintessential æther and how can we know of its existence, never mind that it is Ultimate Reality? Well, in 1887, shortly before Peirce wrote ‘Man’s Glassy Essence’, Albert Michelson and Edward Morley showed in a famous experiment that an ‘aether wind’ could not be physically detected as the Earth passed through the supposed aether.⁶⁶ Although Albert Einstein did not specifically mention the Michelson–Morley experiment in his 1905 paper on the special theory of relativity,⁶⁷ he did say that the notion of ‘aether-drift’⁶⁸ is ‘superfluous’ in his theory.⁶⁹

However, just because synechistic Reality—as a seamless, borderless Continuum—cannot be detected with the physical senses, this does not mean that it does not exist. We can see this most clearly through the word *Presence*, which derives from Latin *præsentia*, participle of *præesse* ‘to be before’, from *præ* ‘before’ and *esse* ‘to be’. So *Presence* literally means ‘before being’ or ‘prior to existence’. And it is this quintessential Presence, which many through the ages have sensed, that we need to explain dark matter and dark energy, which are puzzling astrophysicists today.

Not only this. We urgently need to return to Nonmanifest Reality if we are to intelligently manage our practical business affairs in harmony with the fundamental law of the Universe. So applying the principle of synechism to social relationships, in the last of these five metaphysical essays, titled ‘Evolutionary Love’, Peirce sought to show that the great evolutionary agency of the universe is Love (with a capital letter).⁷⁰ He called this unifying principle *agapism*, from Greek *agapē*, the fourth of the words for *love* in ancient Greek: *storgē*, *philia*, *erōs*, and *agapē*, which C. S. Lewis called ‘Affection’, ‘Friendship’, ‘Eros’, and ‘Charity’ in his classic work *The Four Loves*.⁷¹

In this essay, Peirce delivers a polemic against individualism and the ‘gospel of greed’, particularly stirred up by Charles Darwin’s *On the Origin of Species by Means of Natural Selection*. As Peirce wrote, “the extraordinary favourable reception it met with was plainly owing, in large measure, to its ideas being toward which the age was favourably disposed, especially, because of the encouragement it gave to the greed-philosophy.” In contrast, as Peirce wrote, “Love cannot have a contrary, but must embrace what is most opposed to it,”⁷² for, as John wrote in his first Epistle, “God is Love; and he that dwelleth in Love dwelleth in God, and God in him,”⁷³ words that Pope Benedict XVI took as the text for his first encyclical ‘*Caritas Deus Est*’.⁷⁴

Shortly after these five metaphysical essays were published in *The Monist*, in May 1893, Peirce submitted a much shorter essay to the magazine titled ‘Immortality in the Light of Synechism’, by far the most profound expression of Peirce’s architectonic. However, this article was not published due to a misunderstanding with Paul Carus and was not published until 1958, when Arthur W. Burks published the seventh volume of Peirce’s *Collected Works*, the first six volumes having been published in the 1930s.

In this highly significant three-page essay, Peirce showed that the principle of synechism requires us to look deeply into what it truly means to be a human being. As he wrote, likening synechism to a Brahmanical hymn on the Bliss of the pure and infinite Self:

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Nor must any synechist say, “I am altogether myself, and not at all you.” If you embrace synechism, you must abjure this metaphysics of wickedness. ... Your neighbours are, in a measure, yourself, and in far greater measure than, without deep studies in psychology, you would believe. Really, the selfhood you would like to attribute to yourself is, for the most part, the vulgarest delusion of vanity.⁷⁵

What this means is “Synechism refuses to believe that when death comes, even the carnal consciousness ceases quickly,”⁷⁶ a phenomenon widely accepted today, as Anne Baring describes in *The Dream of the Cosmos*.⁷⁷ For “A man is capable of a spiritual consciousness, which constitutes him one of the eternal verities, which is embodied in the universe as a whole.”⁷⁸ So when we realize that our Authentic Self is nothing but the Absolute Whole, we become Immortal Beings, free of the fear of death.

Peirce concluded his essay by saying, “though synechism is not religion, but, on the contrary, is a purely scientific philosophy, yet should it become generally accepted, as I confidently anticipate, it may play a part in the ‘onement of religion and science’.”⁷⁹

Indeed, this is what is happening in the world today, the essence of practical spirituality and spiritual pragmatics, as Ananta Kumar Giri has pointed out.⁸⁰ However, if we are to distinguish Mystical Pragmatics from other global movements such as conscious evolution and evolutionary enlightenment, we need to follow Peirce’s principle that pragmatism is squarely based on conceptual clarity and integrity, essential for sound systems design, as Frederick P. Brooks, a leading systems manager at IBM in the 1950s and 60s pointed out.⁸¹

To this end, we note that the Greek word *synekhēs* could mean both ‘continuous’ and ‘contiguous’. This is a vitally important distinction. For instance, the pieces in a completed jigsaw puzzle are contiguous, for the borders between the pieces are visible, while the picture on the box appears continuous. Similarly, a process industry, such as oil, gas, and electricity, is continuous, while the products produced by a company manufacturing cars, television sets, and boxes of washing power, for instance, are contiguous, or better continual.

The key point here is that the continuity of consciousness is not sufficient, encapsulated in the new-age mantra “We are all one,” often sung while still holding on to an egoic notion of self. If we are to realize that our True Nature is Immortal, we need to realize the seamless continuousness of Cosmic Consciousness. In this respect, as Joseph Brent, Peirce’s biographer, points out, the continuous doctrine of synechism is very similar to Bohm’s concept of “unbroken wholeness in flowing movement”,⁸² inspired by the process philosophy of Heraclitus and A. N. Whitehead, which Bohm called the holomovement, which he likened to a flowing stream, whose substance is never the same.⁸³

However, while the concept of the holomovement in the implicate order enabled Bohm to reconcile the incompatibilities between quantum and relativity theories—still not generally recognized today—we need to go much further if we are to live intelligently with information technology. For the holomovement, as a river of life, functions in time, and time, like everything else in the relativistic world of form, is what is called *māyā* in the East, meaning ‘deception, illusion, appearance’, or *lila* ‘play of the Divine’.

So Mystical Pragmatics requires us to allow this cosmic river to flow into a Timeless Ocean, the vast Ocean of Consciousness, which is like a great ball of water with an infinite diameter. To give this Ocean some structure, we can visualize it with a finite radius, where the waves and ripples on the surface are the physical universe, while the currents beneath the surface are the Cosmic Psyche. The centre of the Ocean is then the Origin of the Universe, the Divine Source of Life.

In terms of our Genuine Identity, we are all both the entire Ocean and its centre, which we can call Wholeness and Oneness, respectively. For *identity* derives from Latin *idem* ‘same’. So Consciousness is

the Cosmic Context for all our learning and Love is the Divine Essence that we all share. Yet, we all also have a unique identity as individuals—literally ‘undivided beings’—as waves and currents on and within the vast Ocean of Consciousness.

We can reconcile these two ways of looking at our identities as Divine, Cosmic human beings with the metaphor of a hologram, from Greek *ólos* ‘whole’ and *gramein* ‘to write’. So, as Bohm points out, a hologram is an instrument that ‘writes the whole’. This is essentially how self-reflective Intelligence functions when it is radiantly lit by the coherent light of Consciousness, which acts more like a laser beam than the diffuse light of the Sun or a light bulb. For Intelligence is the eyesight of Consciousness, which can only really function with full power and effectiveness when the clouds of unknowing are dispersed, in the terms of an anonymous fourteenth-century English mystic.⁸⁴

Of course, such a worldview is not new, for it is ever present to those with the necessary sensitivity. For instance, this is how William Blake beautifully described such a holographic way at looking at Totality in *Auguries of Innocence*:

To see a world in a grain of sand,
And a heaven in a wild flower,
Hold infinity in the palm of your hand,
And eternity in an hour.

In terms of Eastern mysticism, this holographic worldview was best understood by the authors of the *Avatamsaka Sūtra* ‘Flower Ornament Scripture’ in Huayan Buddhism, also spelled *Hwa Yen* and *Hua-yen*, which the Buddhist scholar D. T. Suzuki described as “the consummation of Buddhist thought, Buddhist sentiment, and Buddhist experience”.⁸⁵ As Francis H. Cook tells us, Hua-yen thus “came to serve as the philosophical basis for the other schools of Buddhism more concerned with practice and realization. ... As Suzuki remarked, Hua-yen is the philosophy of Zen and Zen is the practice of Hua-yen,” Hua-yen being called *Kegon* in Japan, where Zen flourished.⁸⁶

A central notion in the *Avatamsaka Sūtra* is Indra’s Net of pearls or jewels, each of which mirrors the brilliant light emanating from all the other jewels. As individuals, we are these jewels, both as distinct individuals and as the entire net, which ultimately dissolves in seamless Consciousness through an involutionary process, described on page 30. Indra’s Net can thus be used as a metaphor for the holographic, fractal-like worldview emerging today.

Returning to Peirce’s architectonic, he never completed his magnum opus, titled *Grand Logic* in 1891 and *Minute Logic* in 1902.⁸⁷ Perhaps the task was too great for one person at that or any other time. For Peirce was attempting to find the Holy Grail and Philosophers’ Stone of human learning, which had eluded many through the ages.

One such was René Descartes, who had a dream in 1619 in Ulm of “the unification and the illumination of the whole of science, even the whole of knowledge, by one and the same method: the method of *reason*”.⁸⁸ Descartes published his dream eighteen years later in 1637 as *Discourse on the Method for Rightly Directing One’s Reason and Searching for Truth in the Sciences*, to give his epoch-making work its full title, publishing three essays on *Optics*, *Geometry*, and *Meteorology*, which were not intended to be separated from the *Discourse*, which he regarded as a preface.⁸⁹

However, the Cartesian scholar Bernard Williams has said that while such an idea was still a reasonable project in the first half of the seventeenth century, it would be regarded as ‘megalomaniac insanity’ in today’s postmodern world.⁹⁰ And in *The Postmodern Condition* Jean-François Lyotard denied

the possibility of a 'grand narrative', "the idea that philosophy can restore unity to learning and develop universally valid knowledge for humanity."⁹¹ Similarly, the integral philosopher Ken Wilber has said, "The holistic quest is an ever-receding dream, a horizon that constantly retreats as we approach it, a pot of gold at the end of the rainbow that we will never reach."⁹²

Nevertheless, this sceptical attitude has not deterred physicists in the twentieth century from seeking to develop what they call the theory of everything, defined by Brian Greene as "a theory capable of describing nature's forces within a single, all-encompassing, coherent framework".⁹³ However, physicists have been unable to create what Einstein called a 'unified field theory' because they do not recognize the existence of nonphysical energies, such as the synergistic mental energies they use to create their theories. They are attempting to create this great synthesis on the assumption that all change can be explained in terms of four forces of nature: electromagnetic, gravitational, and the strong and weak nucleic.⁹⁴ Indeed, Einstein did not even include these last two, famously asserting, "God does not play dice."

However, not all physicists are as enthusiastic as Stephen Hawking about discovering the grand design of the universe.⁹⁵ For instance, Martin Rees, the Astronomer Royal in the UK and a past President of the Royal Society, has written that not only is seeking such a grand unified theory hubristic, it is actually irrelevant to ninety-nine percent of scientists.⁹⁶ In a similar vein, the ecophilosopher Henryk Skolimowski writes in *Let There Be Light* that theories of everything that want to finish the map of all knowledge once and for all are based on a preposterously arrogant presumption.⁹⁷ The choice of words is interesting here for *preposterous* derives from Latin *præposterus* 'having the last first, inverted, perverse, absurd', from *præ* 'before' and *posterus* 'coming after, following'. So *præposterus* is a Latin oxymoron, deriding the Principle of Unity, the fundamental law of the Universe.

Abraham Maslow called our hesitation to reach out to our fullest potential as Divine human beings—likewise seeking to prevent others from doing so through 'counter-valuing'—the 'Jonah Syndrome'. As he said,

This evasion of growth can also be set in motion by a fear of paranoia. ... For instance, the Greeks called it the fear of hubris. It has been called "sinful pride," which is of course a permanent human problem. The person who says to himself, "Yes, I will be a great philosopher and I will rewrite Plato and do it better," must sooner or later be struck dumb by his grandiosity, his arrogance. And especially in his weaker moments, will say to himself, "Who? Me?" and think of it as a crazy fantasy or even fear it as a delusion. He compares his knowledge of his inner private self, with all its weakness, vacillation, and shortcomings, with the bright, shining, perfect, faultless image he has of Plato. Then of course, he will feel presumptuous and grandiose. (What he fails to realize is that Plato, introspecting, must have felt the same way about himself, but went ahead anyway, overriding his own doubts about self.)⁹⁸

In developing his architectonic, Peirce no doubt experienced such doubts as he progressed, not the least because "All his adult life, Peirce likely endured the effects of three neurological pathologies, to which he pointed himself: trigeminal neuralgia (then medically termed *facial neuralgia*), an excruciatingly painful condition; manic-depressive illness; and left-handedness."⁹⁹ Furthermore, as Joseph Brent points out, "Peirce's intention to make 'the entire work of human reason' a string of footnotes to his philosophical system" was hubristic.¹⁰⁰ In effect, although Peirce saw himself as rebuilding Aristotle's philosophy, he was actually attempting to rebuild Plato's, for as A. N. Whitehead famously said in his first Gifford lecture in 1927, "The safest general characterization of the European philosophical tradition is that it consists of a series of footnotes to Plato."¹⁰¹

Apart from these personal challenges, it is not surprising that Peirce also had his own nemesis, who took the form of Simon Newcomb, a protégé of Peirce's father Benjamin Peirce, the foremost mathematician in the USA at his time. Without going too deeply into Newcomb's psychology, there seem to be three major influences on Newcomb's attitude to Peirce. First, not coming from Peirce's

privileged background, he resented the advantages that Peirce had been given. Secondly, he was probably subconsciously envious of Peirce's brilliant genius. Thirdly, and most importantly, he was appalled by the way that Peirce married his mistress Juliette, having lived openly with her after he and his first wife Zina separated. For as Joseph Brent writes, "For a sanctimonious man of affairs of the period such as Newcomb, for Peirce to have a mistress was both understandable and acceptable if the affair were carried on discretely, but to marry her after such a public liaison was outrageous because to do so attacked the sanctity of marriage."¹⁰²

Newcomb's hostility was to lead Peirce into dire financial straits during the last twenty-two years of his life. From 1892 onwards, Peirce did not have a regular source of income, being unacceptable to American Academe, despite being the most original philosopher in the history of the United States. At times in the mid 1890s, "he was so poor that he did not eat for days and had no place to sleep, spending days and nights wandering in [New York] city" with the down-and-outs.¹⁰³ From time to time, his friends gave him some money, which William James formalized in 1907 by arranging for between fifteen and twenty-five subscribers to donate to a fund raising about \$1000 annually.¹⁰⁴

Little has changed today. Scientists and technologists are driving the pace of change in society at unprecedented rates of acceleration. Yet, very few seem to be interested in understanding the root causes of this phenomenon, even attempting to discourage those who are endeavouring to live intelligently with information technology. Essentially, this is because the invention of the stored-program computer—as an extension of the mind—requires us to change everything. Very little of what we have learnt on how to organize society during the past five thousand years is applicable to the world we live in today.

Vimala Thakar highlighted the central issue of our times in the opening paragraph of *Spirituality and Social Action: A Holistic Approach* with these wise words: "In a time when the survival of the human race is in question, continuing with the status quo is to cooperate with insanity, to contribute to chaos." She therefore asks, "Do we have the vitality to go beyond narrow, one-sided views of human life and to open ourselves to totality, wholeness?" For as she says, "The call of the hour is to move beyond the fragmentary, to awaken to total revolution."¹⁰⁵

Yet, the tyrannous democracies of the world are not intelligently adapting to our rapidly changing environment, which we ourselves are causing, mostly being totally obsessed with money, humanity's most mysterious conception. For as Alexis de Tocqueville pointed out in the middle of the nineteenth century, democracies are the tyranny of the majority or masses,¹⁰⁶ which John Stuart Mill further explored in *On Liberty*. As Mill said:

In general, opinions contrary to those commonly received can only obtain a hearing by studied moderation of language and the most cautious avoidance of unnecessary offence, from which they can hardly ever deviate even in a slight degree without losing ground, while unmeasured vituperation employed on the side of the prevailing opinion really does deter people from professing contrary opinions and from listening to those who profess them.¹⁰⁷

So despite the open-mindedness and open-heartedness that is emerging in some communities, pusillanimous attitudes are still widespread. As a species, we have a massive mountain to climb if we are to become masters of information technology, rather than its slaves, as we mostly are at the moment. For neither technomania nor technophobia is the solution to humanity's problems. So let us look a little more deeply at what such a radical transformation of consciousness entails.

The information systems architect's role

While the invention of the stored-program computer has automated many tasks, previously performed by human beings, this tool of thought has also led to the introduction of many new occupations, most

obviously that of computer programmer or software developer. In parallel, systems analysts and designers emerged in the 1960s and 70s, exploring more the business implications of this epoch-making invention than the technical ones.

Today, there are both software developers and systems designers who call themselves information systems architects, working at the micro and macro level of systems development, respectively. The word *architect* is highly pertinent here, for it derives from Greek *arkhitektōn* ‘builder, architect, engineer’, from *arkhē* ‘beginning, origin; cause, motive, principle, element; leadership, power, rule’, from *arkhos* ‘leader, ruler’, from *arkhein* ‘to begin, rule, command’, and *tektōn* ‘builder’, from PIE base **teks* ‘to weave, fabricate’, also root of *context* through Latin *texere* ‘to weave’ and *technology* through Greek *tekhnē* ‘art, craft, skill’.

So IS architects are the master builders in business, the ones who can see the big picture, how all the various constituents of an enterprise fit together in a coherent whole. In essence, they are generalists, working with specialists in an organization, who have detailed knowledge of the workings of the particular departments they work in. It is then the task of IS architects to integrate all the processes taking place in an enterprise, together with the data that they process.

Now, as the stored-program computer is an extension of the mind, not of our physical abilities, the job of the information systems architect is essentially a psychological one. For the economic imperative of our times is on maximizing the efficiency and effectiveness of the economic machine. And this means implementing with machines as many jobs currently being performed by humans as possible. For, as the cost of human labour goes up, the price of computer systems has been going down.

This situation partially arises from the increasing miniaturization of the components that make up the computer’s hardware; each generation of computers has been smaller than the previous one. This phenomenon has come to be known as Moore’s law. For Gordon E. Moore, cofounder of Intel the chip manufacturer, pointed out in an article in 1965 that the number of transistors on a silicon chip was doubling every year or two.¹⁰⁸ In effect, this quadrupled the price-performance of computers—the amount of performance available per dollar—because the speed of circuits also doubled, for the simple reason that the signals between the components have a shorter distance to travel.

IS architects are not the only profession in business that needs to know how the mind works. Where it is not yet possible to automate jobs, since the 1980s, when Apple introduced the desktop metaphor on its Macintosh computers, human interface designers have also needed such skills. For instance, this is how IBM introduced its guidelines for human interface designers of its OS/2 operating system in 1992:

The term model is used in this book to refer to a descriptive representation of a person’s conceptual and operational understanding of something. Some models are explicit and are consciously designed. These models typically can be represented by a diagram or a textual description. Other models, called mental models are developed unconsciously. People create a mental model by putting together sets of perceived rules and patterns in a way that explains a situation. A typical person cannot draw or describe his or her mental model. In many situations, a person is not aware that a mental model exists.¹⁰⁹

Now, even though most people are unaware of the mental models that guide their behaviour, clearly designers of information systems to be used by human beings need to be aware of these implicit mental models. For as IBM said, “A person develops a conceptual model through experience and then develops expectations based on relationships in the model,” a conceptual model being a mental model that consists of “the set of relationships that a person perceives to exist among elements of any situation”.¹¹⁰

In a similar manner, Apple’s *Human Interface Guidelines* in 1987 urged designers to “use concrete metaphors [from the ‘real world’] and make them plain, so that users have a set of expectations to apply to

computer environments”.¹¹¹ But Apple went a little further than IBM about people’s lack of understanding and consciousness about the conceptual models they use when it said: “People, however, are delightfully complex and varied, which assures that a theory of human activity that would provide a complete framework for the design of human-computer interaction is a long way off”.¹¹²

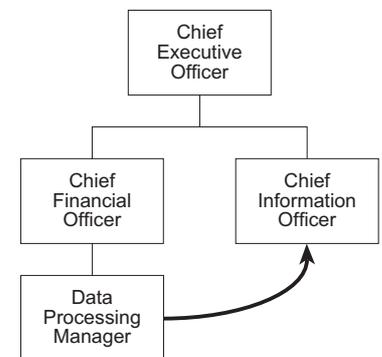
The introduction of the profession of information systems architect into business has also had a major impact on the way that enterprises are organized and managed. During the first three decades of the Computer Age, applications were mainly developed by professional systems analysts and programmers working within a data-processing (DP) department, whose manager reported to the finance director, for among the first applications to be partially automated were accounts receivable and payable and payroll.

However, during the 1970s, it was realized that this situation could not continue for very much longer, for DP departments could not cope with the demand for new applications and provide access to the databases applications were collecting. Application development had to spread throughout the entire enterprise, giving professionals and managers the opportunity to do their own personal computing, such as developing Decision Support Systems.¹¹³ So the computer industry initially evolved a little like the car industry, in which specialist chauffeurs drove the first cars. With the introduction of personal computing, people learned to ‘drive’ their own cars.

Such developments led the sociologist Daniel Bell to point out in 1973 that we were then entering a post-industrial era, which he called the ‘Information Society’,¹¹⁴ as different from the industrial age as that was from the agrarian, land-based economy that preceded it. However, as he said in 1979, “Yet we have no economic theory of information, and the character of information, as distinct from the character of goods, poses some novel problems for economic theorists.”¹¹⁵ We look at this critical situation in Section ‘The divisiveness of money’ on page 65.

Data and information

To deal with such problems, companies began to realize at the birth of the Information Society around 1980 that data is a resource of a business enterprise and needs to be managed like any other resource, like the four m’s: machines, material, money, and men (and women, of course). IBM had a marketing slogan to this effect at the time. In its customer terms, to fulfil this need, the data-processing manager became a Chief Information Officer (CIO) on a par with the Chief Financial Officer (CFO), both reporting to the Chief Executive Officer (CEO), as this diagram illustrates.



But what is the relationship of the CIO, managing information, and the CFO, managing money? Well, money is a type of information and so can be represented in the semantic models developed by information systems architects. But this is not possible the other way round. The meaning of information, and hence its value, cannot be satisfactorily represented in the quantitative financial models of management accountants, investment bankers, and economists.

What this means is that if we are to intelligently manage our business affairs with full consciousness of what we are doing, we need to do so primarily through the modelling methods of information systems architects rather than financial modelling methods. Indeed, these act like a cloud of unknowing, not only inhibiting us from returning Home to Wholeness, but also hiding the true meaning of our activities, undistorted by our unconscious, mechanistic conditioning. Yet despite this revelation about the relationship between information and money, financial modelling methods still rule the roost, with

bankers holding the world to ransom, making the rest of us second-class citizens, not unlike the way women have been treated during the 5,000 years of the patriarchal epoch.

The blind way that we are running our business affairs is mirrored—if blindness can be reflected—in the way that mathematics has evolved. For thousands of years, we human beings have been using numbers without understanding how the concept of number is formed. This situation began to change at the end of the nineteenth century, when Georg Cantor developed the mathematical theory of sets, which he defined in this way: “By a set we mean the joining into a single whole of objects which are clearly distinguishable by our intuition or thought.”¹¹⁶ In other words, it is not possible to form the concept of three until the concept of set is formed. So just as there is a primary-secondary relationship between information-systems modelling methods and financial modelling methods, there is also a primary-secondary relationship between set and number and hence semantics and mathematics.

To highlight this relationship in the education system, in the 1960s, a group of mathematicians in the USA and UK sought to introduce ‘new mathematics’ into primary and elementary schools—attended by five to eight year-olds. Recognizing the primary-secondary relationship between set and number, they introduced the abstract concept of set, so that children could intelligently and consciously learn how to form concepts, central to pattern recognition and hence all our learning. As the authors of *The New Maths: For Teachers and Parents of Primary School Children* pointed out in 1965, the new maths was intended to bring meaning to mathematics.¹¹⁷ Sadly, however, it seems that the new maths was abandoned because children could become too intelligent, not blindly developing the numeracy skills required by business and science.

So the schools lost a wonderful opportunity to help students in the West to awaken and find meaning and value in a rapidly changing world. It is pertinent to note here that the Sanskrit word for ‘to wake up, be awake’ is *budh*, from which the word *buddhi* derives, meaning ‘intelligence, discernment, the power of forming and retaining conceptions and general notions’,¹¹⁸ the essence of Peirce’s pragmatism. And *buddha* means ‘awakened, awake’, giving the title of Buddha ‘awakened one’ to Siddhartha Gautama, also known as Shakyamuni, ‘Sage of the Shakya clan’. So the concept of set is central to the unification of Eastern mysticism and Western reason and hence to ending the long-running war between science and religion. We ignore it at our peril, for how else can we live intelligently and consciously in love, peace, and harmony with each other and our environment?

As the concept of set is central to semantics ‘the science of meaning’, we also need it to understand how we form concepts and make interpretations. To do this, we need to make a clear distinction between data and information, as is done in the data processing and information technology industry. Although this is not universal, in the DP industry *data* is often used as an uncountable noun, more like sand than pebbles, the plural of the Latin *datum* ‘that which is given’, from the Latin *dare* ‘to give; to cause’. *Information*, on the other hand, derives from the Latin *informāre* ‘to give form and shape to, form an idea of’.

For instance, in *Management Information Systems: A Framework for Planning and Development*, published in 1969, Sherman C. Blumenthal gave these definitions:

A **datum** is an uninterpreted raw statement of fact.

Information is data recorded, classified, organized, related, or interpreted within context to convey meaning.¹¹⁹

Similarly, at the end of the twentieth century, my sixteen-year-old niece took a two-year course in information technology for nonprogrammers in which her textbook gave these definitions for data and information:

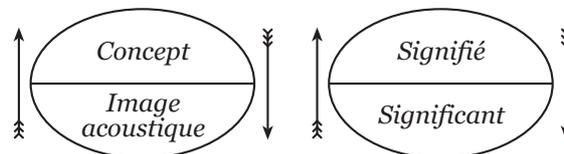
Data may consist of recorded facts, events or transactions.

Information is data that has been processed into a form that is useful, or data that has been given a meaning by putting it into context.¹²⁰

So information is data with meaning, data being what exists prior to interpretation by an intelligent being. Indeed, we can view the Totality of Existence as nothing but data patterns overlapping each other in utmost complexity. This is the essence of Peirce's synechism, for it is not possible to separate these patterns of data from each other. They form a continuous whole, whose Ground is the Datum of the Universe, the seamless borderless Continuum that underlies and embraces everything. And when we know this in the depth and breadth of being, we can say, with John of Patmos in the Book of Revelation in the Bible, "I am Alpha and Omega, the beginning and the end, the first and the last."¹²¹ What this means for human ontogeny and phylogeny we look at briefly in the final section of this treatise, 'Recapitulating the Cosmogonic Cycle' on page 88.

The meaning triangle

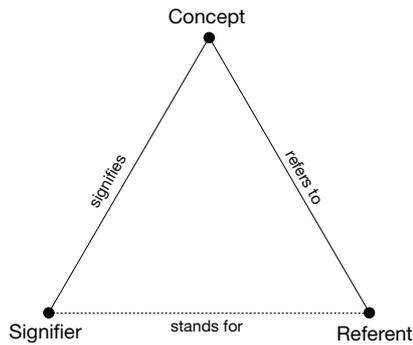
But first we need to look a little more closely at how we make sense of the complex world we live in. As we are aiming to show how completing Peirce's lifework could help humanity live intelligently with Information Technology, let us see how his semiotics could help us here. In this respect, it helps to begin in Europe, rather than the USA. First of all, we need to look carefully at our maps, for they exist in two forms, as concepts and as words, sounds, and other signs that denote them. This is a distinction that Ferdinand de Saussure made in *Cours de linguistique générale*, which his students published posthumously in 1915. In this seminal book of structural semiology, as semiotics 'science of signs' was known in Europe at the time, de Saussure said: "I propose to retain the word *sign* [*signe*] to designate the whole and to replace concept and sound-image respectively by *signified* [*signifié*] and *signifier* [*signifiant*]," illustrated in this diagram.¹²²



For instance, the concept of , as a mental image, could be represented by *tree*, *träd*, *arbre*, or *Baum* in English, Swedish, French, and German, respectively. No matter which language we use to express our ideas, we all have much the same understanding of the concept of tree. Similarly, we could have the number three in our minds as the signified, where the signifier, such as 3 or III, is called a numeral. This distinction between numbers, as concepts, and numerals, as signifiers, is something that computers cannot make. Both concepts and the signifiers that represent them need strings of bits to denote them. This is the simplest way of proving that humans are not machines and hence that technological development cannot drive economic growth indefinitely, requiring a radical change in the work ethic that has governed human affairs for thousands of years.

However, what de Saussure omitted in his dyadic view of signs was a representation of the territory being mapped. To obtain a complete picture, we need to adapt Peirce's triadic view of semiotics, which is not easy to follow because what he published on the subject in his lifetime is rather confused. The clearest statement of his semiotics is contained in an unpublished fragment he wrote about 1897, first partially published in the second volume of his collected works in 1932. In the first paragraph, Peirce writes, "Logic, in its general sense, is, as I believe I have shown, only another name for *semiotic*."¹²³ Then in the second

paragraph, he wrote that a sign, as a *representamen* creates the *interpretant* of the first sign, which stands for something, its *object*.¹²⁴



This triadic approach to semiotics is illustrated in what J. F. Sowa of IBM calls the ‘meaning triangle’ in *Conceptual Structures*,¹²⁵ inspired to do so by *The Meaning of Meaning* by C. K. Ogden and I. A. Richards, who learned about Peirce’s semiotics in England from Victoria, Lady Welby, who had corresponded extensively with Peirce after he favourably reviewed a book she had written titled *What is Meaning?*¹²⁶

What this diagram illustrates is that there is an indirect relationship between language and the territory that language describes, not generally recognized by modern academic philosophers, focusing more attention on language than on the conceptual structures underlying language.

Indeed, the focus of attention in academia is so much on the superficial that the article on ‘concept’ in *The Oxford Companion to the Mind* states, “we cannot see at all clearly into our own minds by introspection,”¹²⁷ making it extremely difficult to understand the concept of concept, and thereby understand one distinction between intelligence and intellect.

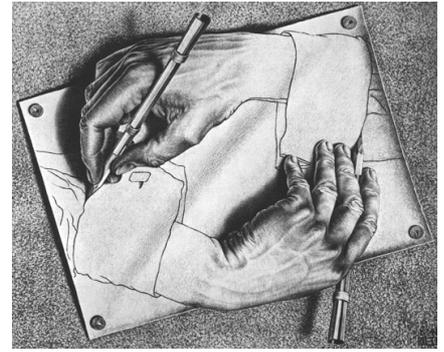
One scientist who broke the cultural taboo on self-reflection was Albert Einstein. In 1945, he wrote a letter to Jaques Hadamard, the author of *The Psychology of Invention in the Mathematical Field*, saying, “The words or the language, as they are written or spoken, do not seem to play any role in my mechanism (sic) of thought. The physical entities (sic) which seem to serve as elements in thought are certain signs and more or less clear images which can be ‘voluntarily’ reproduced and combined. ... Conventional words or other signs have to be sought for laboriously only in a secondary stage, when the mentioned associative play is sufficiently established and can be reproduced at will.”¹²⁸

We can thus see that Peirce was mistaken when he said that the representamen creates the interpretant. Rather, it is the other way round. Concepts, which often gradually emerge as mental images, rather like the development of an old-fashioned chemical photograph, come before signifiers. But not always. Sometimes concepts erupt in epiphanic eureka moments fully formed as both concepts and signifiers to denote them. But this is just the beginning of the creative process. For as Thomas A. Edison famously said, “Genius is one percent inspiration and ninety-nine percent perspiration.”

What this means is that both concepts and signifiers need to be regarded as referents, which denote the territory being mapped. For information systems architects need to include both their maps and mapmaking activities in the territory if they are to understand how the mind works, and thereby develop a comprehensive model of the psychodynamics of businesses, including the process of developing such models. It is thus not true that an objective territory exists independently of a knowing being, an assumption widely held by philosophers of science and scientists themselves.¹²⁹ Such a belief is implicit in Alfred Korzybski’s famous statement, “A map *is not* the territory it represents, but, if correct, it has a *similar structure* to the territory, which accounts for its usefulness.”¹³⁰

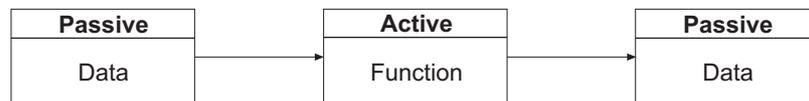
Rather, we need to recognize with self-reflective Intelligence that the observer and observed cannot be separated, a principle that brought David Bohm and J. Krishnamurti together about 1960.¹³¹ It is in this way that the fragmented, split mind can be healed. For as Bohm said, “content and process [of thought] are not two separately existent things, but, rather, they are two aspects or views of one whole movement. Thus fragmentary content and fragmentary process have to come to an end together.”¹³²

Thinking in this healthy way is rather like a TV camera filming itself filming, illustrated by M. C. Escher's famous lithograph 'Drawing Hands'.¹³³ It is in this wholesome manner that evolution can become fully conscious of itself, going even further than Julian Huxley foresaw. In his foreword to the first English translation of Pierre Teilhard de Chardin's *The Phenomenon of Man*, he wrote, "in modern scientific man, evolution was at last becoming conscious of itself—a phrase which I found delighted Père Teilhard."¹³⁴ It is interesting to note that Richard Dawkins is also delighted by this statement, as he told the world in February 2012 at a televised debate with the then Archbishop of Canterbury.¹³⁵



Knowing that and knowing how

Having healed the split mind by coming into union with the Divine like the mystics, the next step that IS architects need to take in the development of Mystical Pragmatics is to make a clear distinction between the two types of data, illustrated in this basic diagram of data processing:



The key point about this diagram is that in a stored-program computer, programs, as active data, are stored as binary digits (bits) in the main memory of the machine, just like passive data, such as numbers and strings, which they process. In terms of hardware, this distinction is implemented in the central processing unit (CPU) and in random-access memory (RAM), corresponding to what Charles Babbage called the Mill and Store in his Analytical Engine, terms he borrowed from the textile industry.¹³⁶ He envisaged that the instructions needed to operate the machine would be entered on punched cards, like those that Joseph-Marie Jacquard had invented to automatically control the patterns of weaving of cloth in a loom. Indeed, in her memoir on the analytical engine, Ada Lovelace delightfully wrote, "We may say, most aptly, that the Analytical Engine weaves algebraic patterns just as the Jacquard-loom weaves flowers and leaves."¹³⁷

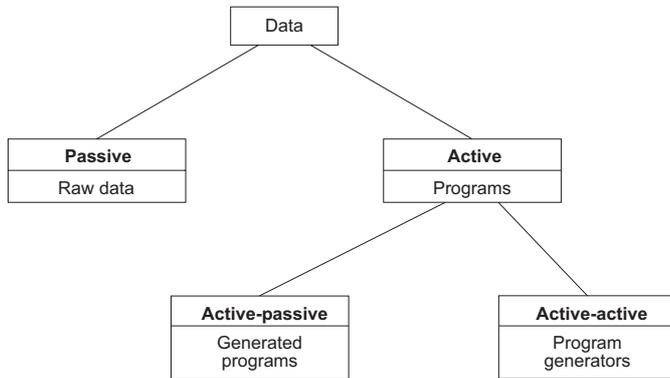
The first electromechanical and electronic computers designed and built in the 1940s, such as Zuse Z3, Colossus, and ENIAC, similarly held the instructions for these machines externally.¹³⁸ However, as the first paragraph in this treatise indicates, everything changed when programs could be held in the main memory at the end of that decade.

Now, it is vitally important not to be distracted by the hardware, for it is the software that determines how computers function. Indeed, as Andrew S. Tanenbaum said in *Structured Computer Organization*, "*hardware and software are logically equivalent*," written in italics to emphasize the central theme of his book. Hardware and software form a continuum, a fundamental principle that even computer scientists have difficulty in accepting. Whether a particular function is implemented in hardware or software is concerned with practical issues like cost, speed, memory, and flexibility.¹³⁹

In the diagram above, *function* is a generic term for operator, instruction, order, program, procedure, or process, whether carried out in a computer, in the mind, or in an organization. In programming languages, like C++ and PHP, functions, as active data, can be treated as passive data, passed as parameters to other functions.

Mystical Pragmatics

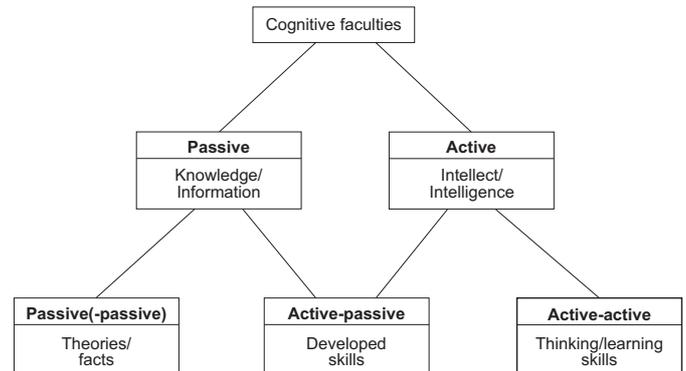
A Programming Language (APL), initially developed by Kenneth Iverson at Harvard University in the late 1950s as a concise mathematical notation to assist students in analysing various topics in data processing, goes even further.¹⁴⁰ Although APL is rather a cult language today, the language became IBM's principal management information tool in the 1970s after Iverson joined IBM. Now, while APL is a function-based language, like many others, unusually it also has system functions—`CF` and `FX`—which convert functions, as active data, to strings, as passive data, and back again.¹⁴¹ IBM's APL Data Interface (ADI) used these system functions to dynamically create APL functions to query the company database.



We can use this facility in APL to answer Alan Turing's question "Can machines think?" and so prove that artificial intelligence is impossible and that technological development cannot drive economic growth for very much longer. So how can we represent human thinking with the concepts of active and passive data in a computer? Well, as this diagram illustrates, there are two types of active data in computers, generated programs, like Adobe

Photoshop and Microsoft Word, and program generators, like Objective C and Python, which are examples of compilers and interpreters, respectively. So if a computer could think for itself, an APL function would need to dynamically create a new function entirely on its own, without any help from a human programmer.

We can see that this is not possible most clearly from the analogous qualities in human beings, as this diagram illustrates. As Gilbert Ryle pointed out in *The Concept of Mind* in 1949, human knowledge can be considered both as the facts we know and the skills we know how to perform; we 'know that' and we 'know how',¹⁴² which clearly correspond to passive and active data in computers.



In turn, our developed skills, like playing chess, correspond to generated programs, while our thinking and learning skills correspond to program generators, like APL. The reason why we human beings are able to create APL functions from scratch and APL functions cannot is that the creative power of Life arises directly from our Divine Source in the vertical dimension of time, the existence of which is denied by many in the West, out of touch with Reality.

This means that the program *The Blind Watchmaker* running on Mac OS 9¹⁴³ that Richard Dawkins designed in the 1990s to show that evolution progresses without design could not have become manifest without Divine intervention, without the creative power Life arising from our Divine Source.

Logic and psychology

Nevertheless, if Mystical Pragmatics is to intelligently serve humanity, information systems architects still need to show how we could use their modelling methods to cocreate a life-enhancing, post-monetary economic system that would enable everyone who wished to do so to realize their fullest potential as

Divine, Cosmic beings. To this end, we need to look briefly at the history of mathematical logic, in which Peirce played a pioneering role.

When Peirce began his lifelong studies of logic in the 1860s, giving his first lectures on the subject at Harvard University in 1865, he was much inspired by George Boole, who had laid down the foundations of symbolic logic with the publication of *An Investigation of the Laws of Thought on Which Are Founded the Mathematical Theories of Logic and Probabilities* in 1853. The first sentence of this book tells us its purpose: “The design of the following treatise is to investigate the fundamental laws of those operations of the mind by which reasoning is performed,” with the intention of exploring “the nature and constitution of the human mind”.¹⁴⁴ Apparently, he had been moved to do so by a mystical experience he had had when seventeen in early 1833, when the thought flashed through him as he was walking across a field that logical relations could be expressed in symbolic or algebraic form.¹⁴⁵

Sadly, however, Boole’s intentions were misunderstood, for as his widow Mary Everest Boole pointed out some fifty years later, “nearly all the logicians and mathematicians ignored the statement that the book was meant to throw light *on the nature of the human mind*.”¹⁴⁶ Peirce initially took a similar view, for he said in his very first lecture that all the definitions of logic that had evolved during the previous two millennia could be divided into two classes: “those which do not and those which do give to logic a psychological or human character”.¹⁴⁷

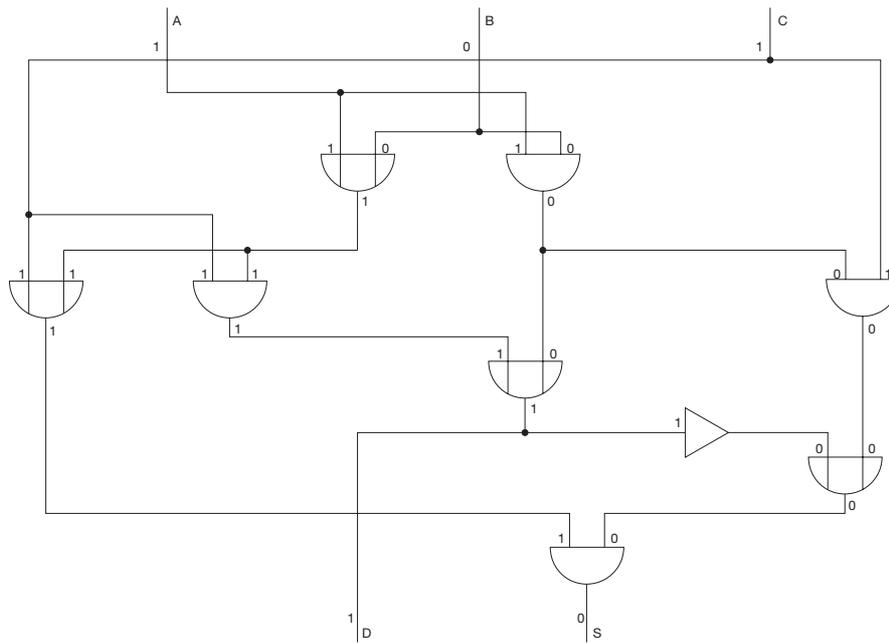
In examining the relative merits of these two views of logic, Peirce said, “we ought to adopt a thoroughly unpsychological view of logic”, for three reasons. First, “I say that the logical form is already realized in the symbol itself; the psychologists say that it is only realized when the symbol is understood.” So “logic needs no distinction between the symbol and the thought; for every thought is a symbol and the laws of logic are true of all symbols.” Secondly, Peirce said, “The second advantage of the unpsychological view is that it affords a most convenient means for exploding false notions of the subject,” going on to say, “The third advantage of the unpsychological view is that it points to a direct and secure manner of investigating the subject.”¹⁴⁸

Peirce maintained this view when he was employed as a lecturer in logic at John Hopkins University in the 1880s, more focused on notation than on what he would later call interpretants. Yet, his mystical experience in 1892 did not seem to lead to a change of perspective. In an unpublished classification of the sciences in order of generality he made in that year, he placed mathematics, logic, and psychology in the first three levels, in that order.¹⁴⁹ Four years later, he wrote a published paper emphasizing the primacy of mathematics, writing, “Mathematics is the most abstract of all the sciences. For it makes no external observations, nor asserts anything as real fact.”¹⁵⁰ Peirce seems to have taken this view in deference to his father Benjamin, who “had raised him as an extension of his own genius,” presciently having recognized Charlie’s genius at birth.¹⁵¹

Gottlob Frege and Bertrand Russell took a different view, regarding logic as the primary science, with mathematics secondary. However, they widened the gap between logic—as the science of mind and reason—and psychology—as the science of mind and consciousness—agreeing in an exchange of letters in 1903 that mathematical logic had nothing to do with psychology.¹⁵² In a sense, they were right, for mathematical logic led to the invention of the stored-program computer. But it can tell us very little how we human beings form concepts and organize our ideas.

For the computer is nothing but a linear logic machine, as Claude Shannon pointed out in his master’s thesis at MIT in 1937 titled ‘Symbolic Analysis of Relay and Switching Circuits’. As he proved, all

programs can be reduced to the Boolean operators of AND, OR, and NOT,¹⁵³ such as basic arithmetical operations of binary digits, as this diagram of a one-bit adder shows.¹⁵⁴



However, in 1913, Henry M. Sheffer showed that the basic Boolean operators could be defined in terms of a single NAND gate, known today as a Sheffer stroke ($|$),¹⁵⁵ which has a dual with the same properties: a NOR gate.¹⁵⁶ So, in theory, all computers could be programmed using just the Sheffer stroke, although they would be virtually meaningless, containing no semantics in human terms.

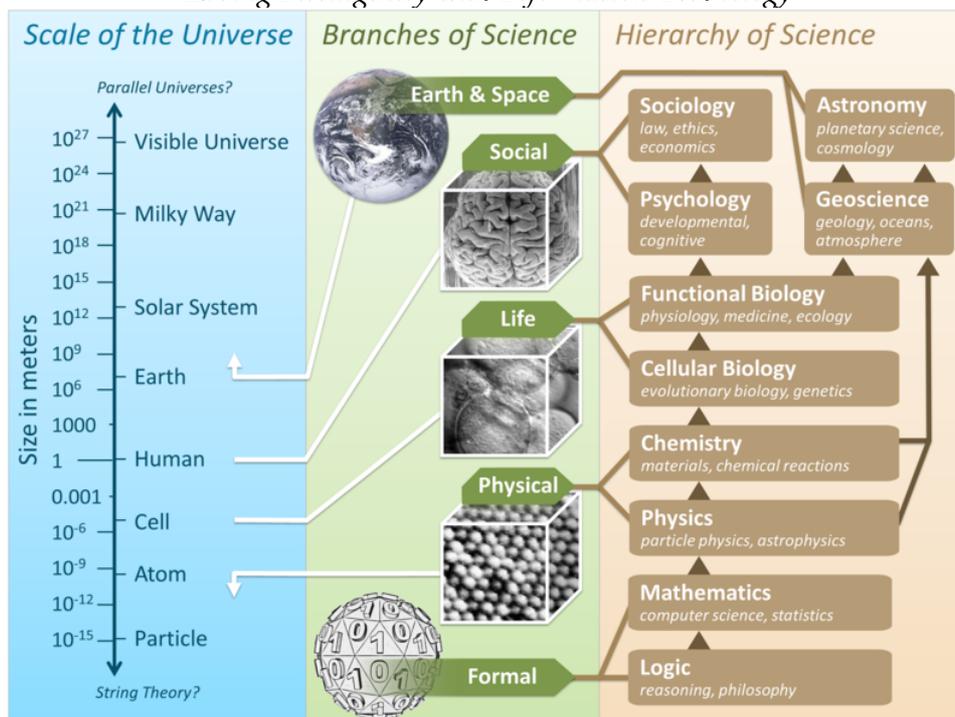
As with so many ideas in logic, Peirce anticipated Sheffer's landmark paper in 1880 with an unpublished manuscript titled 'A Boolean [sic] Algebra with One Constant', but not published until 1933 in Volume IV of his *Collected Papers*, titled *The Simplest Mathematics*, as the editors Charles Hartshorne and Paul Weiss pointed out.¹⁵⁷

Today, the split between logic and psychology is even wider, as the diagram on the next page, posted on Wikipedia in 2013, indicates.¹⁵⁸ The astrophysicist Martin Rees takes a similar view: "The sciences are sometimes likened to different levels of a tall building: logic in the basement, mathematics on the first floor, then particle physics, then the rest of physics and chemistry, and so forth, all the way up to psychology, sociology, and economics in the penthouse. But the analogy is poor," because "Problems in chemistry, biology, the environment, and human sciences remain unsolved because scientists haven't elucidated the patterns, structures, and interconnections, not because we don't understand subatomic physics well enough."¹⁵⁹

In other words, discoveries in astrophysics, quantum physics, genetics, and neuroscience can tell us little about how the mind works. So why is that physicists have persuaded the general public that physics is the most fundamental of the sciences, convincing governments to give them billions of euros of taxpayers' money in a futile search for a fundamental particle of matter and billions of dollars in a pointless search for life and the origin of the universe in outer space?

Scientific method

We can only answer this question by healing the split between logic and psychology, necessary if information systems architects are to perform their duties effectively and efficiently in conformity with the economic imperative of our times. So, if we are to understand how the mind works, this requires a



quite different approach both to the prevailing scientific worldview and to the scientific method from that which has prevailed for the past several hundred years.

To this end, we first need to note that human reasoning is much more complex than mechanistic deductive logic, as Peirce, himself, realized through his triadic logic. This was first published in the sixth and final paper he wrote on ‘Illustrations of the Logic of Science’ for the *Popular Science Monthly* in August 1878 titled ‘Deduction, Induction, and Hypothesis’. With his thoroughgoing, systemic approach to making our ideas clear, he went back to basics.

Peirce first called the major premise, minor premise, and conclusion of the syllogism ‘rule’, ‘case’, and ‘result’, respectively. He then showed that these three terms could be arranged in three different ways, shown in the table below.¹⁶⁰ He later called hypothesis *retroduction* or *abduction*, the latter term being most commonly used today. Abductive reasoning seeks to determine the causes of the phenomena that we observe as symptoms, giving three linear approaches to scientific method.

	Analytic	Synthetic	
	Deduction	Induction	Hypothesis
Given	Rule	Case	Rule
	Case	Result	Result
Inference	Result	Rule	Case

Deduction reasons from causes to effects.

Induction reasons from specific cases to general rules.

Abduction reasons from effects to causes.

In 1973, Harry E. Pople Jr. sought to mechanize abduction in what are called expert systems, defining it thus: ‘The essence of abductive inference is the generation of hypotheses, which, if true, would explain some collection of observed facts.’¹⁶¹ Such abductive, aetiological processes were then built into *Internist*, a medical diagnostic tool that was intended to overcome the limitations of *Mycin* and other similar expert systems.¹⁶² However, it is not clear whether or not such abductive diagnostic tools have had much success among clinicians, not the least because *abductive* is not in the *Oxford English Dictionary* or any other dictionary that I have consulted.

Yet, we need abductive reasoning to answer the most critical unanswered question in science: ‘What is causing scientists and technologists to drive the pace of change at exponential rates of acceleration?’ And Erich Fromm used abductive reasoning to suggest how we could heal our grievously sick society in *To Have or To Be?* in 1975. For in 1956, Fromm had written a book titled *The Sane Society*, whose first two

chapters are, “Are We Sane?”¹⁶³ and “Can a Society be Sick?”¹⁶⁴ answering these questions with a resounding ‘NO’ and ‘YES’, respectively. This book was a follow-on to *Escape from Freedom (The Fear of Freedom in the UK)* in 1941,¹⁶⁵ showing that we do not live in a free society, as the politicians tell us, but we are actually afraid of both Freedom and Love, that which we long for the most.

However, in his greatest masterpiece, Fromm looked at the conditions that could save us from psychological, ecological, and economic catastrophe, viewing our sick society in a similar way to a medical practitioner looking at a patient, a process he likened to Shakyamuni Buddha’s Four Noble Truths:

Symptoms: We are suffering and are aware that we are.

Cause: We recognize the origin of our ill-being.

Cure: We recognize that there is a way to overcome our ill-being.

Remedy: We accept that in order to overcome our ill-being we must follow certain norms for living and change our present practice of life.¹⁶⁶

For the Buddha too used abductive reasoning as the basis of his teachings, as an extension of his three marks of being, listed on page 3. Nonrecognition of the four Noble Truths is ignorance (*avidyā*), briefly stated here:

1. All existence is characterized by suffering, arising from sickness, old age, and death, and does not bring satisfaction (*dukkha*).
2. Suffering is caused by a craving for what one desires, binding beings to the ever-changing cycle of existence (*samsāra*).
3. The cessation of suffering comes when we let go of attachment to the relativistic world of form.
4. The means for the ending of suffering is the eightfold path of right, perfect, or complete view, resolve, speech, conduct, livelihood, effort, mindfulness, and concentration.¹⁶⁷

Of course, Western science knows none of this. Rather, induction lies at the heart of scientific, experimental method, which Francis Bacon introduced in Book II of *Novum Organum*, published in 1620. The title of this book is a reference to Aristotle’s *Organon*, in which Aristotle had introduced the deductive method of reasoning around two thousand years earlier. For in the *Advancement of Learning*, published in 1605,¹⁶⁸ Bacon had argued vigorously “Aristotle’s logic was entirely unsuitable for the pursuit of knowledge in the ‘modern’ age. Accordingly, *The New Organon* propounds a system of reasoning to supersede Aristotle’s, suitable for the pursuit of knowledge in the age of science.”¹⁶⁹

The principle of induction in science, not to be confused with induction in mathematics,¹⁷⁰ is very simple. It can be defined as follows: “If a large number of *As* have been observed under a wide variety of conditions, and if all those observed *As* without exception possessed the property *B*, then all *As* have the property *B*.”¹⁷¹

However, in Book I ‘Of the Understanding’ in *A Treatise of Human Nature* in 1739, David Hume showed that the principle of induction has an inherent weakness, writing, “If reason determin’d us, it wou’d proceed upon that principle, *that instances, of which we have had no experience, must resemble those, of which we have had experience, and that the course of nature continues always uniformly the same.*”¹⁷²

This really threw the cat among the pigeons, for it undermined the entire scientific enterprise. In *Objective Knowledge*, Karl R. Popper wrote that this situation exposed two critical problems in human reasoning: logical and psychological. Logically, we are not justified in making generalizations from particular situations, no matter how great the number of repetitions. Secondly, we persist in doing so “Because of ‘custom or habit’; that is, because we are conditioned, by repetitions and by the mechanism of the association of ideas; a mechanism with which, Hume says, we could hardly survive.”¹⁷³

Living Intelligently with Information Technology

Perhaps it is not surprising therefore that scientists believe that human beings are nothing but machines and therefore that artificial intelligence is quite possible. Even though we are the most adaptable of all the species, we are also creatures of habit, many of which we acquire through our collective, cultural, and personal conditioning, even from before we are born. As Rupert Sheldrake points out in *The Presence of the Past*, evolving regularities of nature are like habits, acquired through morphic resonance with similar structures, developing over time and depending on what has happened before and on how often it has happened. This ubiquitous principle applies alike to crystals, rabbits, and the collective memory of humanity.¹⁷⁴

So we need to bear in mind that although liberalism is the only viable political option for humanity at the present time, from Latin *liber* 'free', conservatism is also a natural state of being. For it protects the organism in what systems theorists call homeostasis, from Greek *ὁμοιος* 'of the same kind, like, similar', from PIE base **sem-* 'one', and *stasis* 'placing, setting', from PIE base **stā-* 'to stand'. In this respect, there is little difference between Chinese political leaders seeking stability and Christian fundamentalists in the USA seeking autoteria 'self-preservation', from Greek *autos* 'self' and *sōteria* 'salvation, preservation', from *sōtēr* 'saviour, preserver, deliverer', from *sōs* 'safe and sound, healthy, entire; sure'.

Materialistic scientists are another group whose intransigence is inhibiting humanity from intelligently adapting to the rapidly changing world that they, themselves, are causing through their creativity. Freeing scientists and non-scientists alike from what William Blake aptly called our 'mind-forged manacles' is not made any easier because there is, as yet, no satisfactory solution to the problem of induction.

Popper, himself, attempted to resolve this issue by saying that while we cannot verify scientific truths through experimental testing, we can refute conjectures and hypotheses.¹⁷⁵ It is falsification that distinguishes scientific knowledge from the ravings of a lunatic,¹⁷⁶ answering Bertrand Russell's statement in *History of Western Philosophy* that if we cannot base science on induction "there is no intellectual difference between sanity and insanity."¹⁷⁷

However, in a standard textbook on scientific method for the Open University in England, A. F. Chalmers pointed out that this approach is flawed. He states, "Theories cannot be conclusively falsified because the observation statements that form the basis of falsification may themselves prove to be false in the light of later developments."¹⁷⁸ For all observation statements are theory dependent, and when theories change, these observation statements may possibly change.

Chalmers then went on to say that we can resolve what he called 'naive falsificationism' by viewing scientific theories as evolving structures, which Thomas S. Kuhn famously called 'paradigms' from the Greek word *paradeiknumi* meaning 'show side by side'. However, this is not always as straightforward as it might seem. For Kuhn made a clear distinction between normal science, which works within the context of a particular paradigm, and scientific revolutions, when a radical change is made to the conceptual structures that guide scientific research. For Kuhn, "normal science means research firmly based upon one or more past scientific achievements, achievements that some particular scientific community acknowledges for a time for its further practice."¹⁷⁹ In contrast, "at times of revolution, when the normal scientific tradition changes, the scientist's perception of his environment must be re-educated—in some familiar situations he must learn to see a new gestalt."¹⁸⁰

Kuhn went on to say that it is as much the consensus of scientific communities that decides what paradigms should be used as rational argument. In other words, Kuhn asserted that science is as much a social activity as an objective, rational process. This observation of the world as it is was not too popular in some quarters. For instance, Imre Lakatos did not like what philosophers call 'relativism', although

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Kuhn denied that he was a relativist. While supporting the notion that scientific theories are structures, Lakatos sought a way of restoring both rationalism and absolutism to science.¹⁸¹

He attempted to do this with the concept of a 'hard core' that scientific research programmes should adhere to. "The hard core of a programme ... takes the form of some very general theoretical hypotheses from which the programme is to develop." For instance, "The hard core of Newtonian physics is comprised of Newton's laws of motion plus his law of gravitational attraction." Most particularly, "any scientist who modifies the hard core has opted out of that particular research programme,"¹⁸² typically being ostracized by her or his colleagues. It is therefore not surprising that scientists with a spiritual or even mystical orientation have been very careful to keep their experiences secret.

The next player in this game to appear was Paul Feyerabend. Feyerabend was concerned that these hard-core paradigms and methods could inhibit the growth of scientific knowledge. In *Against Method*, he therefore proposed an anarchistic approach to learning in which "anything goes". Most particularly, he wanted to challenge the claim that scientific method is superior to any other method of developing knowledge about ourselves and the world we live in. For if science is to play its full part in the world, we need to look at it in the context of the social environment in which it is taking place. As Feyerabend said, we need to "free society from the strangling hold of an ideologically petrified science just as our ancestors freed us from the strangling hold of the One True Religion!"¹⁸³

In other words, as a growing number of scientists are beginning to realize, if humanity is to resolve the great crisis it is facing at the present time, we need to free science of scientism, a generally derogatory term indicating a belief in the omnipotence of scientific knowledge and techniques. For instance, at a conference in Prague in the spring of 1992, organized by the International Transpersonal Association, titled 'Science, Spirituality, and the Global Crisis', the transpersonal psychologist Charles Tart handed out a sheet of paper dated 1983, one side stating what he called 'The Western Creed', beginning with these words:

I BELIEVE - in the material universe - as the only and ultimate reality - a universe controlled by fixed physical laws - and blind chance.

I AFFIRM - that the universe has no creator - no objective purpose - and no objective meaning or destiny.

The first two paragraphs of 'A Transpersonal Creed' on the other side of this sheet are:

I BELIEVE that the universe is spiritual as well as material, controlled by a combination of both physical and spiritual laws.

I AFFIRM that human beings are part of an integrated Order of Life; that we have the potential to evolve toward higher levels of this Order; and that seeking such evolution is one of the highest values of human life.

Then in 2009, in *Soul Power*, Anne Baring and Scilla Elworthy, founder of Peace Direct and the Oxford Research Group, highlighted some of the beliefs that are presented to us as incontrovertible truths, distorting our view of reality and leading to our alienation from nature and from soul:

- a) The belief that 'God' is separate from this world and that we were given dominion over the Earth.
- b) The secular belief of scientific materialism, that matter is primary and gives rise to mind as a secondary phenomenon. Thus our consciousness is a by-product of the neurology and biochemistry of the brain.¹⁸⁴

Continuing in this vein, in January 2012, the biologist Rupert Sheldrake published *The Science Delusion*, an obvious riposte to Richard Dawkins' *The God Delusion*. He opened by saying, "This book is pro-science. I want the sciences to be less dogmatic and more scientific. I believe that the sciences will be regenerated when they are liberated from the dogmas that constrict them." He then defined the 'scientific creed', ten core beliefs that most scientists take for granted:

1. Everything is essentially mechanical. Dogs, for example, are complex mechanisms, rather than living organisms with goals of their own. Even people are machines, 'lumbering robots', in Richard Dawkins's vivid phrase, with brains that are like genetically programmed computers.

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2. All matter is unconscious. It has no inner life or subjectivity or point of view. Even human consciousness is an illusion produced by the material activities of brains.
3. The total amount of matter and energy is always the same (with the exception of the Big Bang, when all the matter and energy of the universe suddenly appeared).
4. The laws of nature are fixed. They are the same today as they were at the beginning, and they will stay the same for ever.
5. Nature is purposeless, and evolution has no goal or direction.
6. All biological inheritance is material, carried in the genetic material, DNA, and in other material structures.
7. Minds are inside heads and are nothing but the activities of brains. When you look at a tree, the image of the tree you are seeing is not 'out there', where it seems to be, but inside your brain.
8. Memories are stored as material traces in brains and are wiped out at death.
9. Unexplained phenomena like telepathy are illusory.
10. Mechanistic medicine is the only kind that really works.¹⁸⁵

The integral philosopher Ken Wilber has also sought to overcome the problem of scientism in his attempts to integrate science and spirituality by introducing a radically new approach to scientific method. Following St Bonaventure and Hugh of St Victor,¹⁸⁶ Ken points out that we human beings have three modes or eyes of acquiring knowledge: “the *eye of flesh*, by which we perceive the external world of space, time, and objects; *the eye of reason*, by which we attain knowledge of philosophy, logic, and the mind itself; and the *eye of contemplation*, by which we rise to a knowledge of transcendent realities”.¹⁸⁷

Wilber then goes on to assert that the same scientific method can apply to each of these three eyes, what he calls “the three strands of all valid knowing”:

Instrumental injunction. This is an actual practice, an exemplar, a paradigm, an experiment, an ordinance. It is always of the form, ‘If you want to know this, do this’.

Direct apprehension. This is an immediate experience of the domain brought forth by the injunction; that is, a direct *experience* of apprehension of data (even if the data is mediated, at the moment of experience it is immediately apprehended). William James pointed out that one of the meanings of ‘data’ is direct and immediate experience, and science anchors all of its concrete assertions in such data.

Communal confirmation (or rejection). This is a checking of results—the data, the evidence—with others who have adequately completed the injunctive and apprehensive strands.¹⁸⁸

However, even this scientific method does not enable us to answer the question, “What is causing the pace of scientific discovery and technological invention to accelerate exponentially?” For it is too anthropocentric. We cannot understand the Divine from a human perspective. We can only understand what is happening to humanity at the present time by taking God’s perspective, recognizing, with Meister Eckhart, that God’s eye and the human eye are one and the same.

By standing outside ourselves in this manner, like astronauts returning from the Moon, we can create an objective body of knowledge that includes our subjective experiences. For in *Objective Knowledge*, Popper suggested “that it is the aim of science to find *satisfactory explanations*, of whatever strikes us as being in need of explanation.” By *explanation*, he meant finding the unknown but true causes (the *explicans*) that logically entail that which is to be explained (the *explicandum*), which is another definition of abductive reasoning, although Popper did not use the term. “Thus, scientific explanation ... will be *the explanation of the known by the unknown*.”¹⁸⁹ And the ultimate unknown explicans that is the cause of everything is the Datum of the Universe, experienced as Cosmic Consciousness, underlying all the data patterns of experience, prior to interpretation by a knowing being.

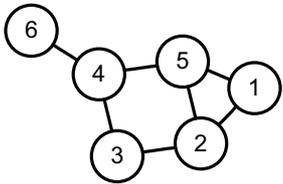


So if we are to intelligently manage our business affairs with full understanding of what we are doing, we need to bring meaning to these hidden data patterns by turning to the simple structures in mathematics that underlie the semantic modelling methods that information systems used to build the Internet. These structures are mathematical maps and relations, where mathematics is viewed more as the

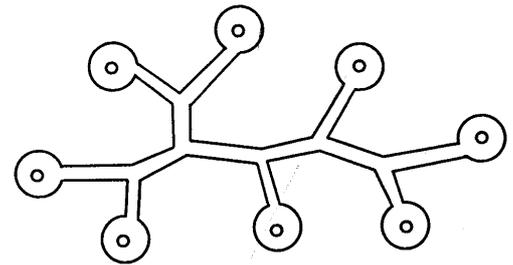
science of patterns and relationships than the science of number and space, as it has mostly been since the days of Pythagoras and Euclid. Finally in this extended section, we add some meaning to these underlying structures by looking at the way structured systems design evolved into taxonomic systems, where taxonomy is the science of classification.

Mathematical mapmaking

First, the foundations of mathematical mapmaking were laid down in 1736, when the Swiss mathematician Leonhard Euler was asked if it were possible to take a walk in Königsberg, the capital of East Prussia, in such a way as to cross every bridge in it once and only once and return to the starting point.¹⁹⁰ Euler solved the problem through mathematical abstraction, by representing bridges as arcs between landmasses, viewed as nodes, illustrated here.



Peirce made an initial attempt in 1885 to present his logic in a graphical way in his first draft of the first chapter on *A Guess at the Riddle* titled ‘One, Two, Three’, mentioned on page 6. He depicted his vision of a triadic universe with this diagram, writing, “the three essential elements of a network of roads are road about a terminus, roadway-connection, and branching,” somewhat more complex than Euler’s dyadic mapmaking technique.¹⁹¹



Peirce then went on to depict his Algebra of Logic, published mainly in the *American Journal of Mathematics* in 1880¹⁹² and 1885¹⁹³ as ‘existential graphs’, which he described as his *chef d’oeuvre*.¹⁹⁴ However, much of this work was done during the two decades either side of 1900, when Peirce was going through a great personal crisis. So his thoughts on the subject are much confused, only some of which have been published, not understanding the simplicity that underlies the complexity of human reasoning. As the Peirce Edition Project says on its home page, “much of what Peirce wrote remains in manuscript form, unpublished and in significant disarray.”¹⁹⁵

Perhaps this is not surprising, for, in conformity with the superficiality of Western thought, Peirce was more focused on what he called the sign or representamen than the interpretant. So there is no need to dwell too long on this subject. All we need to do is to identify a few seeds that have borne much fruit over a century later following the invention of the stored-program computer and the introduction of information systems architects into business.

Book II of the fourth volume of Peirce’s *Collected Papers* begins with a piece that he wrote around 1903 titled ‘Graphs’, which explores how Euler’s diagrams, distinct from his mapmaking method, could be used to represent the syllogism.¹⁹⁶ There is nothing complex about this way of showing the relationships between concepts, which John Venn extended in 1880, for it was included in the new maths, taught to primary school children, in the 1960s.¹⁹⁷

Chapter 4 of Book II then contains some basic definitions from the same year taken from a piece titled ‘Logical Tracts, No. 2’. First, Peirce defined a *logical graph* as a graph or superficial diagram or representamen that represents logical relations iconically, so as to be an aid to logical analysis. Continuing, he wrote:

An *existential graph* is a logical graph governed by a system of representation founded upon the idea that the sheet upon which it is written, as well as every portion of that sheet, represents one recognized universe, real or fictive, and that every graph drawn on that sheet, and not cut off from the main body of it by an enclosure, represents some fact existing

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in that universe, and represents it independently of the representation of another such fact by any other graph written upon another part of the sheet, these graphs, however, forming one composite graph.¹⁹⁸

This is quite a mouthful. However, in essence it describes the essential challenge of modelling business enterprises never mind the Totality of Existence. An enormous number of sheets of paper are required, as programmers and systems designers discovered in the 1950s and 60s, when they set out to automate the jobs then being performed by human beings. We can resolve all this complexity through self-inquiry, recognizing that what appears in external form is actually a representation of what exists in consciousness.

To this end, Euler's maps are today called mathematical graphs, which consist simply of nodes and the relationships between them, a structure that is universal. A few examples are Indra's Net of jewels, the 'web of life' of systems theorist's terms,¹⁹⁹ and, of course, the Internet. The mathematical graph therefore provides the simplest way of representing continuity, which Peirce called synechism, encapsulated in the New Age mantra "We are all one."

Computer scientists make much use of a special case of this mapmaking technique called 'acyclical directed graph' (DAG). DAGs are so named because there is a flow between the nodes in linear time, with no turning back, a mechanistic process. But Mystical Pragmatics requires us to rise above the level of our machines, taking a mystical view of the mathematical graph. To this end, it is vitally important not to allow the body-mind-soul organism to be identified with one particular node. In Reality, all beings in the holographic Universe are the entire network. We are thus present in a world that exists before space and time, consisting only of meaningless data patterns, grounded in the Datum of the Universe.

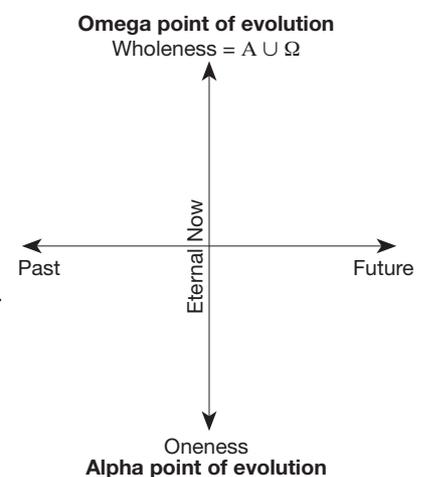
Now the key point about this simple structure is that it exists prior to interpretation by a knowing being. It therefore provides a means of bringing a sense of universal order to the overwhelming complexity of all the data patterns that underlie the Totality of Existence. In other words, other than making comparisons between nodes and relationships, we make no other comparisons, which we make when interpreting data patterns. Above all, we do not make judgements on what is right or wrong or good or bad, for as many spiritual teachers advise their followers, such judgements take us away from Nondual Love and Peace, from Truth and Freedom. There are no moral imperatives in mathematical graphs.

Of course, the Universe is much more complex than the simple diagram of a mathematical graph might suggest. Each node, as a form, is also a structure, consisting of forms and the relationships between them. So this abstract map of the Universe prior to interpretation has a hierarchical structure, existing at many different levels.

The two dimensions of time

As we are now living beyond time and space, beyond past and future, we are living in the Eternal Now, depicted as the vertical dimension of time in this diagram. In contrast, the horizontal dimension of time is where machines like computers function, as the diagram of data processing illustrates on page 19. So to rise above the level of our machines, free of the fear of death in all its forms, it is essential to live primarily in the Now, a notion made famous in Eckhart Tolle's best-selling *The Power of Now*. As he says,

To be identified with your mind is to be trapped in time: the compulsion to live almost exclusively through memory and anticipation. This creates an endless preoccupation with past and future and an unwillingness to honour and acknowledge the present moment and allow it to be. The compulsion arises because the past gives you an identity and the future holds the promise of salvation, of fulfilment in whatever form. Both are illusions.²⁰⁰



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From this Timeless perspective, morphogenesis takes place in the Eternal Now. In terms of data structures, these originate in the Absolute Datum, 'that which is given', the Formless Continuum that is the Alpha Point of the Universe. So the upward movement in the diagram represents evolution as the growth of complexity and consciousness, for as Pierre Teilhard de Chardin pointed out with his law of complexity-consciousness, the greater the complexity, the greater the consciousness.²⁰¹

But now something truly magical happens! Each node in these data structures can be experienced as a pool of consciousness, which expands as the pools merge into each other. So these pools become lakes, seas, and oceans, culminating in the vast Ocean of Consciousness, which is the True Nature that we all share, as mentioned on page 10. All the diverse streams of evolution have now converged in what Teilhard called a megasynthesis, 'a kind of gigantic psychobiological operation', which marks the Omega Point of evolution, its glorious culmination.²⁰² So the Ultimate Purpose of all our creative activities, as a manifestation of evolution, is not anything in the relativistic world of form, such as a painting, poem, scientific theory, or computer program. Rather, it is the meaningless, formless Datum of the Universe. So to find meaning in our lives, we paradoxically need to realize that the ultimate purpose of life on Earth is to realize the Bliss of Meaninglessness. Anything else is just an illusion.

Mystics have already discovered the Truth of Life as they move downwards in meditation towards the Origin of the Universe. As superconscious beings, we can thus feel the effect that is opposite to creative evolution. Each node becomes smaller and smaller until the entire network becomes just relationships between singularities. Then, as we drop even further, even these relationships disappear, and we return to the Continuum that is the Datum of the Universe. And just as the upward movement is evolution, the downward movement is involution, which we can experience as peaceful, egoless, gentle breathing, without the mind making comparisons and judgements as interpretations of the forms of data underlying the Universe.

It is in this delightful way that individual consciousness expands and deepens to such an extent that it becomes coterminous with Consciousness itself. This is what Aurobindo Ghose calls Supermind: "The Supermind is the Vast; it starts from unity, not division, it is primarily comprehensive, differentiation is only its secondary act."²⁰³ However, this model of evolution and involution is somewhat different from Aurobindo's, which Ken Wilber adopted in *Eye to Eye*.²⁰⁴ To Aurobindo, "The word *evolution* carries with it in its intrinsic sense, in the idea at its root the necessity of a previous involution."²⁰⁵ But this does not make sense, for in Reality, both evolution and involution take place in the vertical dimension of time, in the Eternal Now, not in the horizontal.

This evolutionary model is also somewhat different from that which Andrew Cohen describes in *Evolutionary Enlightenment*, published in 2011, even though he writes, "*This spiritual impulse moves in two directions simultaneously.*" But his two directions are not the upward and downward movement in the Eternal Now. Rather, "The path that most mystics in the enlightenment tradition have taken is not the future-oriented one; it is the perennial meditative path that countless seekers have followed for millennia in the pursuit of spiritual illumination," in the timeless.²⁰⁶

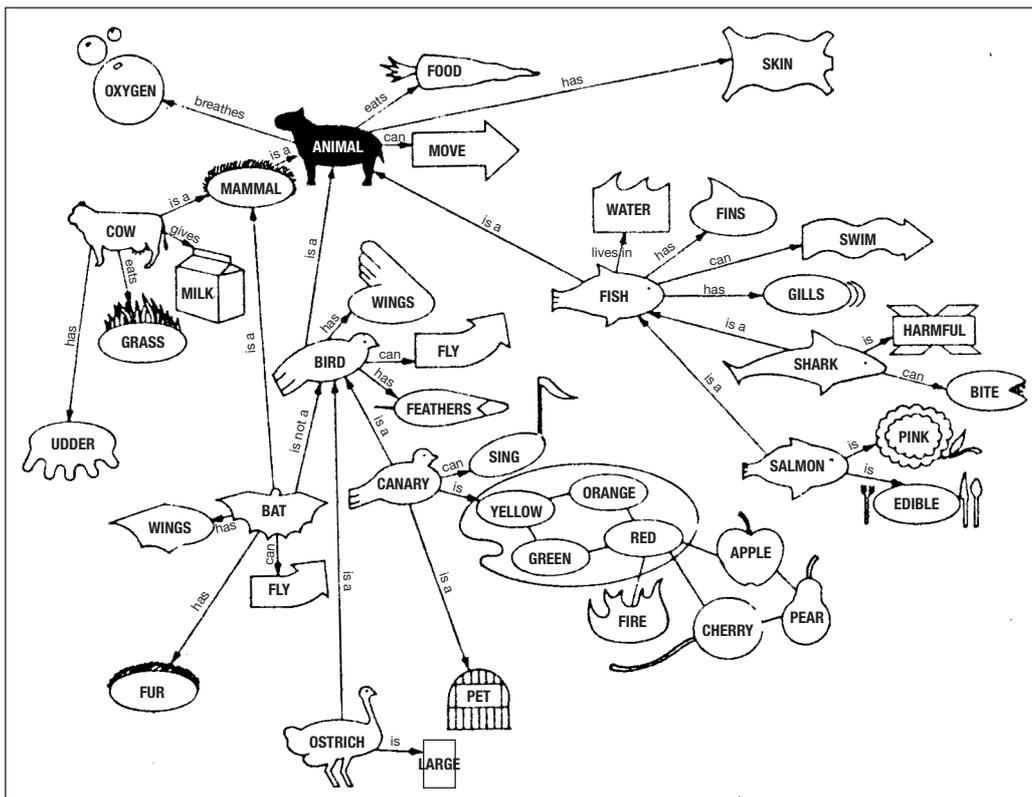
So, to Andrew, the two directions of the spiritual impulse are the downward in the vertical dimension of time, and the rightward in the horizontal. As he explains further, "Traditional enlightenment is about being free from history altogether. The new evolutionary enlightenment is about creating the future unendingly." But this is a delusion, not accepting that time does not exist in Reality, that evolution culminates in Wholeness at its Omega Point, and that there are an infinite number of eternities.

Nevertheless, the belief that the fundamental laws of the Universe do not apply to humanity is widely held by those who have not yet reached the Omega Point of evolution. For while we are identified with our body/mind/soul organisms, either as individuals or as a species, it is extremely difficult to accept that one day a generation of children will be born who will not grow old enough to have children of their own. If we are to equanimously come to terms with this life-and-death situation, we need to live primarily in the vertical dimension of time prior to interpreting the data patterns of experience. Then there is no one to care what happens, as Ramesh S. Balsekar pointed out in a book provocatively titled *Who Cares?! We are now at Peace*, with nothing to worry about, breathing gently as our energies move up and down from Oneness to Wholeness and back again. This is both conscious evolution and conscious involution, somewhat different from what Barbara Marx Hubbard and many others mean by the former term.

So how can we turn this mystical way of being into viable Mystical Pragmatics? Well, we can begin with Andrew Cohen's statement: "I believe the spiritual impulse today is calling us not away from the world but toward that big next step we need to take *in our world*." For once we have found the Truth, "We will find ourselves compelled not to rest there, but to reenter the fray of the creative process."²⁰⁷ But what is this world? We generally think of the world as existing outside of us. Yet, this is not the case. The world is within each and every one of us. The world we live in is a product of our fragmented, deluded minds. So to heal our grievously sick society, we need to heal our minds.

Calculus of relations

Once again, Peirce's innovative genius can help this healing process. To intelligently make our ideas clear and thereby reenter the fray of the creative process, we need to reinterpret the data patterns that underlie the Universe as meaningful concepts and relationships. In other words, we need to transform meaningless mathematical graphs into semantic networks, like this one, adapted from an article in the *New York Times* magazine on 24th January 1982 titled 'How the mind works'.



However, as such, this way of depicting semantic relationships does not enable IS architects to develop

information systems in business. A more rigorous mathematical method is needed, which begins with the mathematical theory of relations, first mentioned in a number of papers that August de Morgan wrote between 1850 and 1860 ‘On the Syllogism’, the fourth being called ‘Logic of Relations’.²⁰⁸

In 1870, Peirce took up the subject in a paper titled ‘Description of a Notation for the Logic of Relatives, Resulting from an Amplification of the Conceptions of Boole’s Calculus of Logic’.²⁰⁹ This was one of the first of Peirce’s many writings on logic, which are not easy to understand. For even though the essence of pragmatism is on ‘How to Make Our Ideas Clear’, as an evolutionary pioneer, he often fell short of this ideal. In 1996, Geraldine Brady was awarded Ph. D. for her studies of Peirce’s contribution to the history of mathematical logic,²¹⁰ expanded in book form in 2000.²¹¹ So let us keep things simple.

At heart, a relation in mathematics is an ordered set of elements, which can be combined in a wide variety of ways. To give some meaning to logical relations, we could say, for instance, that (a, b) represents the relationship ‘ a loves b ’ and that (a, b, c) represents the relationship ‘ a gives b to c ’. Peirce wrote extensively on what he called the ‘logic of relatives’. After his 1970 paper, when employed as a lecturer at the John Hopkins University in 1883, he edited a book titled *Studies in Logic* by his students, adding a Note B on the subject.²¹² Then in 1897, he wrote an article for *The Monist*, once again titled ‘The Logic of Relatives’.²¹³ And the following year, this was the title of the third lecture of a series of eight that he gave in a private house in Cambridge, Massachusetts on the theme ‘Reasoning and the Logic of Things’.²¹⁴

In 1970, Peirce’s logic of relatives evolved into the relational model of data, which Ted Codd of IBM introduced in order to unify the hierarchical and nonhierarchical approaches to database design that had emerged in the 1960s.²¹⁵ It cannot be a coincidence that Arthur Burks, who edited Volumes VII and VIII of Peirce’s *Collected Papers* in 1958, was Codd’s Ph. D. advisor in 1965, as John Sowa tells us.²¹⁶

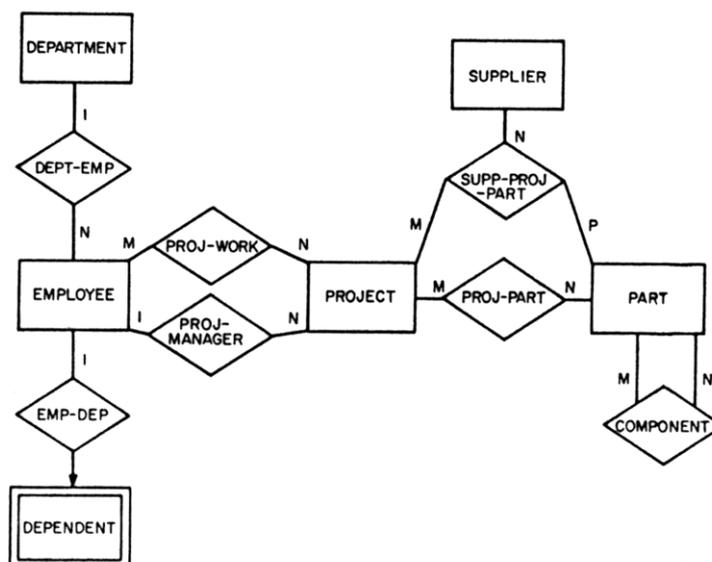
Anyway, with the relational model of data, Codd developed a nondeductive mathematical logic based on the mathematical theory of relations and first-order predicate logic, the most significant change in Western reason since Aristotle’s *Organum*, leading to the formation of a multibillion-dollar industry. Larry Ellison was one of the first to see the immense power of this data modelling method, forming Oracle, today a Fortune-500 company. You cannot order a book or airline ticket on the Internet without invoking the relational model of data behind the scenes.

So what is the relational model of data? Well, in essence, it is simplicity itself. A relation in the relational model is just a table, like the telephone directory below, listing names, addresses, and telephone numbers of subscribers. Here, telephone subscribers, called entities, have a number of attributes, corresponding to Aristotle’s distinction between subjects and predicates in *Prior Analytics*.²¹⁷ We have been keeping records in such tables since the very first civilizations. For the first writing to be discovered on a clay tablet in Uruk (modern Erech) dates back to 3300 BCE, detailing the allotment of malt to a number of people and with stock accounts of barley on the reverse.²¹⁸

Entity type	<i>Telephone subscriber</i>		
Attribute name	<i>Name</i>	<i>Address</i>	<i>Telephone number</i>
Attribute values	Anne Potter	72 Grove Road	624-4582
	Fred Tanner	4 Meadow Walk	982-3356
	John Cooper	31 Beech Boulevard	104-3911
	Elizabeth Smith	7 Chestnut Avenue	310-4574
	Jackie Butler	25 Orchard Way	955-4395
	Richard Fisher	67 Willow Crescent	109-2661
	Jenny Walker	22 Heather Drive	893-2748

However, in practice, database design is somewhat more complex than this simple table might suggest. For instance, a subscriber might have more than one telephone number and there could be many subscribers at any one address. So to keep the cells in a relation simple, a telephone company could define three relations for Subscriber, Subscription, and Location, with links between them. In addition, another relation could be for calls, with attributes for length of call and the number called, apparently also being recorded by the US National Security Agency to much consternation.

To depict the relationships between relations graphically, in 1976 Peter Pin-Shan Chen published a paper titled ‘The Entity-Relationship Model—Toward a Unified View of Data’,²¹⁹ drawing on a visual modelling technique that Charles Bachman had previously developed. As the next diagram shows, there are two types of node in such diagrams, depicting relations and the relationships between them. This is similar to John Sowa’s notation of conceptual graphs in the field of artificial intelligence.²²⁰



Although the relational model of data was slow to take off, by 1990 such data modelling techniques, as they are now generally known, had become a key tool in the information systems architect’s toolbox. As Richard Barker of Oracle Corporation wrote, the objectives of Entity-Relationship Modelling are:

To provide an accurate model of the information needs of the organization, which will act as a framework for development of new or enhanced systems. To provide a model independent of any data storage and access methods, to allow objective decisions to be made about implementation techniques and coexistence with existing systems.²²¹

Structured systems design

However, Entity-Relationship Modelling techniques do not capture all the semantics of a business enterprise, neither do they model the processes through which organizations run their operations. The central issue here is that there is a huge semantic gap between the way that computers represent passive and active data and the way that humans form and organize concepts. Not the least of these is the distinction between signifiers and concepts in the meaning triangle. So if we are to become masters of our computers rather than their slaves, as we mostly are today, IS architects need to close the semantic gap between the way that mathematicians and computer scientists look at computers and the way that ordinary humans do.

For instance, computer hardware recognizes some basic types of passive data, such as integers and floating point numbers of various degrees of precision. Computers also operate with various character sets, the basic character generally being one byte or eight bits in length. Examples are the 7-bit American

Standard Code for Information Interchange (ASCII) and the 8-bit Extended Binary Coded Decimal Interchange Code (EBCDIC) in IBM's System/360, introduced in 1963. These and other encoding vectors have today been expanded in the Universal Character Set (UCS), implemented in various levels of Unicode, enabling characters in virtually any language in the world to be represented in a standard manner in computers. Then there is the basic Boolean data type with two values: `true` or `false`, theoretically implemented in computer hardware in a single bit.

However, we humans work with many other types of data, of which the telephone subscriber is an example. So COBOL, the first high-level language for programming business applications, had a record type to represent the structure of the data held about one entity. But to see how such data types have evolved into modern programming and modelling methods used by IS architects, we need to close the semantic gap between the basic instructions in a computer, as active data, and our skills as human beings.

To this end, we need to go right back to the earliest days of computer programming and systems design, remembering that a computer program is basically an ordered sequence of instructions, executed one by one in the horizontal dimension of time. The basic instruction set operates at a higher semantic level than the one-bit adder. Instructions in a typical CPU include arithmetical operations on the basic numerical data types and the ability to load data into the CPU from the main memory and store it back again.

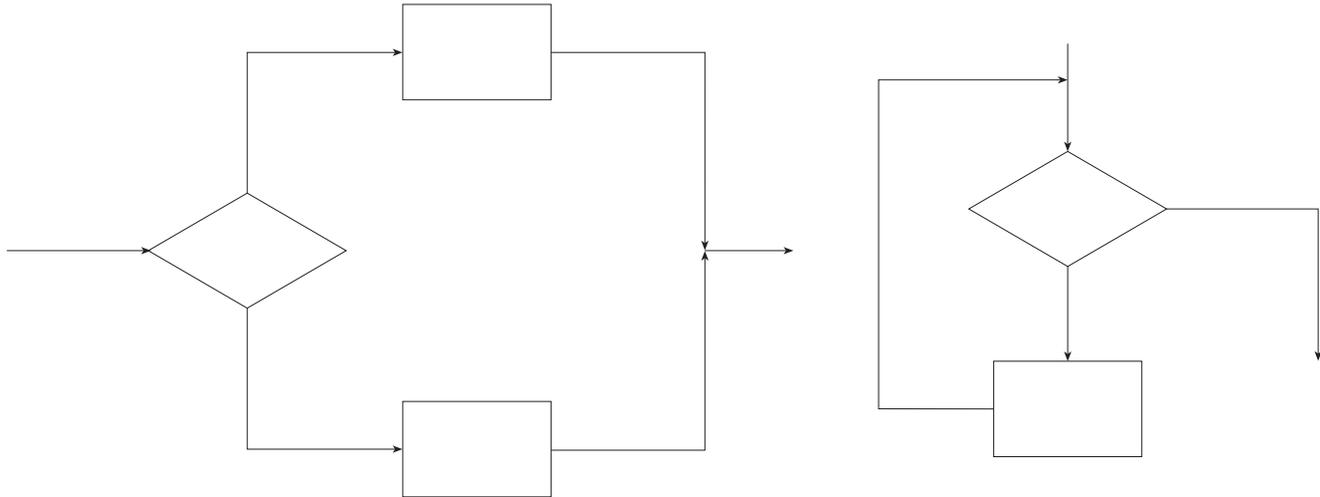
However, if this is all they are, computers could not simulate what is known as a universal Turing machine, capable of executing any algorithm that is computable. To this end, programs need to be able to change direction, either unconditionally or conditionally, based on some Boolean value. To this end, machine instructions in computers include branch or jump instructions, implemented as a `GOTO` instruction in Fortran, one of the first high-level languages, bringing computer programming closer to the way that humans actually think. Early attempts at systems analysis and design followed the machine in this respect, most familiar in ubiquitous flowcharts, which could cover many sheets of paper, like Peirce's existential graphs.

However, programs written with such instructions were very difficult to understand and debug for they could very quickly look like plates of spaghetti. But such instructions seemed to be essential to write programs. So how could they be avoided? Well, in 1965, Corrado Böhm and Giuseppe Jacopini published a landmark paper in Italian, translated into English the following year, in which they proved that the `GOTO` instruction is unnecessary, known today as the 'Structured Program Theorem'.²²² All programs could be written in blocks or subprograms of instructions with three basic structures. First, blocks could be executed in sequence, like individual instructions. Or they could be written with either a simple selection or iteration structure, depicted in the two diagrams below.²²³

However, like ground-breaking ventures in many fields, this paper was initially ignored by the mainstream of the data-processing industry. It was left to a few pioneering individuals to promote the benefits of structured or modular programming. Foremost among these was Edsger W. Dijkstra from the Netherlands who wrote a famous letter in 1968 called 'Go To Statement Considered Harmful', in which he described the 'disastrous effects' of the go to statement, and that it should be abolished from all-high level languages.²²⁴ The `GOTO` instruction had to go.

Two other pioneers who answered this call were Niklaus Wirth from Switzerland, who designed Pascal to incorporate the principles of structured programming within the language design itself, and C. A. R. Hoare, from the UK, who made fundamental contributions to the definition and design of programming languages.²²⁵ These developments led naturally to the structured analysis of information

systems, moving the design of such business systems closer to the structure of the human mind, away from the mechanical mathematical logic that underlies computers.



However, elsewhere in Europe at around this time, some other developments were taking place that were to be of even greater significance for the future of humanity. In 1965, Kristen Nygaard and Ole-Johan Dahl, together with Bjørn Myrhaug, at the Norwegian Computing Center designed a computer language called SIMULA (SIMULATION LANGUAGE)²²⁶ intended to simulate the operation of systems composed of discrete events, such as traffic patterns in towns and cities, communication networks, or the day-to-day operation of a retail business.²²⁷

The key concepts in SIMULA are class and object, where objects are instances of classes. But more than this. A class in SIMULA encapsulates both functions and data types into a single construct, leading to object-oriented programming languages, such as Smalltalk, Java, and Objective C, and object-oriented modelling systems, such as the Unified Modeling Language (UML) developed by Grady Booch, James R. Rumbaugh, and Ivar Jacobson of Rational Software, now a subsidiary of IBM.

The introduction of object-oriented modelling and programming methods totally transformed the job of information systems architect in a manner that few outside the industry understand. For now information systems could be designed and implemented in human rather than machine terms. The semantic gap between machine and human had been closed almost as far as possible. All that remained was to make explicit the universal system of thought that we all use everyday to form concepts and organize our ideas, described in the Section ‘The universal system of thought’ on page 41. In the meantime, let us look at a few examples of how object-oriented techniques have affected the lives of very many human beings on Earth.

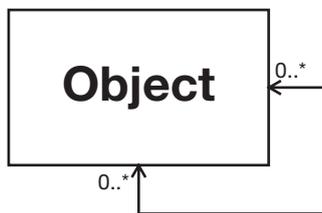
First of all, when systems analysts and programmers began to design information systems in the 1960s, they had to create the bricks and mortar they needed to build ‘houses’ almost from scratch. Yes, there were a few standard routines, such as trigonometric functions in Fortran, which could be reused. But these were rather limited. Object-oriented programming languages changed all that. They were built around class libraries, which could be combined in a systemic manner in the applications that abound today. No longer did IS architects need to reinvent the wheel over and over again. The basic constructs they needed to build systems were readily available to them, prepackaged. The result has been the hyperexponential expansion of the Internet and apps on digital devices like smart phones and tablets that we have seen since the 1990s.

Secondly, IS architects could work very much like architects who design residences and office blocks. Rather than programming directly with no idea of the system that they are to design, they often begin

with blueprints, in what is called Model-Driven Architecture (MDA). It is therefore not surprising that information systems architects in business²²⁸ are turning to Christopher Alexander's *A Pattern Language*, incorporating 'the quality that has no name': egoless, alive, free, eternal wholeness.²²⁹

Thirdly, classes led the way to a much richer approach to taxonomy as the science of classification than had been possible before. The word *taxonomy* was coined in French in 1813 by A. P. de Candolle²³⁰ from Greek *taxis* 'arrangement, order' and *nomia* 'distribution, method', from *nomos* 'custom, law', from *nemein* 'manage, control, arrange, assign'. So *astronomy* is an arrangement of the stars and *economy* is the management of the household. Similarly, *taxonomy* is an arrangement of an arrangement, today either meaning classification, in general, or specifically, the systematic classification of so-called living organisms, introduced by Carl Linnæus from Sweden in his seminal *Systema Naturae* in 1735.²³¹

For instance, we can classify *Homo sapiens* successively as primates, mammals, vertebrates, and animals, each level of classification being given a different name, such as species, genus, order, class, subphylum, and kingdom in this example. People working in libraries and computer-assisted information retrieval systems call such relationships broader and narrower terms in the advanced thesauri they use to assist with the organization of knowledge. An example of such a thesaurus is UNESCO's Science and Technology



Policies Information Exchange System (SPINES). In the UML, such relationships are called 'generalization', whose superclass is generally called **Object**. In this way, we can reduce the complexity of Euler's mapmaking method to a single node and relationship, depicting the underlying structure of the business world in a simple diagram, shown here.

The fourth example of the impact that object-oriented techniques have had on humanity relates to the human interface to computers. In this respect, the big breakthrough came in the 1980s with the desktop metaphor of Apple's Macintosh computer, named after a type of apple. This did not affect only the external interface, enabling humans to interact with machines in a naturally semantic manner. The Macintosh computer moved the control of the computer from the machine to human beings. Before this, computer applications would present users with a set of options in a predetermined menu. However, the Mac changed all this. Applications were built around an event handler, which could respond to the wide variety of actions that humans could take, not unlike interrupt handlers in operating systems, handling basic input/output operations.

Now, to understand the significance of object-oriented modelling techniques to the history of Western civilization we need to recognize that classes and objects in Simula and many other programming languages today correspond to Plato's distinction between universals and particulars, implicitly described in *The Republic*. This book was Plato's attempt to define the characteristics a utopian society, free from the Athenian democracy, which had executed his beloved Socrates for corrupting the minds of the youth of Athens. So, to Plato, philosophers, as lovers of wisdom, should be kings, the ruling authorities in a totalitarian state, a guiding principle much criticized by Karl Popper in *The Open Society and Its Enemies*.

From a cognitive perspective, Plato made a clear distinction between two levels of reality: that which is accessible to the physical senses and that which is beyond the senses, where true knowledge resides. This knowledge takes the form of Forms, the English translation of Greek *eidos* and *idea*, words that Plato seems to have used interchangeably. However, Plato did not consider Forms to be concepts, as pictures in the mind. Rather, they are eternal, existing independently of our minds.²³² So Plato could not fully accept Heraclitus' philosophy that all is flux.

Information systems architects are the modern-day equivalents of Plato's philosophers, but with more an empowering than a dominating role. To Plato, a philosopher is "the man who is ready to taste every

branch of learning, is glad to learn and never satisfied.”²³³ Knowing the immense power of abstract thought, a philosopher is therefore a generalist rather than a specialist, more focused on Wholeness than fragments. Philosophers also “have the capacity to grasp the eternal and immutable”. In contrast, those who are not philosophers “are lost in multiplicity and change”, and so are not qualified to be in charge of a state.²³⁴ Furthermore, philosophers “will be self-controlled and not grasping about money. Other people are more likely to worry about the things which make men so eager to get and spend money”.²³⁵

So, as IS architects know only too well, a society ruled by financiers, economists, and accountants is not viable; it is unsustainable. But what are eternal are not Plato’s Forms, which are really concepts, formed by interpreting forms of data. Rather, it is the Datum of the Universe that is Eternal, giving rise to all the data patterns in the Universe that we interpret as knowledge and information. So the modelling tools of IS architects outlined in this section provide us with the means of rebuilding our education and economic systems in harmony with the fundamental laws of the Universe.

Healing our sick society

Now that we have seen how we can use Peirce’s architectonic pragmatism to unify mathematics and mysticism and psychology and logic, we now need to show how Mystical Pragmatics can end the long-running war between science and religion and between religionists and antireligionists. This is the most critical issue of our times, one that has troubled humanity for thousands of years, so it is not easy to resolve.

In terms of science and spirituality, the central issue concerns Ultimate Reality, going right back to the split between East and West some five thousand years, as mentioned on page 1. This conflict is continuing even today. For instance, in 2011, Deepak Chopra and Leonard Mlodinow co-wrote *War of the Worldviews: Science vs. Spirituality*, the former arguing that Consciousness is all there is, with the latter, who co-wrote *The Grand Design* with Stephen Hawking, arguing that only the physical universe is reality. However, this is a pointless argument, quite different from that between the heliocentric and geocentric worldviews in the sixteenth and seventeenth centuries. For we know that Consciousness is Ultimate Reality with Absolute Certainty. So while we can have endless arguments about concepts in the relativistic world of form, when we form a worldview that is based on the Formless Absolute Truth, all conflicts come to end. All that remains is Peace, perfect Peace.

This war is also seriously affecting politics, as we see in the polarization of Western democracies between religionists and antireligionists, the extreme form of secularism. And in countries like many in the Middle East seeking to replace despotic rulers by democracies, the conflict between religionists and antireligionists is leading to much destruction and the deaths of many thousands of people. We can resolve this critical issue by noting that *secular* derives from Late Latin *sæcularis* ‘worldly’, from Latin *sæcularis* ‘of an age’, from *sæculum* ‘generation, age, period of time’, cognate with French *siècle* ‘century’. Medieval Christian texts used *sæcularis* to mean ‘temporal world’ in contrast to ‘spiritual world’. We see a similar distinction between the Lords Spiritual and Temporal in the upper house of the UK parliament. Yet, this split doesn’t really exist, for only the Eternal Now in the vertical dimension of time is Reality.

Such splits are the most obvious symptoms of our grievously sick society. Such a recognition is the essential first step in Peirce’s abductive scientific method, seeking to find the unknown root causes of what is known through observation. In *The Sane Society*, Erich Fromm used the word *alienation* as a name for this sickness, from Latin *alius* ‘other’. In French and Spanish, *aliéné* and *aliendo* are old words for the

psychotic, and *alienist* in English is still used to denote a doctor who cares for the insane.²³⁶ Fromm began his study of alienation in this way:

By alienation is meant a mode of experience in which the person experiences himself as an alien. He has become, one might say, estranged from himself. He does not experience himself as the center of his world, as the creator of his own acts—but his acts and their consequences have become his masters, whom he obeys, or whom he may even worship. The alienated person is out of touch with himself as he is out of touch with any other person.²³⁷

But while this passage describes how we have become slaves to mechanistic habits of thought and action, it does not go nearly far enough. The deepest split in the human psyche is that between humanity and the Divine, which is Reality, illustrated in the word *human*, whose root meant ‘earthling’, as mentioned on page 4. There is a great call in the sustainability movement today to save ‘Mother Earth’, on which all our lives appear to depend. However, this is an illusion, for the Earth cannot be saved any more than any other ever-changing structure in the relativistic world of form. For all beings in the Universe are born to die, including the Sun, which was formed about 4.5 billion years ago and which is destined to turn into a red giant and white dwarf in some five to six billion years time,²³⁸ estimates made by comparing the Sun with the lifespans of similar main-sequence stars in our galaxy. We are thus more or less at the midpoint of the ten billion-year life cycle of the Sun and hence of the Earth.

So just as we call individuals who are out of touch with Reality schizophrenics, it is not an exaggeration to say that society today is suffering from schizophrenia, for *schizophrenia* literally means ‘split mind’, from Greek *skhizo-* ‘split’, from *skhizein* ‘to split’, from PIE base **skei-* ‘to cut, split’, and *phren* ‘soul, mind, heart; sense, understanding, reason’, from PIE base **g^wbren-* ‘to think’.

In contrast, mystics through the ages have discovered how we can heal schizophrenia. For instance, Ramana Maharshi, the pre-eminent mystic in the twentieth-century, said, “By the inquiry ‘Who am I?’ the thought ‘Who am I?’ will destroy all other thoughts, and, like the stick used for stirring the burning pyre, it will in the end get destroyed. Then there will arise Self-realization.”²³⁹ And when asked by a devotee how she could get rid of the mind, Ramana replied, “Is it the mind that wants to kill itself? The mind cannot kill itself. So your business is to find the real nature of the mind. Then you will know that there is no mind.”²⁴⁰

However, while killing the mind is a rather brutal way of curing schizophrenia, it is not very practical. For such a traditional approach to the spiritual quest does not enable us to live intelligently with information technology. Mystical Pragmatics, based on conceptual clarity and integrity, requires us to recognize another symptom of our sick society. We are all suffering, to some extent or other, from delusion, literally ‘play falsely’, from Latin *dēlūsus*, past participle of *dēlūdere* ‘to play false, mock, cheat, deceive, delude’, from *dē* ‘down, to one’s detriment’ and *lūdere* ‘play’. The fact that our entire species is suffering from delusion is not something that is easy to accept. For instance, *The Penguin Dictionary of Psychology* defines *delusion* in this way:

A belief that is maintained in spite of argument, data and refutation which should (reasonably) be sufficient to destroy it. Care should be taken in the use of the term—one’s person delusion may be another’s salvation. Also note that the term is not typically used when one’s culture or sub-culture subscribes to the belief.²⁴¹

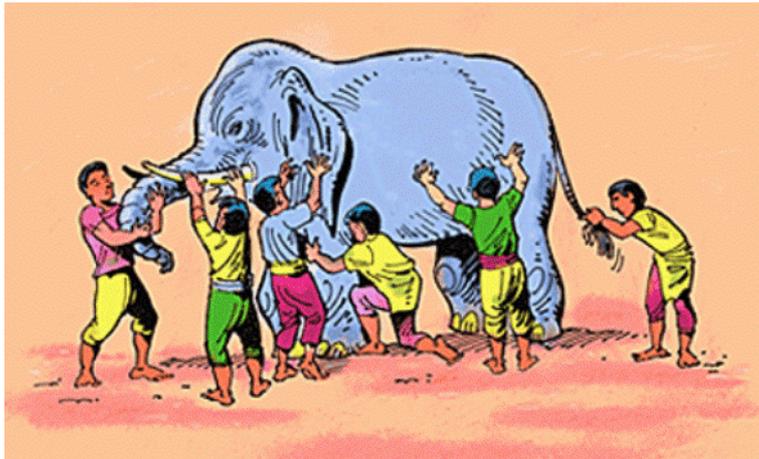
However, as we saw in the previous section when studying the job of the information systems architect in business, the Western way of reasoning that we have inherited from the ancient Greeks, further developed during the last millennium, is unsound. A quite new way of reasoning is required if we are to heal ourselves of delusion. And this means healing our minds, rather than killing them.

The central issue here is that we are taught by Western civilization especially that we are separate from the Divine, Nature, and each other, whereas, in Reality, we are all Wholeness, with no divisions anywhere,

a principle encapsulated in Peirce's synechism, which he confidently anticipated in 1893 would lead to the "onement of religion and science".

However, this great unification has not yet happened in society in general, essentially because of the way that evolution has unfolded for the past fourteen billion years of evolution since the most recent big bang. For this has been more divergent than convergent through its long history. First, large and small material objects were formed, such as stars, galaxies, atoms, and electrons in a process we can call hylogenesis, from Greek *ûlê* 'matter'. Then during the last three and a half billion years on Earth, we have seen the wondrous diversity of the species evolve. Biogenesis then gradually gave way to noogenesis—the evolution of the mind—about 25,000 years ago, the analytical mind becoming predominant at the dawn of history about 5,000 years ago. As a result, our minds have become fragmented and society has become divided into religious and national factions, academic specialization, and the division of labour in the workplace.

The problem of fragmentation is not new, as the ancient Indian story of the six blind men and the elephant well illustrates. There are several versions and interpretations of this story, but basically six blind men are asked to touch a part of an elephant and say what the elephant as a whole is like. As depicted in this picture, they touch the trunk, tusk, ear, leg, side, and tail and say that the elephant is a snake, spear, fan, tree, wall, and rope, respectively. Of course, they don't agree and much conflict and argument ensues, the story of the human race.



One way of interpreting this story is for us to learn that whatever our specialisms might be, we should respect the views of others, who might be looking at the elephant from a different perspective. But such specialist perspectives do not tell us anything about the elephant as a metaphor for the Absolute Whole, Ultimate Reality, and the Supreme Being. For, as J. Krishnamurti wrote in *Education and the Significance of Life*, "Can any specialist experience life as a whole? Only when he ceases to be a specialist."²⁴²

David Bohm highlighted the problem of fragmentation in the opening paragraphs of the first chapter of *Wholeness and the Implicate Order* titled 'Fragmentation and Wholeness':

Fragmentation is now very widespread, not only throughout society, but also in each individual; and this is leading to a kind of general confusion of the mind, which creates an endless series of problems and interferes with our clarity of perception so seriously as to prevent us from being able to solve most of them.

Thus art, science, technology, and human work in general, are divided up into specialities, each considered to be separate in essence from the others. Becoming dissatisfied with this state of affairs, men have set up further interdisciplinary subjects, which were intended to unite these specialities, but these new subjects have ultimately served mainly to add further separate fragments. Then, society as a whole has developed in such a way that it is broken up into separate nations and different religious, political, economic, racial groups, etc. Man's natural environment has correspondingly been seen as an aggregate of separately existent parts, to be exploited by different groups of people.

Mystical Pragmatics

Similarly, each individual human being has been fragmented into a large number of separate and conflicting compartments, according to his different desires, aims, ambitions, loyalties, psychological characteristics, etc., to such an extent that it is generally accepted that some degree of neurosis is inevitable, while many individuals going beyond the 'normal' limits of fragmentation are classified as paranoid, schizoid, psychotic, etc.²⁴³

Bohm was not the only one seeking to heal the fragmented mind in Wholeness. In 1970, a group of academics convened in Nice to address the problem of specialisms in the universities, Erich Jantsch coining the word *transdisciplinarity*, in contrast to *interdisciplinarity* and *multidisciplinarity*. Basarab Nicolescu then points out in *Manifesto of Transdisciplinarity* from 2002 that the discoveries of quantum physics mean that we need to abandon the Laws of Contradiction and Excluded Middle as the basis of logical reasoning, both in science and in society, in general. However, he does not go so far as embracing the Principle of Unity, and thereby the mystical, in his worldview. Ken Wilber goes much further with his integral philosophy, but also falls short of developing the genuine theory of everything, writing that the Apotheosis of human learning can never be reached.

A major problem here is that no matter how open-minded and open-hearted people might be, virtually every aspect of human endeavour contains apparently unchangeable belief systems that people seek to protect and defend because they provide them with a precarious sense of security and identity in life. In science, Imre Lakatos called these beliefs and assumptions the hard core of scientific method that can never be questioned, as we saw on page 26. Yet, as David Bohm said in an interview in 1985, when talking about Krishnamurti's enlightened approach to education, if we do not question these entrenched cultural beliefs and assumptions, then humanity is not a viable species.

We can call these core cultural beliefs—which exist in addition to multitudes of personal core beliefs we all carry within us—the seven pillars of unwisdom, a term introduced by Arthur Koestler in *The Ghost in the Machine* to highlight the absurdities and limitations of the biological, behavioural, mechanistic, and quantitative sciences.²⁴⁴ These pillars arise from the sense of separation that so many suffer from today—misconceptions of God, Universe, Life, humanity, money, justice, and reason. It is thus vitally important that we demolish these seven pillars, rebuilding the whole of society on seven pillars of wisdom by starting afresh at the very beginning. In brief, these seven pillars of unwisdom and wisdom are given in this table:

No.	Pillars of unwisdom	Pillars of wisdom
1	God is other	Humans are Divine beings
2	The Universe is the physical universe	The Universe is Consciousness
3	Life is a property of the DNA molecule	Life arises from our Divine Source like a fountain
4	Humans are machines and nothing but machines	Humans are creative beings living in the Eternal Now
5	Financial modelling methods	Sustainable business requires meaningful information
6	Individuals have the free will to act independently	There is no doership or ownership
7	Only either-or reasoning is valid	Both-and thinking is the Hidden Harmony

Even though the pillars of unwisdom provide many with a sense of security in life, transforming them into the seven pillars of wisdom is so fantastically wonderful that it can only be a matter of time before many educated people, at least, could awaken to Total Freedom. For many millions of people intuitively feel that there is something radically amiss with what is being taught by the organized religions, materialistic and mechanistic science, and monetary economies. They can sense the Presence of the Immanent Divine within themselves, whose existence is denied by theologians in the Abrahamic religions.

And as many know, the joys of listening to and making music and spiritual practices intended to heal deep wounds in the psyche cannot be explained by a science that only looks outwards, denying the validity of objective self-inquiry. Furthermore, there is a growing recognition that our health, well-being, and

even survival as a species requires us to cooperate harmoniously with each other, counteracting the competitive ethos urged on us by divisive economic and legal systems.

Now, we saw on page 24 that Erich Fromm adapted the Buddha's Four Noble Truths to find the root cause of our grievously sick society and thereby find a cure and remedy for our dis-ease. To do this, he pointed out that the so-called natural sciences based on the laws of physics could not solve this problem. Rather, "We need a Humanistic Science of Man as the basis for the Applied Science and Art of Social Reconstruction." However, he was uncertain of success, saying,

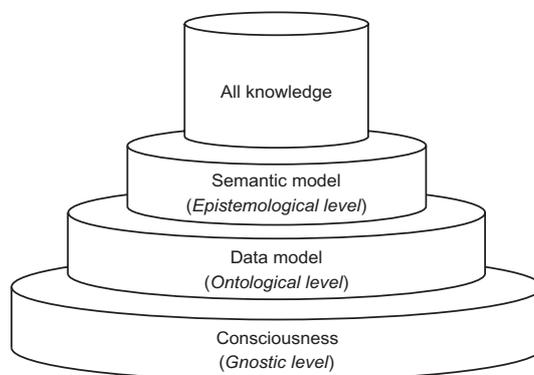
Whether such a change from the supremacy of natural science to a new social science will take place, nobody can tell. If it does, we might still have a chance for survival, but whether it will depends on one factor: how many brilliant, learned, disciplined, and caring men and women are attracted by the new challenge to the human mind.²⁴⁵

Fromm went on to say that he saw only a two per cent chance of such a radical transformation in consciousness coming about, a goal that no business executive or politician would regard as worthwhile pursuing. Nevertheless, he went on to say, "If a sick person has even the barest chance of survival, no responsible physician will say, 'Let's give up the effort,' or will use only palliatives. On the contrary, everything conceivable is done to save the sick person's life. Certainly, a sick society cannot expect anything less."²⁴⁶

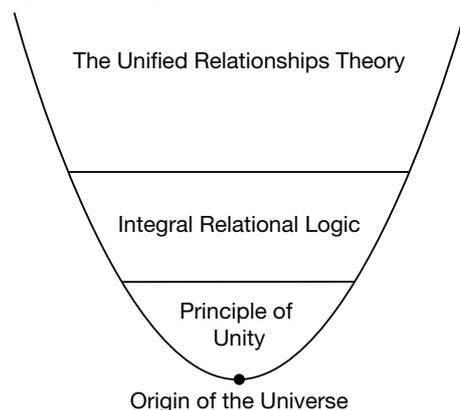
The universal system of thought

So what does the humanistic art and science that Fromm called for nearly forty years ago look like? Well, fairly obviously, we cannot see it by pointing telescopes at the night sky or by building particle accelerators looking for a supposed fundamental building block of matter. Rather, we can only develop such a coherent body of knowledge with self-reflective Intelligence through objective self-inquiry, breaking the most deeply rooted taboo in Western civilization.

Now as we saw when we explored the role of information systems architects, they need to adopt such an all-inclusive approach to business modelling if their maps are to provide a clear and comprehensive representation of the psychodynamics of business enterprises, including the mapmaking process itself. So we can solve the problem of fragmentation by unifying and generalizing the two modelling methods of IS architects, illustrated in this diagram of the foundations of all knowledge.



Building on the Datum of the Universe, viewed as Consciousness, the ontological level consists of a few universal data patterns and relationships that exist prior to interpretation by a knowing being. The epistemological level then consists of knowledge about knowledge, for *epistemology* 'theory or science of the method or grounds of knowledge' derives from Greek *epistēmē* 'knowledge' and *logia* 'discoursing'.



The data and semantic models are the universal system of thought, the commonsensical art and science of thought and consciousness that we all implicitly use everyday to form concepts and organize our ideas in tables and semantic networks or mathematical graphs, called Integral Relational Logic (IRL).

As this diagram illustrates, IRL is based on the Principle of Unity, which states *Wholeness is the union of all opposites*, emerging directly

from the Origin of the Universe, which we can regard as the Datum ‘that which is given’. The Principle of Unity, as an irrefutable, universal truth lies in the mezzanine level between the Gnostic and ontological levels in the foundations of all knowledge. For when data patterns first emerge from the Datum of the Universe, they always appear as pairs of opposites, also called duals or poles.

In turn, IRL provides the Gnostic Foundation, coordinating framework, and Cosmic Context for ‘all knowledge’, the much sought-for theory of everything, which we can call the Unified Relationships Theory (URT), as the diagram illustrates. So IRL is the primary art and science that underlies both all the sciences and the humanities, replacing deductive logic, mathematics, physics, biology, and any other discipline that claims to be the most fundamental.

For *science* derives from Latin *scientia* ‘knowledge’, past participle of *scīre* ‘to know’, from PIE base **skei-* ‘to cut, split’, also root of *schizoid*, *scīre* meaning here ‘to separate one thing from another, to discern’. The emphasis in science is thus more on analysis than synthesis, a divisive approach to reason that goes back to Aristotle’s *Prior Analytics*, in which he defined the syllogism, the beginnings of deductive logic. However, when discernment—from Latin *discernere* ‘to separate’—becomes the primary way of acquiring knowledge, we create unreal divisions between us, as Edgar Mitchell discovered when looking at the Earth after returning from the Moon in 1971. It is then up to our artistic abilities to put back together that which has been separated, for *art* derives from Latin *ars* ‘skill, way, method’, from PIE base **ar-* ‘to fit together’, also root of *coordinate*, *reason*, *harmony*, and *order*.

It is vitally important to recognize here that the URT is not something that exists externally to consciousness in the physical universe. For as David Bohm pointed out, “The word *theory* derives from the Greek *theoria*, which has the same root as *theatre*, in a word meaning ‘to view’ or ‘to make a spectacle’. Thus it might be said that a theory is primarily a form of *insight*, i.e. a way of looking at the world, and not a form of *knowledge* of how the world is.”²⁴⁷ What this means is that we need to abandon Peirce’s claim that signs are the basis for logic. We can only solve the riddle that he set himself through self-reflection, focusing attention on conceptual modelling as introspective inquiry. So the picture of Wholeness that thus emerges is not anything in the relativistic world of form. Rather, it is utterly Formless, like a blank sheet of paper.

Starting afresh at the very beginning

This blank sheet of paper not only represents the Omega Point of evolution; it also denotes the Alpha Point. So if we are to produce a valid map of the Universe from beginning to end and back again, we need to intelligently and consciously recapitulate the entire Cosmogonic Cycle in both our own ontogenies and in the phylogeny of our species, as we look at in the final section of this treatise.

In technical terms, this means that if we are base all our learning on the Truth, the mind first has to become a *tabula rasa* ‘blank slate’, a notion that has been proposed by a number of philosophers through the ages, particularly John Locke, who asserted that there are no innate principles in the mind, not even Aristotle’s Law of Contradiction, which many believe to be a universal truth.²⁴⁸

Such a radically new approach to learning is absolutely essential, for as we saw on page 1, in the 1940s, we human beings invented a machine that extends our mental abilities not our physical ones, like most of the tools that the *Homo* genus has created during two million years. Nothing can be the same again following the invention of the stored-program computer. Furthermore, as we see in Section ‘The Singularity in time’ on page 55, evolution is currently passing through the most momentous turning point in its fourteen billion-year history. And if we do not understand the root causes of this unprecedented

rate of evolutionary change, we cannot possibly intelligently manage our business affairs with full consciousness of what we are doing.

We can most simply adapt to our rapidly changing world by conducting a thought experiment, inspired by those conducted by physicists during the twentieth century, such as Albert Einstein. Einstein developed the special theory of relativity by asking what he would see if he looked at himself in a mirror while travelling away from the mirror at the speed of light. The answer is that he would see himself frozen in time, as he was when he left the mirror, for the light waves would travel at the same speed that he, himself, was travelling.

Similarly, to determine whether computers could develop artificial intelligence, exceeding any level of intelligence that humans might aspire to, we can imagine that we are a computer that switches itself off and on again so that it has no programs within it, not even a bootstrap program to load the operating system. We can thus answer Alan Turing's question "Can machines think?" by asking whether computers could model and program themselves to do the information systems architect's job. Then guided only by its inner guru, which means 'dispeller of darkness', as the *Guru Sutra* tells us,²⁴⁹ the computer has the task of organizing all knowledge in all cultures and disciplines at all times into a coherent whole, without any external authority to tell it how to do this. This experiment thus follows the motto of the Royal Society of London for Improving Natural Knowledge, founded in 1660: *Nullius in verba* 'take nobody's word for it.'

However, such a thought experiment cannot be conducted through an act of personal will, for it begins at the Origin of the Universe, at the Datum 'that which is given'. So we can only awaken to Total Freedom when a big bang erupts in Consciousness, rather like a kundalini awakening. For as Muktananda wrote in *Kundalini: The Secret of Life*,

[Kundalini] doesn't create this universe the way a human being builds a house, using different kinds of materials and remaining different from those materials. She creates the universe out of Her own being, and it is She Herself who becomes this universe. She becomes all the elements of the universe and enters into all the different forms that we see around us. She becomes the sun, the moon, the stars, and fire to illuminate the cosmos which She creates. She becomes *prana*, the vital force, to keep all creatures, including humans and birds, alive; it is She who, to quench our thirst, becomes water. To satisfy our hunger, She becomes food. Whatever we see or don't see, whatever exists, right from the earth to the sky, is nothing but *Chiti*, nothing but *Kundalini*. It is that supreme energy which moves and animates all creatures, from the elephant to the tiniest ant. She enters each and every creature and thing that She creates, yet never loses Her identity or Her immaculate purity.

As we are engaged in completing Peirce's studies in logic, we can also say that it is the *Logos* 'the immanent and rational conception of divine intelligence governing the Cosmos',²⁵⁰ that brings Integral Relational Logic into being, in the terms of Heraclitus, analogous to *Dharma* and *Tao* in the East, rather than *word*, the usual mundane translation, like the first verse of the Gospel of John. For, towards the end of the first century, John sought to explain to educated Greeks that Jesus was "the only begotten Son of God",²⁵¹ beginning his gospel with these words: "In the beginning was the Logos, and the Logos was with God, and the Logos was God."²⁵²

Such a life-changing awakening is also rather like a volcanic earthquake erupting in the depths of the Ocean of Consciousness, creating a tsunami in which everything is destroyed, as in Aceh province in Sumatra in December 2004. Using another metaphor, this is like demolishing the Tower of Babel that represents the entire world of learning and starting afresh at the very beginning. In terms of Hindu deities, which are just human energies emerging from the Divine, Shiva, the destroyer, and Brahma, the creator, must act in turn.



Mystical Pragmatics

Now, while such life-changing events are not unusual, they were little studied by psychologists until 1989, when William R. Miller set out with Janet C'de Baca to scientifically study what they call *quantum change*, “drawing on both the concept of a quantum leap and unpredictability in quantum mechanics”. To this end, a writer for the *Albuquerque Journal* wrote an engaging feature story on quantum change, inviting people to describe their experiences in confidential interviews. Miller and C'de Baca received eighty-nine telephone calls, leading to fifty-five interviews. These case studies then provided the basis for a tentative theory of these remarkable events, published in 2001, as *Quantum Change: When Epiphanies and Sudden Insights Transform Ordinary Lives*.

What they found is that quantum changes could be categorized in two types, with much overlap between them: insightful and mystical. We could also call the former cognitive, while Miller and C'de Baca call only the latter epiphanic. In a sudden insight, “a person comes to a new realization, a new way of thinking,” rather like the familiar ‘aha’ experience, but much deeper and of such a magnitude as “to leave the person stunned or breathless”. In such cases, “There may be no immediate sense of being acted upon or in the grip of something beyond the self, as is usually the case with epiphanies.”

On the other hand, mystical transformations, or epiphanies, are experienced as quite out of the ordinary, in many respects resembling classic descriptions of mystical experiences. However, as often as not, these are transitory, while with an epiphany the person knows immediately that something major has happened and that life will never be the same again. “What epitomizes the mystical type is the noetic sense of being acted upon by something outside and greater than oneself.”

But while such experiences can be described, often in poetic language, how can psychologists explain these phenomena within a discipline and worldview much influenced by the so-called natural sciences? Well, in the penultimate chapter of their book, Miller and C'de Baca made an attempt to develop such an explanation, but in the end said, “Perhaps there is something flawed in the way we think about human change. Perhaps we do not yet comprehend enough about psychological and spiritual reality to understand why quantum changes occur.”

However, as IRL is quite different animal from anything that has ever existed in the history of human learning, it is not easy to say what sort of animal it is. We can solve this problem through the way that this thought experiment is being conducted. As we are imagining that we are a computer that is endeavouring to integrate all knowledge into a coherent whole, we can say that IRL is an example of what Ken Wilber calls an ‘Integral Operating System’, or IOS, “a neutral framework” that “can be used to bring more clarity, care, and comprehensiveness to virtually any situation”. Ken’s basic IOS is called AQAL, short for “all quadrants, all levels”, which is short for “all quadrants, all levels, all lines, all states, all types”. However, IRL is more like a virtual machine operating system, such as IBM’s VM, which can run many different operating systems including itself, than Microsoft’s Windows or Apple’s Mac OS X. A key difference between IRL and AQAL is that AQAL, as a map-making method, cannot include itself, as the territory being mapped, in the map being developed, whereas IRL does.

This is contrary to what Christian de Quincey believed in 2001, when the managing editor of the *Noetic Sciences Review*, the journal of the Institute of Noetic Sciences. In a critical appreciation of Ken Wilber’s *Collected Works*, he says that the genuine theory of everything is impossible:

Because you cannot create a model or a map that contains itself. Where, for example, would the four-quadrants model fit into the four-quadrants model? Mathematical and logical proofs developed by Bertrand Russell and Kurt Gödel—along the lines that no set of all sets can itself be a set of the same logical category, type, or level—invalidates the claim. Both Alfred Korzybski and Gregory Bateson immortalized this dilemma with the phrase “the map is not the territory.” In this case (Wilber’s TOE), not only the map, but more crucially, the consciousness that created the map, cannot be

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found in its own creation. To attempt to make room for it would involve us (and Wilber) in a logical infinite regress. This meta-critique applies to any TOE, of course, not just Wilber's.²⁵³

The myth of Pandora's box well illustrates the challenge of starting afresh at the very beginning. Hesiod tells us that when Epimetheus married Pandora, the first woman, she was overcome with curiosity about her husband's large earthenware pot, covered with a lid, containing all evils and one good: hope. She lifted the lid, releasing all the evils, but before hope could also be released, she replaced the lid.²⁵⁴ This allegory well describes why even when we open the lid on our unconscious just a little, we so often shut it tight again before we reach the bottom, where the rewards of bringing our entire past—our collective, cultural, and personal unconscious—into the brilliant light of day are to be truly found. As an acquaintance of mine once said to me when I asked her why she did not look inside to discover why she was so unhappy, "I'm afraid of what I might discover." But if we have the courage to bring the entire unconscious of the human race into consciousness, what we reveal is not hope, but Nondual Love, which has no opposite, no object to love.

Now for this to happen on a global scale, each of us, as individuals, need to take responsibility for the entire evolution of the whole human race, as Andrew Cohen pointed out in *Freedom Has No History* in 1997. As he says, "To succeed, we must be prepared to do battle with the powerful conditioning, conscious and unconscious, of the whole race. That means we have to come out from the shadows and be seen. Like Atlas, we have to be willing to hold up the whole world on our shoulders. It's an awesome task."²⁵⁵

Primal concepts

So how can we get started with this experiment in learning? Well, there are no axioms in IRL, no assumed or self-evident truths, with which Euclid began his systemization of the mathematical theorems known at his time. Rather, as IRL is formed through a scientific experiment, we begin directly with human experience. Experience plays a key role in creativity, as R. D. Laing points out in *The Politics of Experience*: "What is called a poem is compounded perhaps of communication, invention, fecundation, discovery, production, creation. Through all the contention of intention and motives, a miracle has occurred. There is something new under the sun; being has emerged from nonbeing; a spring has bubbled out of the rock."²⁵⁶

So we can regard data patterns prior to interpretation by a knowing being as objective reality. And underlying all these uncountable data patterns is the Absolute, which we can call the **Datum** of the Universe, 'that which is given'. So the **Datum**, as a related bootstrap concept, provides us with the rock-solid foundation we need to live our lives. Everything in the Universe can be explained in terms of the meaningless **Datum** of the Universe.

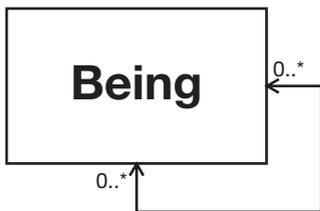
As we are engaged in developing a coherent map of the Totality of Existence, the next bootstrap concept is **being**, the central concept of Aristotle's ontology. As he said in *Metaphysics*,

There is a science which studies Being *qua* Being, and the properties inherent in it in virtue of its own nature. This science is not the same as any of the so-called particular sciences, for none of the others contemplates Being generally *qua* Being; they divide off some portion of it and study the attribute of this portion, as do for example the mathematical sciences.²⁵⁷

Being is a concept of the utmost generality, denoting any object, event, process, system, organism, state, feeling, form, structure, relationship, field, concept, class, character, symbol, religion, discipline, ism, ology, osophy, theory, language, culture, civilization, or any other way that I, or any other knowing being, can perceive, conceive, or imagine. **Being** is thus all-inclusive, denoting everyone's theories, opinions, points of view, beliefs, ideas, concepts, values, principles, propositions, theorems, etc., in all cultures and

disciplines at all times, past, present, and future. The bootstrap concept of **being** is the superclass in IRL, a class of the utmost generality and abstraction, denoted by **Being**, for classes are capitalized in IRL, as they are in object-oriented modelling.

In a mathematical graph, beings are both nodes and arcs, giving **form**, **structure**, **relationship**, and **meaning** as four basic building blocks for a coherent map of the Universe. In physics, relationships are called fields, such as gravitational and electromagnetic fields. However, there are many other types of field between forms, such as morphogenetic fields, which Rupert Sheldrake introduced in *A New Science of Life* in 1981, the year after I embarked on my own studies of such relationships. As none of us can say how



many other types of relationship might be discovered in the future, all we can say is that all beings in the Universe are related to all other beings, including themselves, in zero to many different ways, some of which can be classified and some of which defy categorization and must remain a mystery. We can thus draw a complete map of the Universe with just one node and relationship, a generalization of the most abstract class model in the Unified Modeling

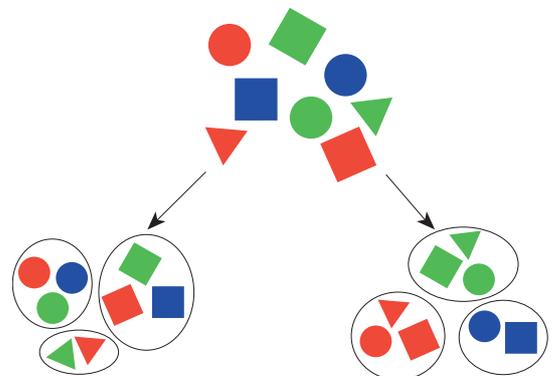
Language, depicted on page 36.

In IRL, we thus treat all concepts in an utterly equalitarian manner, not making any of them special, such as the fire, air, earth, and water of the ancients, or the mass, space, and time of modern science. For physicists, mathematicians, and programmers represent these concepts in their functions just like any other quantitative variable, as the equations $F = ma$ and $E = mc^2$ well illustrate. In IRL, we simply extend this equalitarian principle to all quantitative and qualitative concepts, as information systems architects do when designing business systems. In this simple way, we can free ourselves of the false belief that the Universe in the physical universe, realizing that Ultimate Reality is Consciousness. So this principle of egalitarianism is of the utmost importance, both in learning and in social affairs.

Building relationships

Now it is time to sort out the immense confusion that the world is in today by bringing all our thoughts into universal order. Like René Descartes, who similarly sought to unify all knowledge through systemic, sceptical reason, we use four rules: clarity, simplicity, integrity, and consistency. The last of these needs a little explanation. In IRL, the word *consistency* does not mean ‘not containing any logical contradictions’, as the eleventh edition of the *Concise Oxford English Dictionary* states. Rather it means ‘acting or done in the same way over time, especially so as to be fair or accurate’, to give another definition from COED.

To form concepts in this consistent, egalitarian manner, we can use David Bohm’s very general way of perceiving order in quantum physics: “to give attention to similar differences and different similarities”, a notion of order that the artist Charles Biederman gave him.²⁵⁸ In other words, we carefully examine the similarities and the differences in the data patterns of our experience, putting our interpretations into various sets as appropriate, set being the first bootstrap concept of interpretation.



In IRL, there are two principal ways of organizing our thoughts and concepts: in tables or relations and in semantic networks or mathematical graphs, just like the business modelling methods used by information systems architects to build the Internet. So combining concepts from both the relational

model of data and object-oriented modelling methods, the telephone subscriber in the relational model of data is the class **Subscriber** in IRL. The individual subscribers are instances of the class, corresponding to universals and particulars in Plato's *Republic* and the class-object relationship in object-oriented programming languages and modelling systems. These instances are entities, which have various attributes, giving three further primal concepts in IRL: **class**, **entity**, and **attribute**.

Applying these bootstrap concepts to the formation of IRL itself, we identify a number of distinct classes of attribute, such as **identifying**, **defining**, **nondefining**, **prototypical**, and **derived** attributes. This table of class **Quadrilateral** illustrates a couple of these types of attribute. *Name* is the identifying attribute, while the properties of each shape in the class are determined by three defining attributes.

Class name	<i>Quadrilateral</i>				
Attribute name	<i>Name</i>	<i>Shape</i>	Defining attributes		
			<i>Parallel sides</i>	<i>Equality of adjacent sides</i>	<i>Angle</i>
Attribute values	square		opposite pairs	equal	right
	oblong		opposite pairs	unequal	right
	rhombus		opposite pairs	equal	oblique
	rhomboid		opposite pairs	unequal	oblique
	trapezium*		only two		
	kite		none	two pairs equal	
	trapezoid*		none		

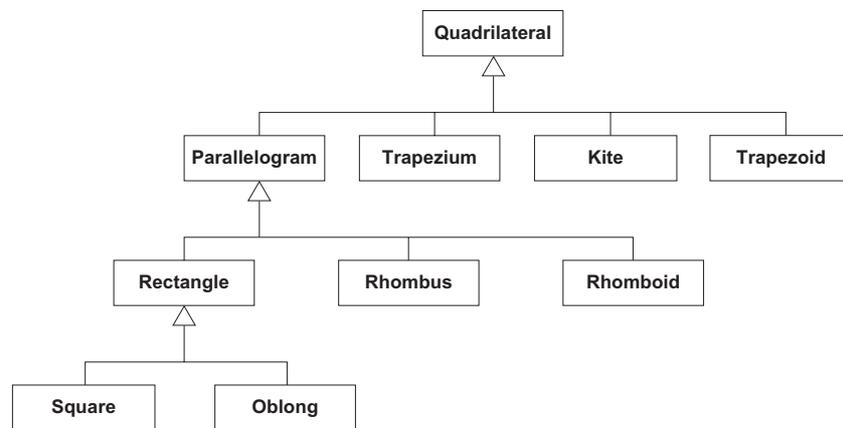
* These are British terms, using the words *trapezium* and *trapezoid* in the original meanings given by Proclus in the fifth century. In the late eighteenth century, the meanings of these two words were confusingly transposed, and they still are in the USA. In American English, a trapezium is a trapezoid and a trapezoid is a trapezium.

In IRL, as in the relational model of data, the possible values for a particular attribute in a class are called a **domain of values**, another primal concept, which can also be regarded as a **dimension**, for such domains measure the class-attribute in the broadest meaning of *measure*. So as there are an infinity of spatial dimensions in geometry, and countless other dimensions, there are an infinite number of dimensions in the Universe, not the four space-time dimensions of relativity theory, and far beyond the extra dimensions being postulated in string theory: ten, eleven, twenty-six, or more?

Tables or relations are a concise way of organizing information and knowledge, mathematical matrices being special cases. However, they do not capture directly all possible relationships, such as **generalization hierarchies** like animal, vertebrate, mammal, primate, and human. For instance, **Mammal** is an **abstract** class because it does not have immediate instantiations. In the **Quadrilateral** class above, we can in addition define subclasses **Parallelogram** and **Rectangle**, illustrated in the diagram below. And, of course, each box in the next diagram is also a class, each of which has countless instances, with attributes such as size and position.

As well as generalization hierarchies, there are also **aggregation** hierarchies in IRL, such as proton, atom, molecule, cell, and so on or section, department, division, and company in organizations. An

aggregation relationship is called ‘a-part-of’ relationship, in contrast to ‘a-kind-of’ relationship in class hierarchies. The essential difference between these two types of hierarchies is that while a generalization relationship associates classes together, an aggregation relationship associates instances of classes with each other.



Another way of distinguishing generalization and aggregation hierarchies is to note that in a class hierarchy, the subclasses are mutually exclusive. Thus a type of element is hydrogen, oxygen, or one of the other hundred or so elements. An element cannot be both hydrogen and oxygen. So a generalization relationship is sometimes called an ‘or-relationship’. An aggregation relationship, on the other hand, is an ‘and-relationship’. An atom consists of a number of electrons, protons, *and* neutrons, the basic model of an atom I learned in school.

In *The Ghost in the Machine*, Arthur Koestler coined the word *holon* to denote structures that are both wholes and parts of a greater whole in aggregation hierarchies, from Greek *δλος* ‘whole’, with the suffix suggesting a particle or part, as in *proton* or *neutron*. In *Janus: A Summing Up*, he went on to say, “every holon is possessed of two opposite tendencies or potentials: an *integrative tendency* to function as part of the larger whole, and a self-assertive tendency to preserve its *individual autonomy*.” This is a clear example of both-and thinking, helping us to live in love, peace, and harmony with each other.

One other obvious hierarchy is that of a **family tree**. Each of us has two parents, an evolutionary process that goes back around a billion years to the birth of sexual reproduction. Conversely, a female and male are parents of one or more descendants. So there are hierarchical structures in both directions of horizontal time. However, when we try to represent parent-child relationships in a class diagram, we only need one node and arc, where the node is class **Person**. To represent hierarchical family relationships, we need an *instance* model, rather than a *class* one, which is what we normally mean by a family tree. But not all relationships are hierarchical; we have siblings, cousins, uncles, and aunts, etc.

This leads us to **nonhierarchical** relationships, in conformity with the Principle of Unity. In *Gödel, Escher, Bach*, Douglas Hofstadter tells us that Warren McCulloch called such relationships *heterarchies*,²⁵⁹ from Greek *heteros* ‘different, other’, delighting in such entanglements, using a term from quantum physics. More simply, we can call **nonhierarchical** relationships **associations**, of which there are countless, difficult to classify. For as soon as we do, we create hierarchical, generalization relationships.

As there is nothing in the Universe but hierarchical and nonhierarchical relationships, we can thus see: *The underlying structure of the manifest Universe is an infinitely dimensional network of hierarchical relationships*. This statement is true in all possible worlds, prior to interpretation by a knowing being, and so exists at the ontological level of IRL. Furthermore, all structures in the Universe have the property of self-similarity, like geometric fractals, named by Benoit B. Mandelbrot of IBM.²⁶⁰

It might seem that this arborizing, reticulating model is so obvious that it is hardly worth stating. Arthur Koestler responded to such criticism at the Alpbach symposium of 1968, called ‘Beyond Reductionism’, saying in his inimitable manner:

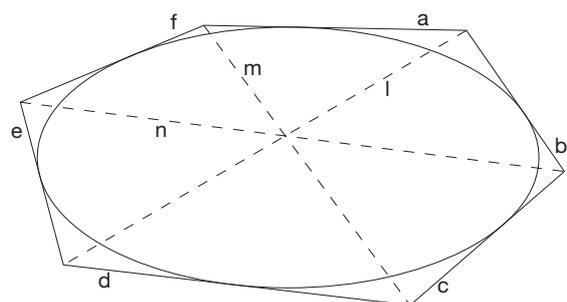
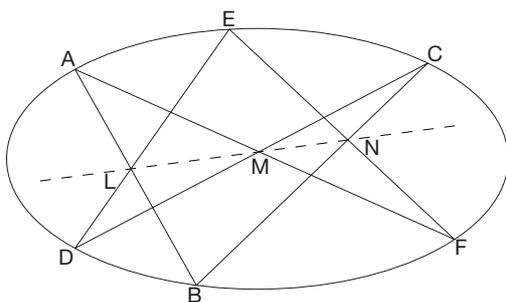
This almost universal applicability of the hierarchic model may arouse the suspicion that it is logically empty; and this may be a further factor in the resistance against it. It usually takes the form of what many call the ‘so what’ reaction: ‘all this is old hat, it is self-evident’—followed by the *non sequitur* ‘and anyway, where is your evidence?’ Well, hierarchy may be old hat, but I would suggest that if you handle it with some affection, it can produce quite a few lively rabbits.²⁶¹

To form the more meaningful epistemological level, we note that *epistemology* derives from Greek *epistēmē* ‘knowledge’. So the epistemological level of IRL contains knowledge about knowledge or meta-knowledge, corresponding to the systems catalogue in relational database management systems, such as MySQL. In IRL, this is contained in the **Class** and **Attribute** classes, organized as relations from all class and attribute names, italicized, for instance, in the **Quadrilateral** relation on page 47.

The epistemological level of IRL acts as the system of coordinates for all knowledge, which we can also call the framework or skeleton for the body of all knowledge, corresponding to the class model in object-oriented modelling systems and the misnamed data model in entity-relationship modelling. In business, these can be extremely complex models, difficult to print even on a single sheet of A0 size paper. However, in IRL, the system of coordinates for all knowledge is virtually impossible to visualize in detail. All we can know is that it exists as a coherent whole, built on the exquisitely simple structures of the ontological level.

Unifying opposites

Now, whenever we form a concept, we also form its opposite, like black and white, male and female, and so on. Mathematics also has many such duals. For instance, Blaise Pascal discovered in 1639, when he was sixteen years old, that if six points are placed on a conic section and joined as in the left-hand-side diagram below, then their points of intersection, *LMN*, are collinear. Because straight lines remain straight lines in conical projections, this property applies not only to the ellipse, as in the diagram, but also to the parabola and even hyperbola, consisting of two disconnected open curves. As such a property is not intuitively obvious, it is not surprising that Pascal called the six points *ABCDEF* his Mystic Hexagram.



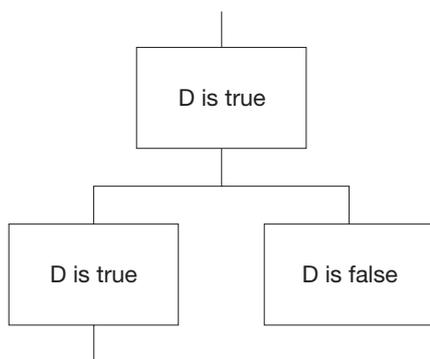
Nearly two hundred years later, in 1810, Charles Julien Brianchon proved a related theorem, illustrated on the right. If six lines are drawn tangentially to a conic section to form a hexagon, as *abcdef*, then the lines joining opposite vertices, *lmn*, intersect at a single point. The relationship between these two theorems can best be seen from an observation made by Florimond de Beaune, a friend and student of René Descartes in the seventeenth century: a curve may be regarded both as the path of a moving point and as the envelope of a moving line.

Pascal and Brianchon's theorems are examples of what is called the principle of duality in projective geometry. Whatever theorem can be proved about points and lines has a dual or reciprocal theorem about lines and points, where lines and points are interchanged, a fact that fascinated me as a mathematics

undergraduate in the early 1960s. Of course, the principle of duality applies not only in two dimensions. For instance, the tetrahedron is self-dual as the stella octangula and the great stellated dodecahedron, discovered by Johannes Kepler in 1619 in *The Harmony of the Universe*, and the great icosahedron, discovered by Louis Poinsoot in 1810, are duals of each other.

There are also pairs of opposites in the stored-program computer, corresponding to 'know that' and 'know how' in human beings, as the diagram of basic data processing illustrates on page 19. But how can information systems architects model these relationships in a comprehensive model of the psychodynamics of society, including the corresponding structures in computers. It is not too difficult for IS architects to develop integrated models of the relationships between the basic entity types in an enterprise, such as customers, products, and deliveries, and between the processes that deal with these entities, such as manufacturing, ordering, and invoicing. But in a language like APL, functions, as active data, can be dynamically created from strings, as passive data, and vice versa, as we saw on page 20. How, then, can such transformations taking place in nanoseconds be modelled in information systems models? We need to be able to do this if we are to intelligently manage our business affairs with full consciousness of what we are doing.

IRL solves this problem by generalizing the principle of duality in inversive and projective geometry, succinctly described in *Geometry Revisited* by H. S. M. Coxeter and S. L. Greitzer. The **Principle of Duality** in IRL is proposition D, stating: *A complete conceptual model of the Universe consists entirely of dual sets*. But is D true? Well, sometimes yes and sometimes not. For instance, a collection of entities without a common attribute do not form a set, which we usually call miscellaneous, not unlike the set formed from the axiom of choice in mathematics. But now something quite incredible happens!

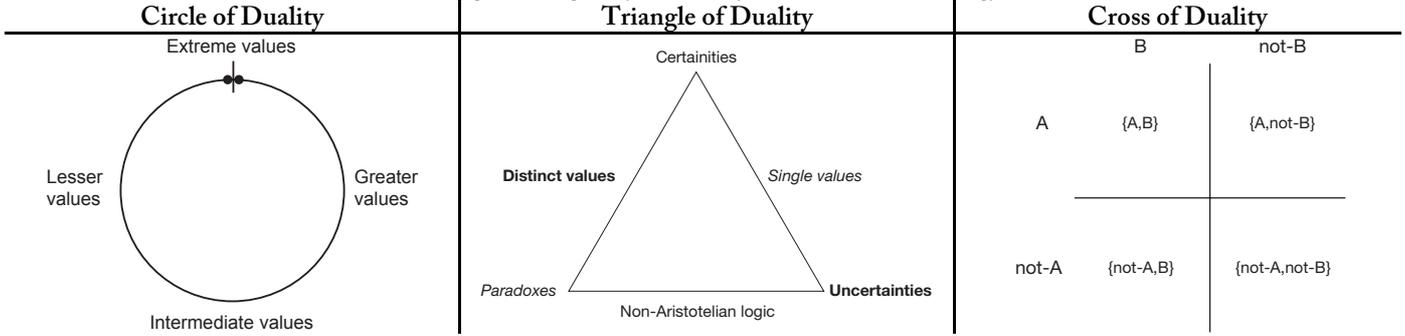


Those occasions when D is false are the opposite of those occasions when D is true, confirming that D is true. In the terms of Hegel's dialectical logic, if 'D is true' is the thesis and 'D is false' is the antithesis, then 'D is true' is the synthesis. There is thus a **primary-secondary relationship** between the truth and falsity of the Principle of Duality, illustrated in this diagram. So it is impossible to deny the truth of the Principle of Duality, for any denial confirms its veracity. D is thus a self-verifying proposition, true in all possible worlds, an

instance of a class in IRL with general attributes A and $\sim A$, called **Paradox** or **Self-contradiction**.

The Principle of Duality lies in the ontological level of IRL, beneath the epistemological level, because it describes what we can say about all beings prior to interpretation. There are three other significant ways in which opposites relate to each other, depicted as the **circle**, **triangle**, and **cross of duality**, shown on the next page.

The circle of duality enables us to model all shades of grey, not only black or white situations at the extremes of a range of values. An example of this model is political systems, with totalitarian regimes at the extremes, the left and right being communism and fascism, respectively. Opposite to these poles, which join at the top, is liberalism, from the Latin *liber* 'free', anathema to the Republican Party and Bible Belt in so-called free America, where the interests of the individual and society are in balance. In between, we have socialism and conservatism, on the left and right, respectively. This is a model of political systems taught to me in a general studies lesson at school as a sixteen-year-old by an active member of the British Liberal party, as it was then, who also happened to be a cleric.



The triangle of unity encapsulates the three different ways that opposites can relate to each other: certainties (either-or), uncertainties (neither-nor), and paradoxes (both-and), the last of these being the most fundamental, encapsulated in the Principle of Duality.

The cross of duality enables us to model two or more pairs of opposites in two or more dimensions. Carl Jung’s theory of psychological types is a three-dimensional example, the three dimensions being rational (thinking and feeling), irrational (intuition and sensation), and relating (extrovert and introvert). Ken Wilber’s four-quadrants model is a two-dimensional example, the dimensions being interior and exterior and individual and social. The exterior quadrants are labelled ‘It’, while the individual and social interior quadrants are called ‘I’ and ‘We’, respectively. We can thus see that what Ken Wilber calls an integral operating system is just a small part of Integral Relational Logic, not all-inclusive at all.

Transcending the categories

There is one more step that we need to take in order to explicitly map the entire Totality of Existence. We need to include the concept of Wholeness in IRL. For so far, IRL has just been mapping structures in the relativistic world of form. But if it is to be complete, it must also include its opposite: the Formless Absolute. Now, while the Absolute is inaccessible to our five physical senses of sight, hearing, taste, smell, and touch, we can nevertheless feel its Presence, which we can also call Akasha, the quintessence of the Universe, as we saw on page 9.

However, there is much confusion around this subject among physicists. For instance, Danah Zohar describes the zero-point field underlying the physical universe as a quantum vacuum, the ‘well of being’.²⁶² This is not unlike the Buddhist concept of *shunyata* ‘emptiness or void’, which has led many, including some spiritual teachers, to say that quantum physicists were becoming mystics. However, she goes on to say, “The quantum vacuum is very inappropriately named because it is not empty. Rather, it is the basic, fundamental and underlying reality of which everything in this universe—including ourselves—is an expression.”²⁶³ Another physicist, Mark Comings, has similarly said, “This Quantum Vacuum is more aptly named the Quantum Plenum,”²⁶⁴ the Latin neuter of *plenus* ‘full’. He associates the quantum plenum with space, which he says has virtually unlimited potential locked up within it.²⁶⁵

However, it is vitally important not to be confused by the parallels between quantum physics and Eastern mysticism, which Fritjof Capra studied in the mid 1970s in his best-selling *The Tao of Physics: An Exploration of the Parallels between Modern Physics and Eastern Mysticism*. For Reality is neither space nor time. As we see in this subsection, Reality, as the union of all opposites, is both Emptiness and Fullness.

To see how such a comprehensive worldview emerges, we can call the Absolute prior to interpretation the Datum of the Universe, the most fundamental primal concept defined on page 45, enabling us to complete our model of the Universe at the beginning, thereby unifying the Alpha and Omega Points of evolution. In conformity with the egalitarianism of IRL, we must thereby form the concept of the

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Absolute in exactly the same way as we form concepts in the relativistic world of form; by carefully observing the similarities and differences in the data patterns of our experience, the simple way of bringing our thoughts into universal order, as described on page 46.

To do this, in conformity with the Principle of Duality, we need to look at the Absolute in terms of two pairs of opposites: conceptually and experientially and as both a unity and an aggregate, a two-dimensional example of the Cross of Duality, which cannot be avoided, even when we look at Ultimate Reality. Viewing the Absolute conceptually as a unity, we can see that it differs from all its parts, for all these parts are limited in some way. In contrast, the Datum cannot be defined, for to do so would be to give it boundaries, to say what it is and what it is not. This is obvious from the word *define*, which comes from the Latin *dēfinīre* ‘to limit’ or ‘to end’. The Absolute is thus indefinable and unanalysable, qualities that are transcendent with respect to a knowing being.

On the other hand, when we view the Absolute as the Totality of Existence, we can see that the structure of all its parts is exactly the same as the structure of any of its parts, for the Universe has an underlying, unified structure, independent of and prior to interpretation by a knowing being, as we have seen. The relationships that form this web of life lie within everything there is; they are the glue that holds the entire Universe together. From this perspective, we can say that the Absolute possesses the property of immanence with respect to all beings in the relativistic world of form, with meaningful relationships being the motive power of the Universe.

If we now feel into the Absolute experientially, through meditation and self-inquiry, we discover that the Essence of the Universe is Stillness or Emptiness, resulting in the exquisite sense of Nondual Love and Peace, which has no opposite. We are now in union with the Divine, in Oneness, in a state of Unity Consciousness. From this perspective, the Divine is immanent.

Conversely, if we feel into the Cosmos as an aggregate of all its parts, we can experience the Universe simply as a web of relationships, like a mathematical graph, whose nodes consists of meaningful relationships between forms. Then as we sink ever deeper into ourselves, passing through infinite levels of structure, we approach the Infinite as all these nodes become singularities between relationships. Then, as we dissolve even further in an involutory process, even these relationships disappear, and we are left with the magnificent feeling of translucent Wholeness, Fullness, or Cosmic Consciousness, which is transcendent with respect to any knowing being.

In summary, there are two pairs of dual ways in which we can understand and experience the Absolute, given in this table, thus systemically establishing God as a rational and hence scientific concept.

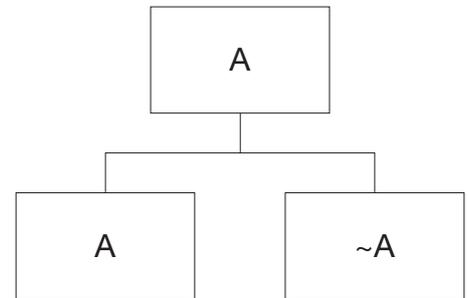
	Oneness	Wholeness
Conceptual	Transcendent	Immanent
Experiential	Immanent	Transcendent

By including the Absolute Whole in IRL, the Principle of Duality becomes the **Principle of Unity**, which can be elegantly expressed in just seven words—*Wholeness is the union of all opposites*—or six mathematical symbols: $W = A \cup \sim A$, where W means Wholeness, A any being whatsoever, \cup union, and \sim not. From the perspective of Wholeness, opposites, also called dualities or polarities, cannot be separated; they are mutually dependent on each other. The Principle of Unity is thus the fundamental design principle of the Universe, lying in the mezzanine level of the foundations of all knowledge, between the ontological and Gnostic levels.

We know that the transcultural, transdisciplinary Principle of Unity is the power that brings the Cosmos into order because there is overwhelming evidence today from mathematics, physics, psychology,

and mysticism that the Universe is inherently paradoxical. To reflect this observation, the both-and Principle of Unity expresses this irrefutable, universal truth in the simplest possible terms—the closest we can get to expressing the Ineffable, Nondual, Absolute Truth in symbolic form, although it would perhaps be better to say *signate*, to distinguish what Carl Jung called signs and symbols, symbols having a profounder meaning than signs.²⁶⁶ For the virtually meaningless equation $W = A = A \cup \sim A$ is applicable within all domains of discourse, before we interpret the data patterns of our experience as meaningful information and knowledge.

We can see that the Principle of Unity is a self-verifying, self-contradicting proposition with this diagram. Applying Hegelian logic, if A is the thesis and $\sim A$ the antithesis, then A is the synthesis, a primary-secondary relationship that is ubiquitous. A hypothetical superintelligent extraterrestrial being would instantly recognize this pattern, the paradigm that underlies all others, the key that unlocks all the innermost secrets of the Universe.



A few examples of this primary-secondary relationship are Wholeness and Oneness, Nonduality and duality, Consciousness and consciousness, Intelligence and intelligence, Love and love, Peace and peace, Life and life, perfection and imperfection, good and evil, beauty and ugliness, synthesis and analysis, art and science, implicate and explicate orders, and Eastern mysticism and Western reason.

For as Lao Tzu wrote in *Tao Teh Ching*:

When all the world recognizes beauty as beauty, this in itself is ugliness.

*When all the world recognizes good as good, this in itself is evil.*²⁶⁷

And as Heraclitus said in the few fragments of his writings that have survived:

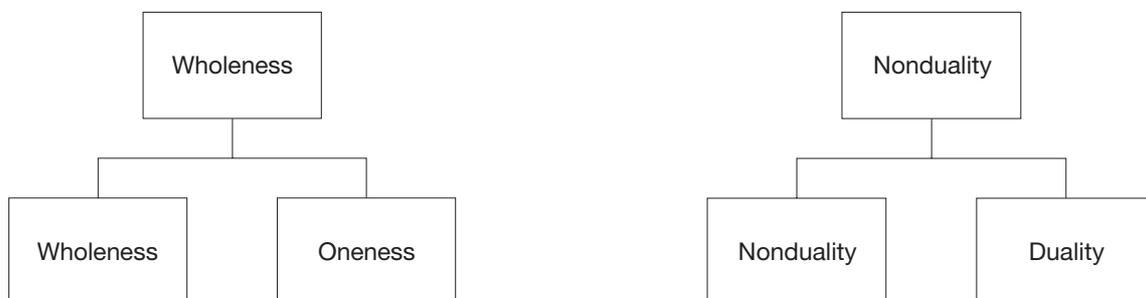
The Hidden Harmony is better than the obvious.

Opposition brings concord; out of discord comes the fairest harmony.

*People do not understand how that which is at variance with itself agrees with itself.*²⁶⁸

In contrast, Aristotle said in *Metaphysics*, “It is impossible for the same attribute at once to belong and not to belong to the same thing and in the same relation ... as some imagine Heraclitus says.”²⁶⁹ This Law of Contradiction, which is the seventh pillar of unwisdom and the implicit axiom for deductive logic and mathematical proof, is a clear symptom of our grievously sick society, which can only be healed when we learn to intelligently look at both sides of any situation.

The first two of the pairs of opposites above are illustrated here:



In brief, the left-hand diagram shows that even Absolute Wholeness has an opposite: Absolute Oneness. This diagram illustrates the relationship between spiritual seekers returning Home to Paradise by healing the fragmented, split mind with a translucent Supermind—expressible in the language of mathematics and computer science—and those coming into union with the Divine with No-mind—

traditionally expressed in music and (as perennial or ancient wisdom) in mystical poetry, such as that of Rumi and Kabir.

What this means is that the most obvious result of conducting the thought experiment outlined in these pages is that individual consciousness expands and deepens to such an extent that it becomes coterminous with Consciousness itself. For *conscious* derives from Latin *cum* 'together with' and *scire* 'to know', also the root of *science*, the way of developing knowledge through analysis. In contrast, art is a synthesizing activity, putting back together what science has divided, as we see from the root of *art* on page 42. So IRL is both the art and science of thought and consciousness, integrating and unifying the differences that the analytical mind discerns, which is how Latin *scientia* 'knowledge' evolved from its PIE base. So *consciousness* is an oxymoron, embodying opposites in its etymology, like *preposterous*.

The notion of Consciousness as a seamless, borderless continuum with no divisions anywhere is virtually unknown in the West. However, it is quite familiar to mystics in the East, as the beautiful Sanskrit word *Satchidananda* illustrates. We can see the relationship between *being* and *truth* from the PIE base **es-* 'to be', which is also the root of many other words in Indo-European languages, such as English *Presence*, *Essence*, *is*, *interesting*, *ontogeny*, and *soothe*, from *sooth*, an archaic word for 'truth', Sanskrit *satyagraha* 'Truth-force' and *satsang* 'gathering of Truth seekers', and Swedish *sann* 'true'.

Consciousness also enables us to complete David Bohm's unification of quantum and relativity theories. Inspired by the process thinking of Heraclitus and A. N. Whitehead, Bohm could see that underlying the appearance of separation, which science has traditionally focused its attention on, is an undivided flowing stream, which he called the holomovement, whose substance is never the same. As he said, "On this stream, one may see an ever-changing pattern of vortices, ripples, waves, splashes, etc., which evidently have no independent existence as such. Rather, they are abstracted from the flowing movement, arising and vanishing in the total process of the flow."

In IRL, this river of life in the horizontal dimension of time becomes the vast Ocean of Consciousness, which we can visualize as a ball of water with infinite radius, which psychologists like Sigmund Freud and Stanislav Grof have talked about in their writings. To give this ocean some structure, we need to visualize it with a finite diameter, with the surface then representing the physical universe, the waves and ripples accessible to our physical senses. But beneath the surface lies the Cosmic Psyche, the 99% of the Universe where all knowledge, wisdom, and joy dwell, as described in Kabbalah. And at the very centre of the Ocean of Consciousness is the Origin of the Universe, the Divine Source of Life, giving rise to all forms in the manifest universe.

We can thus realize "All there is, is Consciousness," the opening words of Ramesh S. Balsekar's brilliantly honest *Consciousness Speaks*. So within this Cosmic Context, we appear to be like fish. But what does it mean to be a fish swimming in Consciousness? Well, the Sufi poet Kabir wrote in the fifteenth century, "I laugh when I hear that the fish in the water is thirsty,"²⁷⁰ using water as a metaphor for Consciousness. But that is not how astrophysicists understand our Environment, or the Arena in which we live, leaving much to be understood. For instance, Martin Rees has said, "In the twenty-first [century], the challenge will be to understand the arena itself, to probe the deepest nature of space and time," going on to say, "A fish may be barely aware of the medium in which it swims."²⁷¹ For as Kabir the weaver says in the fish poem, "You do not see that the Real is in your home, and you wander from forest to forest listlessly."

The Singularity in time

We saw on page 48 that the underlying structure of the manifest Universe is an infinitely dimensional network of hierarchical relationships, prior to interpretation by a knowing being. As there is nothing in the Universe but structure-forming relationships, these relationships, called fields in physics, must be causal. For there is no other possible source of power and energy, whose Ultimate Source is Life bubbling up from the Origin of the Universe.

However, structural energy cannot necessarily be measured in joules or any other quantitative measure. For there is a primary-secondary relationship between semantics and mathematics. This means that when we convert our virtually meaningless form-relationship map of the universe into a coherent conceptual model through the egalitarian method of interpretation described on page 46, then we can see that meaning is energy, the equivalence of mass and energy being a special case.

This semantic view of energy thus provides the basis for an integral theory of causality. However, it is beyond the scope of this treatise on Mystical Pragmatics to look at this complex issue in full detail, involving, as it does the phenomenon of noncausality in quantum physics and Jung's notion of synchronicity, associated with chance changes, which Peirce called tychistic and which Aristotle also noticed when exploring what he called the four types of causality: material, formal, efficient, and final.²⁷² There is also no space here to explore the implications of this view of energy on the second law of thermodynamics, which Brian Cox described as virtually an absolute truth in the BBC documentary *Wonders of the Universe*.

Rather, what concerns us most at this most critical point in human history is to understand what is causing scientists and technologists to drive the pace of scientific discovery and technological invention at exponential rates of accelerating change. To this end, we can define evolution, in all its forms, in this way: Evolution is an accumulative process of divergence and convergence, proceeding in an accelerating, exponential fashion by synergistically creating wholes that are greater than the sum of the immediately preceding wholes through the new relationships that are formed, apparently out of nothing. Or as Jan Christiaan Smuts put it in *Holism and Evolution* in 1926, "Evolution is nothing but the gradual development and stratification of progressive series of wholes, stretching from the inorganic beginnings to the highest levels of spiritual creation."

The concept of synergy is central here, for it denotes that structural energy arises from the meaningful relationships between forms. For *synergy* derives from Greek *sunergos* 'working together', from *sunergein* 'to cooperate', from *sun-* 'together' and *ergon* 'work', cognate with *energy* 'at work', from *energeia* 'activity, efficacy, effect', from *energes* 'active, busy, working', from *en-* 'at' and *ergon* 'work'. In ancient Greece, a fellow-worker was called *sunerithos*. It is clear from this that *synergy* and *energy* originally referred to human activity and work. Aristotle seems to have had this meaning in mind when he said, "The energy of the mind is the essence of life."

It is through meaningful synergistic relationships that we can fulfil Pierre Teilhard de Chardin's prophecy, made in 1940: "The way out for the world, ... the entry into the superhuman, will ... yield only to the thrust of all together in the direction where all can rejoin and complete one another in a spiritual renewal of the Earth."²⁷³

Although Peter Medawar called Teilhard's *The Phenomenon of Man* an 'incoherent rhapsody',²⁷⁴ it is easy to present his holistic evolutionary model in simple terms. Teilhard saw evolution in four stages, physical, biological, noological or mental, and spiritual, which he called Pre-life, Life, Thought, and Superlife in the four parts of his magnum opus. These four stages of evolution take place in four realms,

Mystical Pragmatics

each nested into the succeeding one. These we can call hylosphere, from Greek *ûlē* ‘matter’, biosphere, from Greek *bios* ‘life’, noosphere, from Greek *noos* ‘mind’, and numinosphere, from Latin *nūmen* ‘divinity’.

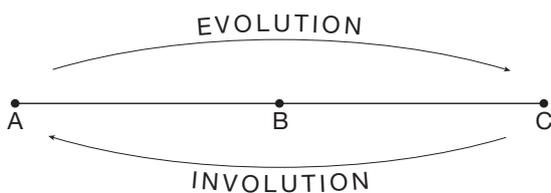
Now, while Teilhard did not explicitly describe the duration of each of these stages and the transitions between them, we can see that each is much shorter than the previous ones because accumulative evolutionary change accelerates exponentially, illustrated in this table:

Evolutionary stages, years ago						Transition stages, years ago		
Teilhard	Type	Realm	Start	End	Duration	Start	End	Duration
Prelife	Physical	Hylosphere	14,000,000,000	4,500,000,000	9,500,000,000	4,500,000,000	3,500,000,000	1,000,000,000
Life	Biological	Biosphere	3,500,000,000	25,000	3,500,000,000			
Thought	Mental	Noosphere	5,000	50	5,000	25,000	5,000	20,000
Superlife	Spiritual	Numinosphere	-50	-300	250	50	-50	100

So we can only truly understand evolutionary processes by studying the way we learn in the noosphere, rather than studying the wondrous diversity of species as biologists since Darwin have been doing. And we can only understand what the Universe is from the perspective of the unbounded numinosphere rather than standing in the tiny hylosphere, as physicists are wont to do.

As this table indicates, we are currently in the middle of a 100-year transition period between what we can call the mental-egoic age (the self-centred me-epoch, focused on conflict and competition) and the age of universal spirituality (the socially centred us-epoch, focused on peace and cooperation). We can say that this radical transformation of consciousness began with the counter-cultural movements of the 1960s, symbolized by ‘flower power’, sometimes induced by consciousness-expanding psychotropic drugs, the basis of Aldous Huxley’s utopian novel *The Island* from 1962,²⁷⁵ as a riposte to his dystopian novel *Brave New World* from 1932.

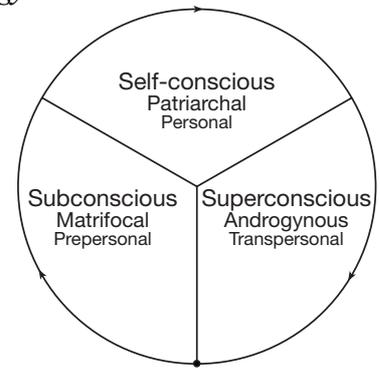
Now it is vitally important here not to be confused by Aurobindo Ghose’s distinction between evolution and involution. To Aurobindo, “The word *evolution* carries with it in its intrinsic sense, in the



idea at its root the necessity of a previous involution.”²⁷⁶ But this does not make sense, for both evolution and involution actually take place in the vertical dimension of time, in the Eternal Now, not in the horizontal, as this diagram from Ken Wilber’s *Eye to Eye* seems to indicate.²⁷⁷

A problem arises here because it appears that evolution progresses from matter to body to mind to soul to spirit in hierarchical levels of increasing consciousness, called the Great Chain of Being, explored by Arthur O. Lovejoy in the William James Lectures in 1933.²⁷⁸ As Ken says, “Thus history, from this viewpoint, is basically the unfolding of those successively higher-order structures, starting from the lowest (matter and body) and ending with the highest (spirit and ultimate wholeness).”²⁷⁹ Ken calls the Great Chain of Being a *nest* of being, for each level nests in the next. This makes sense, for the numinosphere, embraces the noosphere, biosphere, and hylosphere in turn. But when we start afresh at the very beginning, as we describe on page 42, a quite different picture emerges. We see that evolution is the emergence of form from the Formless, while involution is the reverse, an understanding that is key to living in harmony with the fundamental law of the Universe by recapitulating the Cosmogonic Cycle, as we see on page 88.

To provide another perspective on this situation, we can adapt Ken's three phases of human phylogeny in *Up from Eden*,²⁸⁰ as in this diagram, corresponding to the transition stage between the biosphere and noosphere and the final two stages in Teilhard's evolutionary model. But as Ken has pointed out in what he calls the Pre/Trans Fallacy,²⁸¹ it is important not to conflate the first and third phases of human phylogeny, just because they are both different from the second.



Formless Alpha/Omega Point of Evolution

We are not returning to a Golden Age, like the Tibetan Shambhala, described by Chögyam Trungpa as a mythical “place of peace and prosperity, governed by wise and compassionate rulers”.²⁸² Rather, we are moving forwards to an eschatological Age of Light. At least we would be if we could cocreate an awakened, healed, liberated society based on the seven pillars of wisdom.

However, useful as it is, Teilhard's model doesn't directly illustrate the exponential rate of human learning, especially the unprecedented pace of technological innovation during the second axial period, the first being in the first millennium BCE. The German philosopher Karl Jaspers called this first period of immense creativity, when Shakyamuni Buddha, Lao Tzu, Confucius, Plato, Aristotle, Euclid, and many others flourished, the Axial Age (*Achsenzeit* in German), lasting from 800 BCE to 200 BCE, 300 years either side of 500 BCE, which he calls the ‘axis of history’.²⁸³

In terms of the second axial period, John Templeton wrote in 2000, “More than half the scientists who ever lived are alive today. More than half of the discoveries in the natural sciences have been made from 1900 to 1999. ... More new books are published each month than were written in the entire historical period before the birth of Columbus.” He was then naturally led to the question, “Is the slow progress of prehistoric ages now speeding up?”²⁸⁴ Fairly obviously, this is the case, which we need a little bit of mathematics to fully understand.

Exponential rate of growth

The mathematical function that describes accumulative processes, such as evolution, is the exponential one, expressed as e^x , where e is the exponential constant, 2.71828. Now this function has some interesting properties. The rate at which it changes accelerates exponentially and the rate at which acceleration accelerates also accelerates exponentially, and so on. The exponential function thus describes the amazing rate at which evolutionary change can occur through the power of synergy, when new relationships are created out of ‘nothing’.

However, as the physicist Albert A. Bartlett has said, “The greatest shortcoming of the human race is our inability to understand the exponential function.”²⁸⁵ We have some sense of what 100 years is like or even 1000, measured from our own lifespan of threescore years and ten, as the Psalmist put it.²⁸⁶ But what is a billion years in our experience or a quintillion years?

We can much better understand the power of exponential numbers, if we think in terms of orders of magnitude or powers of ten, rather than the numbers themselves. So the time since the most recent big bang is just 10 or 42 orders of magnitude, depending on whether we measure time in terms of years or yoctoseconds (10^{-24}).

In the 1930s, Edward Kasner tried to explain exponential numbers to his nine year-old nephew Milton Sirota by asking him to create a name for a very big number.²⁸⁷ Milton showed that he had more wisdom than his mathematician uncle imagined. For he coined the word *googol* for 10^{100} ,²⁸⁸ which is just 100

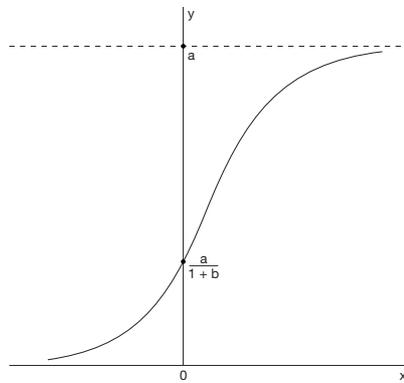
orders of magnitude, still quite manageable by the mind. In 1997, Google adapted this term, a misspelling of *googol*, for its search engine, to denote its mission to organize a seemingly infinite amount of information on the web.²⁸⁹ However, Milton went even further, also defining a googolplex as 10^{googol} , a name that Google has given to its headquarters. But what on earth is a googol orders of magnitude? Or any of Gödel's proof numbers in his incompleteness theorem?²⁹⁰ Or a googolplex to the power of a googolplex three times, like this, a number that is quite beyond our imagination:

$$\text{googolplex}^{\text{googolplex}^{\text{googolplex}^{\text{googolplex}}}}$$

Yet, even raising a googolplex to the power of a googolplex googolplex times is tiny compared with the smallest infinity, the count of the integers or rationals, or the 'largest' infinity, which we can denote with \aleph_∞ , where ∞ is \aleph_∞ , defined recursively. If we are not to be overwhelmed by such numbers, it is important to remember that this is just a game, the play of the Divine, which we can egolessly delight in and not be overawed by.

Now, structures do not always neatly follow the pure exponential function in their growth processes, as D'Arcy Wentworth Thompson showed in Chapter III, 'Rate of Growth' of his monumental *Growth and Form*.²⁹¹ Rather surprisingly, John Tyler Bonner did not mention Wentworth Thompson's extensive study of the growth curve in his abridgement of this influential book on morphogenesis.²⁹² Nevertheless, others have used the growth curve to depict evolutionary processes, such as C. H. Waddington,²⁹³ Stephen Jay Gould,²⁹⁴ and Peter Russell.²⁹⁵ However, it is possible to define this curve, as a tool for thought, in precise mathematical terms, called the logistic function, as Pierre François Verhulst did in 1845, when studying Malthusian limits of population growth:²⁹⁶

$$y = \frac{a}{1 + be^{-cx}}$$



This growth curve has applications in many different situations, not the least in human learning, when many are familiar with the flat part at the beginning, as we struggle to coordinate all the skills and ideas that we need for learning to accelerate exponentially. We can therefore call the turning point at the bottom of the curve the coordination point, which corresponds to the saturation point at the top, when learning reaches a plateau. It is important to understand the full shape of this curve. For when beginning a new project, it is easy to give up, saying, "I'll never manage this." And when growth is happening very fast, we

think that it can continue indefinitely, such as the deluded belief about technological development and economic growth in today's capitalist society. Gordon E. Moore is well aware of the limits of evolutionary growth. As he told a meeting of the world's top chip designers and engineers on 10th February 2003, "No exponential is forever." Irrationally, he then went on to say, "Your job is to delay forever."²⁹⁷

Now the growth curve applies to biogenesis, just as it does to noogenesis, as Niles Eldredge and Stephen Jay Gould pointed out in a paper they presented at the annual meeting of the Paleontological Society and the Geological Society of America, in Washington, D. C., on 2nd November 1971, titled 'Punctuated Equilibria: An Alternative to Phyletic Gradualism'.²⁹⁸ At the time, the general consensus among palaeontologists and biologists was that evolution progresses gradually. But this does not explain why there are large gaps in the fossil record. There are long periods of virtual standstill (equilibrium), punctuated by episodes of very fast development of new forms. In actuality, evolution progresses in fits

and starts, for as Eldredge put it in his book *Time Frames*, “once a species evolves, it will not undergo great change as it continues its existence.”²⁹⁹

Now, while Teilhard showed that evolution produces ever-increasing complexity and hence consciousness, we need to turn to chaos theory, the complement of complexity theory, to understand what is happening to humanity at the present time. Leaps in complexity in self-organizing systems are known as bifurcations, divisions into two forks or branches, first studied by Robert May at Princeton when studying the strange properties of the logistic difference equation, a discrete-time demographic model analogous to the logistic equation above:

$$x_{n+1} = rx_n(1 - x_n)$$

May used this equation to show the Malthusian principle that populations cannot grow indefinitely. Sooner or later populations must reach a point of equilibrium. Here, the parameter r represents the rate of growth, the term $1 - x_n$ keeping the growth within bounds, since as x_n rises, $1 - x_n$ falls.³⁰⁰ However, when May studied various values for r and x_0 as models for imaginary populations of fish, he discovered that sometimes the value of x would oscillate at bifurcation points, which would then split at more and more bifurcation points until this periodicity gave way to chaos at a certain point, called the ‘point of accumulation’. Although the mathematics behind this accumulation point is quite different from that of the logistics equation, we could say that it corresponds to the saturation point in the growth curve.

We can look at evolution since the most recent big bang as a series of evolving systems. Some examples of such studies are *The Phenomenon of Science* by the Russian dissident Valentin F. Turchin from 1977 and Béla H. Bánáthy’s *Guided Evolution of Society* in 2000. In a similar vein, the journal *World Futures: The Journal of General Evolution* published *The World Futures General Evolution Studies* in fifteen volumes, edited by Ervin Laszlo in the 1990s. However, to understand how and when evolution’s accumulation point arrives in human evolution, we can use much simpler mathematics than that used in complexity and chaos theories, totally free of our cultural conditioning, which tends to limit our understanding of evolutionary processes.

As evolution is an accelerating, exponential process, the time periods between major turning points get shorter and shorter, simply represented in a diminishing geometric series, where each successive term gets shorter by a constant factor. But rather surprisingly, the sum of an infinite series of such terms is not infinite; it is finite, called a mathematical singularity, illustrated in this expression:

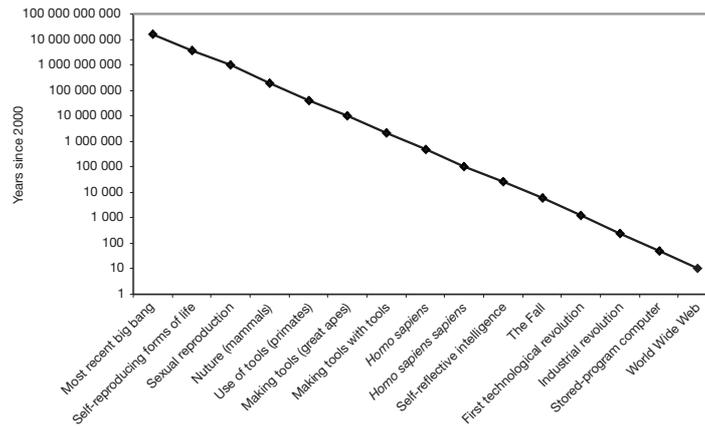
$$s = \sum_{i=0}^{\infty} \frac{a}{r^i} = \frac{ar}{r-1}$$

For instance, when $a = 1$ and $r = 2$, we have:

$$1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{16} + \dots = 2$$

Assuming that banks are held to a required reserve ratio of 9:1, we can use this formula to show how banks can lend up to ninety times more money than they have on deposit, creating money out of thin air in today’s inherently unstable global economy. However, in Teilhard’s evolutionary model, the first term in this series corresponds to the period between the most recent big bang and the emergence of the first self-reproducing forms of life on Earth. Viewing evolution as a series of bifurcating systems, we can then use the Feigenbaum constant (about 4.472)³⁰¹ to plot some major evolutionary turning points, showing that evolution has passed through its accumulation point, illustrated in the next diagram.

Mystical Pragmatics Major Evolutionary Turning Points



Nick Hoggard developed this evolutionary model in an unpublished essay titled *SuperEvolution* around 2000 as a scientific extension of Carl Johan Calleman’s evolutionary model based on the Mayan calendar.³⁰² In this uncompleted essay, he compared this bifurcating model to a dripping tap. When a tap is first turned on, drips are equally spaced and paced. But as the tap is opened up, drips become faster and faster and more and more erratic until the tap is turned fully on, no longer dripping. Similarly, evolution is now flowing continuously; there are no more discrete evolutionary turning points to be discerned. A simple calculation shows that this momentous event occurred around 2004, slightly different from the end of the sixteen billion-year Mayan calendar, whose last day is considered to have been 20th December 2012, using the Goodman-Martinez-Thompson (GMT) correlation coefficient to astronomers’ proleptic Julian calendar of 584,283.

Both these dates are different from 2023, when Victor Vinge believes a technological singularity will occur, described in a NASA paper he wrote in 1993 called ‘The Technological Singularity’: “Within thirty years, we will have the technological means to create superhuman intelligence [in machines]. Shortly after, the human era will be ended.”³⁰³ Continuing, Vinge said,

From the human point of view this change will be a throwing away of all the previous rules, perhaps in the blink of an eye, an exponential runaway beyond any hope of control. Developments that before were thought might only happen in ‘a million years’ (if ever) will likely happen in the next century. ... I think it’s fair to call this event a singularity (‘the Singularity’ for the purposes of this paper). It is a point where our old models must be discarded and a new reality rules. As we move closer to this point, it will loom vaster and vaster over human affairs till the notion becomes a commonplace. Yet when it finally happens it may still be a great surprise and a greater unknown.³⁰⁴

Ray Kurzweil, author of *The Singularity is Near*, is another who believes in this technological singularity in time, saying, “By 2019, a \$1,000 computer will match the processing power of the human brain.”³⁰⁵ He seems to believe that artificial intelligence is a function of the calculating capacity of computers—an inevitable consequence of the exponential nature of growth processes.

Hans Moravec goes even further, believing that computers are members of a new species, which he calls our ‘mind children’. As he says, “Intelligent machines, which will grow from us, learn our skills, and initially share our goals and values, will be the children of our minds. ... It is a world in which the human race has been swept away by the tide of cultural change, usurped by its own artificial progeny.”³⁰⁶ He thus foresees an Age of Robots, saying, “The fourth robot generation, and its successors, will have human perceptual and motor abilities and superior reasoning powers. They could replace us in every essential task and, in principle, operate our society increasingly well without us.”³⁰⁷

To this end, a group of scientists and technologists have founded a Singularity University, whose “mission is to educate, inspire and empower leaders to apply exponential technologies to address humanity’s grand challenges.”³⁰⁸ To promote its belief that robotics and artificial intelligence can solve

humanity's grand challenges, the Singularity University has set up a Singularity Hub with the motto 'Science, technology, the future of mankind'.³⁰⁹

In 1969, R. Buckminster Fuller expressed a similar view in twelve essays in *Utopia or Oblivion: The Prospects for Humanity*. As the blurb on the back of the book states, "Each essay illuminates his basic conviction that Utopia can be attained, and ecological disaster forestalled by imaginative and fearless use of our most modern technological discoveries."³¹⁰

In contrast, Martin Rees takes a more circumspect view in *Our Final Century: Will the Human Race Survive the Twenty-first Century?* He thinks "robotics and nanotechnology could in the long term be even more threatening" than genetically modified plants and animals. Believing that artificial intelligence is possible, he writes, "A superintelligent machine could be the last invention that humans need ever make." As a consequence, he visualizes, "I think the odds are no better than fifty-fifty that our present civilization on Earth will survive to the end of the present century without a serious setback."³¹¹

Well, Lord Rees is grossly out in his estimation. The chances of Western civilization surviving until even 2020 are almost zero, for no civilization in human history has been more deluded, out of touch with Reality. The question we need to ask ourselves is whether *Homo sapiens sapiens* 'wise-wise human' can flourish and survive until 2100, when my grandchildren's grandchildren could be bringing up children of their own if evolution continues to follow the path of sexual reproduction it has been following for the past one billion years.

Sadly, very few people are yet willing to face our precarious situation with fully open eyes. One who is is James Lovelock, who, when Stephen Sackur asked him in a BBC Hardtalk interview in 2010, "What do you think is a viable [population] that Gaia, the planet, can sustain?" said, "I would guess, living the way we do, not more than one billion, probably less". At which Sackur said, "But that's postulating the most dramatic and terrible and unimaginable cull of the human species." To which Lovelock calmly replied, "I think it will happen in this century. It will take a miracle for it not to."³¹²

Seven simultaneous turning points

As evolution passes through the most momentous turning point in its history, if the children being born today are to have any chance of growing old enough to have children of their own, evolution has to pass through seven major turning points, all of which are taking place simultaneously in human history. So what Peter Russell calls our 'next evolutionary leap' is likely to be a very big jump indeed.³¹³ To provide some structure for these changes, here is a brief summary of these different levels.

At the broadest level, we can distinguish, with Pierre Teilhard de Chardin, just four major stages in evolution during the fourteen billion years since the most recent big bang: physical, biological, mental or noetic, and spiritual. As the table on page 56 shows, the first three of these stages began some 14 billion, 3.5 billion, and 5,000 years ago. Despite the secularization of Western civilization, there is now considerable evidence that we are now entering the eschatological spiritual stage of evolution, when all the organized religions that have dominated human societies during the mental epoch will disappear.

Secondly, an increasing number of people today are noticing that a New Humanity is emerging,³¹⁴ with characteristics that are so different from early forms of human that we can say that a new species is emerging. For instance, Eckhart Tolle ended his book *A New Earth* with these sentences: "A new species is arising on the planet. It is arising now, and you are it!"³¹⁵ To give this superintelligent, superconscious species a name, Osho called it simply *Homo novus* or Zorba the Buddha, representing a new synthesis of East and West, the meeting of all polarities.³¹⁶ As he said, "The new man is not an improvement upon

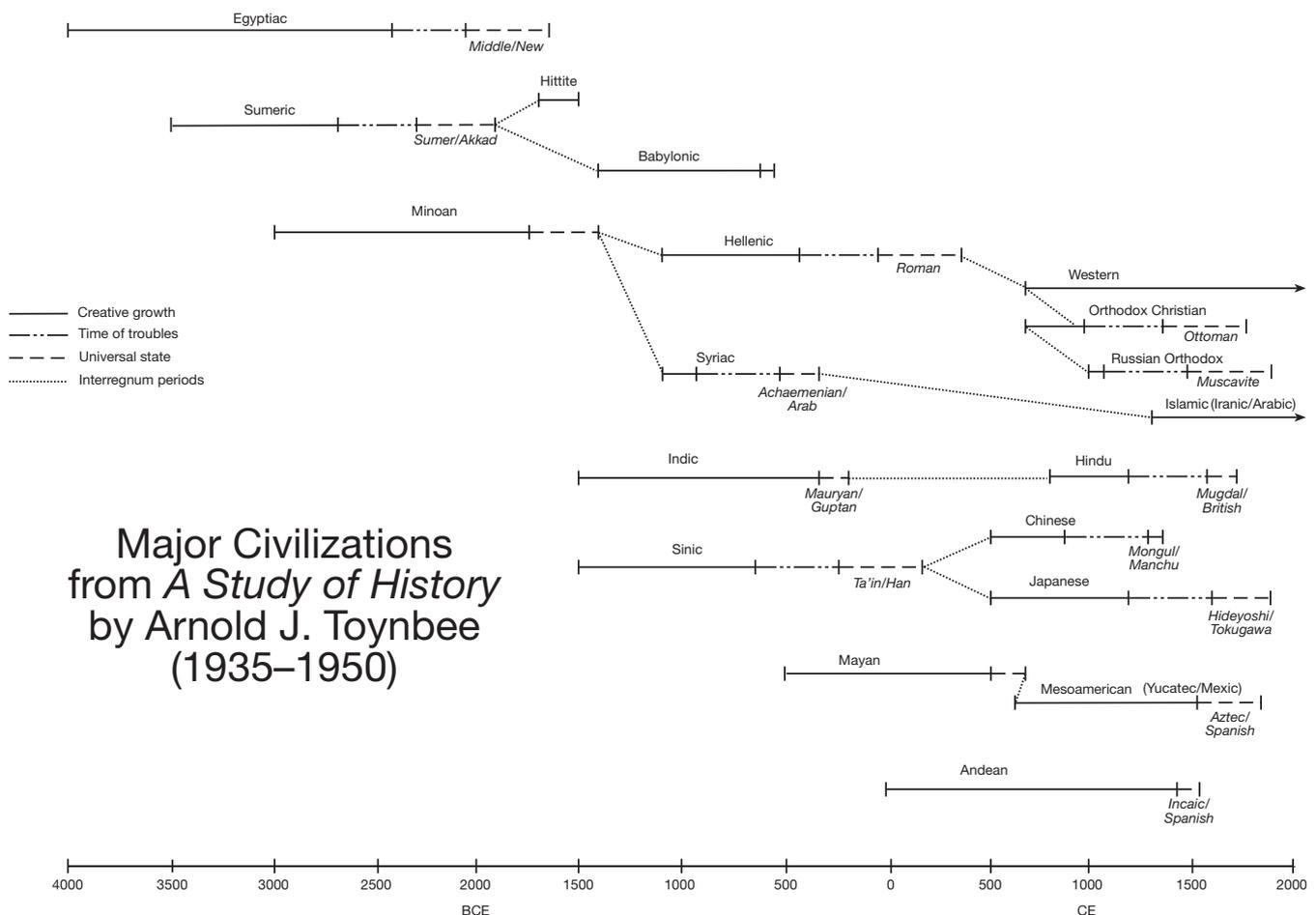
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the old; he is not a continuous phenomenon, not a refinement. The new man is the declaration of the death of the old, and the birth of an absolutely fresh man—unconditioned, without any nation, without any religion, without any discriminations of men and women, of black and white, of East and West, or North and South.”³¹⁷

And Barbara Marx Hubbard, founder of the Foundation for Conscious Evolution, the Evolutionary Edge, Birth 2012, and the Agents for Conscious Evolution (ACE) training, has suggested these names for our emerging species: *Homo universalis*, *Homo noeticus*, *Homo spiritus*, and *Homo sapiens sapiens sapiens*,³¹⁸ indicating that this is not a biological species but a psychospiritual one. For myself, the term I prefer is *Homo divinus* to denote that humanity is currently in the transition from the mental-egoic age (me-epoch) to the age of universal spirituality (us-epoch).

Thirdly, we can look at the phylogeny of human consciousness from about 25,000 years ago in three stages, which we can call innocent, mental, and spiritual, illustrated in the diagram on page 57. During the first phase, our ancestors were like innocent, young children, from the Latin *nocentem*, present participle of *nocere* ‘to hurt, injure’. So someone who is innocent is literally ‘harmless’. It seems that this innocent matrifocal or matricentric age was comparatively peaceful, in contrast to the conflict-ridden mental epoch.

Fourthly, in *A Study of History*, Arnold Toynbee distinguished some twenty civilizations that have emerged, flourished, and died during the patriarchal epoch. Using the generalizing principle of pattern recognition that all use, he saw that civilizations go through various stages, the most important of which are creative growth, a time of troubles, and a universal state, when the creative energies that brought the civilization into being become ossified. This diagram shows a timeline of these civilizations.³¹⁹

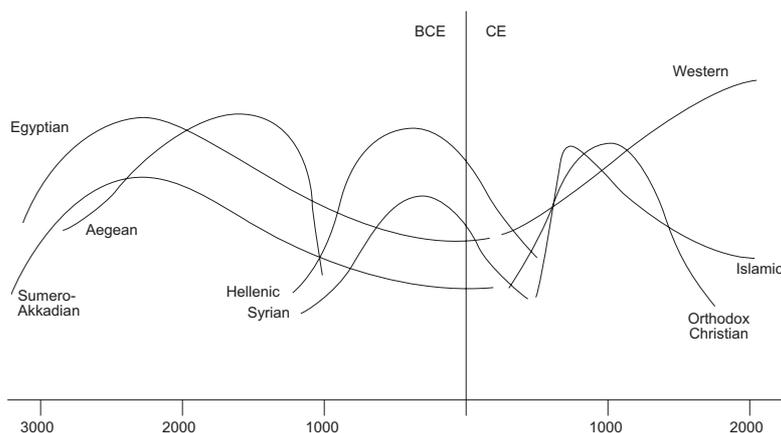


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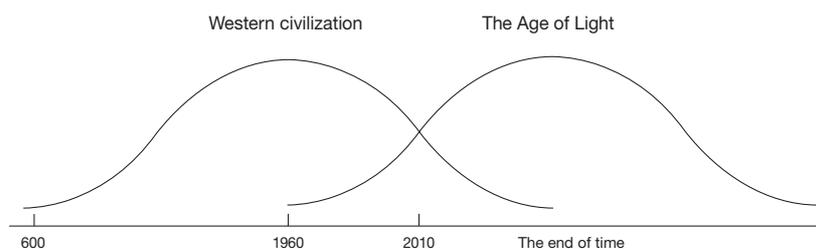
Toynbee summarized the reason for the death of civilizations in this way, which quite clearly applies to Western civilization today:

The nature of the breakdowns of civilizations can be summed up in three points: a failure of creative power in the minority [the leaders who brought the civilization into being], an answering withdrawal of mimesis [imitation] on the part of the majority, and a consequent loss of social unity in the society as a whole.³²⁰

In *The Turning Point*, Fritjof Capra depicted the rise and fall of some of these civilizations around the Mediterranean, reproduced below.³²¹ The important point to note is that all, with the exception of Western civilization, have a bell shape, although it is clearly premature to indicate that the Islamic civilization is dying. This is because, by the Principle of Unity, evolution must be balanced by a period of decay.



Today, the three dominant civilizations in the world, Christocentric Western civilization, the Islamic, and the emerging Chinese totalitarian capitalism have lost the creative power that brought them into existence. So they must all die so that the Age of Light, a society soundly based on Love and Peace, Life and Freedom, Wholeness and the Truth, and Consciousness and Intelligence, can emerge. The next diagram, an extension of one in Fritjof Capra's *The Turning Point*, illustrates this death and rebirth of civilization as we know it today.³²²



Sixthly, there is a revolution in science taking place today that is even more far-reaching than the Copernican revolution completed by Isaac Newton in 1687 with his *Mathematical Principles of Natural Philosophy*. In 1986, Willis Harman, then president of the Institute of Noetic Sciences, described this vision in these words:

Most educated people in this country [the USA] would think it pretty preposterous to suggest that the change that is taking place is at as deep a level as the change that took place during the Scientific Revolution, because that would imply, of course, that the near future—the early part of the next century—would be as different from present times as present times are from the Middle Ages.³²³

Marilyn Schlitz, IONS President Emeritus, is following in his footsteps, saying, in a One-Minute-Shift video on the Web:

When Copernicus proved that the Earth revolves around the Sun, he literally changed the world as we knew it. Darwin and Einstein did the same in their day. What if we are now going through the next scientific revolution, one every bit as profound? For centuries, science and religion have been at odds. Science has focused on the physical, denying the reality

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of what most religions believe. However, today's science is showing that some spiritual insights are actually scientific truths; that psychic abilities may be real; that we are all fundamentally interconnected; and that we all have innate abilities to heal and transform ourselves. Science and technology without wisdom can endanger life as we know it. But when we marry the best of science with the best of our wisdom traditions, humanity will have the capacity to create a more just, compassionate, and sustainable future.³²⁴

Then on 20th July 2013, Stephen Dinan, founder of the Shift Network and formerly IONS Director of Membership and Marketing, convened a teleseminar titled 'The Next Scientific (R)evolution The Emergence of the Akashic Paradigm with Consciousness at the Core', with Ervin Laszlo, Ken Wilber, Barbara Marx Hubbard, Riane Eisler, and Duane Elgin.

As Ervin Laszlo said, we need to give up the idea that the world is a giant mechanism. Rather the Universe is "most like an Internet, a kind of Cosmic Internet. What you know about this information system, which we call the Internet, all things are somehow connected. You can reach any and all items on the Internet from any and all points. And they all hang together somehow." Integral Relational Logic simply encapsulates this interconnected worldview, as we see in the diagram on page 46 in the notation of the Unified Modeling Language.

However, today's scientific revolution is much more far-reaching than the term *paradigm shift* indicates, most popular today. In *The Structure of Scientific Revolutions*, mentioned on page 25, Kuhn used the terms *paradigm change* and *paradigm shift* twenty-three and six times, respectively,³²⁵ to denote such revolutions in worldview and scientific practice. For, as he said, "at times of revolution, when the normal scientific tradition changes, the scientist's perception of his environment must be re-educated—in some familiar situations he must learn to see a new gestalt."³²⁶

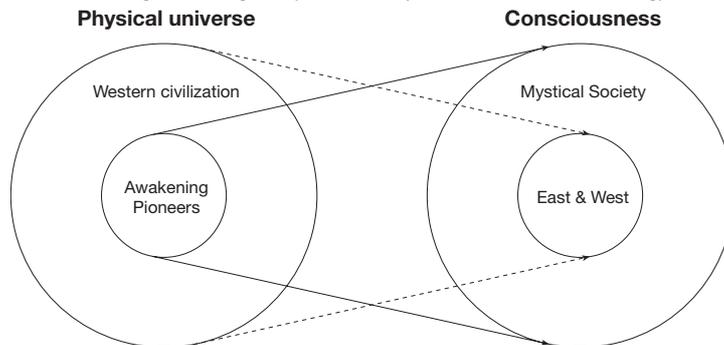
The word *gestalt* derives from German *Gestalt* 'shape, form', which the OED defines as "A 'shape', 'configuration', or 'structure' which as an object of perception forms a specific whole or unity incapable of expression simply in terms of its parts". In other words, a gestalt is greater than the sum of its parts, viewed synergistically as an infinitely dimensional network of hierarchical relationships, the underlying structure of the Universe, as we see on page 48.

We could call this worldview a paradigm, from Late Latin *paradigma* 'pattern, exemplar, example'. However, the pattern underlying the Universe is unlike any other, which we can see from the Greek root *paradeiknunai* 'to show side by side, compare', from *para-* 'side by side, beside' and *deiknunai*, 'to show', from PIE base **deik* 'show', also root of *teach*, *dictionary*, *judge*, and *token*. For although we form concepts in IRL by comparing data patterns of experience, putting similarities and differences into sets, as appropriate, as mentioned on page 46, the underlying pattern of the Universe lies in the ontological level of all knowledge, prior to interpretation by a knowing being. It is thus beyond compare.

Furthermore, the ontological level rests on the Gnostic level, as the diagram on page 41 depicts, which is not even a pattern or structure of forms. For Consciousness is a seamless, borderless continuum, with no divisions anywhere, including the divisions we make between science, philosophy, and religion. And viewing Ultimate Reality as Consciousness is essentially an Eastern worldview, bringing about the biggest change in Western thought since the Babylonians began to map the skies some 5,000 years ago. Rather, we are engaged today in a contextual inversion, which is truly a revolution, from Latin *revolvere* 'to turn over, roll back', as the diagram on the next page illustrates.

This leads us to the seventh of the turning points that are simultaneously taking place today. The materialistic economies of capitalism and communism, which threatened to blow us all up during the second half of the twentieth century, are inherently unstable and are causing severe psychological and ecological damage. If today's children are to have any chance of growing old enough to have children of

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their own, the global economy needs to die, giving way to a life-enhancing, ecologically sustainable Sharing Economy in which we shall all be empowered to reach our highest potential as human beings.

The divisiveness of money

We now come to the heart of Mystical Pragmatics, exploring the possibility of carrying today’s Spiritual Renaissance and Scientific Revolution into politics, economics, business, law, medicine, education, and science itself, expanded to include philosophy, mysticism, and all the humanities. As the heading of this section indicates, the central issue here is the divisiveness of money, which has a psychospiritual cause and hence must have a psychospiritual remedy.

In principle, this problem does have a theoretical solution, but how practical it could be is dependent on whether involutory evolution could awaken the people at large to the truth of life on Earth. The technical solution, of course, is to map or model the Universe, and hence society, through the eyes of information systems architects, rather than those of physicists and financiers, as described in Section ‘The information systems architect’s role’, using IRL, as described in Section ‘The universal system of thought’.

What this means is that what Daniel Bell called the Information Society in the 1970s is rapidly passing through a series of further transformations. In the 1980s and 90s, the *Harvard Business Review* published a series of articles on ‘Knowledge Management’,³²⁷ indicating the emergence of the Knowledge Society. In turn, this is turning into what Winston Franklin called the Wisdom Society around the turn of the millennium, when president of the Institute of Noetic Sciences. And in turn, this is evolving into the eschatological Mystical Society, fulfilling Teilhard’s vision of the spiritual renewal of society, as this diagram illustrates:



This, in overview, is how the seven major turning points outlined in the previous subsection are unfolding in what UN Secretary-General Ban Ki-moon calls the ‘Great Transition’: “Throughout the ages, people have said that the world is in the midst of big change. But the level and degree of global change that we face today is far more profound than at any other period in my adult lifetime. I call this period the Great Transition.”³²⁸

In essence, what we are exploring here is the possibility of creating an ideal society, which Thomas More called *Utopia*, from Greek *ou* ‘not’ and *topos* ‘a place’, in a book with this name. When this book was published in Louvain in 1516, a six-line poem in the frontispiece made a homophonic play on *Utopia* ‘No-place’, calling it *Eutopia* ‘Good-place’, from Greek *eu* ‘good, well, fortunate’,³²⁹ the prefix also being used in such words as *eulogy* and *euphemism*.

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It is fairly obvious why Eutopia is ‘No-place’ from the fact that we are a species suffering from schizophrenia and delusion. Such a society is ungovernable, as Ronald Reagan pointed out in his first inaugural address as President of the USA on 20th January 1981:

In this present crisis, government is not the solution to our problem; government is the problem. From time to time we've been tempted to believe that society has become too complex to be managed by self-rule, that government by an elite group is superior to government for, by, and of the people. Well, if no one among us is capable of governing himself, then who among us has the capacity to govern someone else? All of us together, in and out of government, must bear the burden. The solutions we seek must be equitable, with no one group singled out to pay a higher price.³³⁰

So in a world in which people do not understand themselves, or even know themselves, democracy, as “government of the people, by the people, for the people”, in Abraham’s ‘immortal’ words spoken at Gettysburg on 19th November 1863,³³¹ is unsustainable and unworkable. For, as we saw on page 13, Alexis de Tocqueville pointed out that democracies are as tyrannous as the despotic forms of governance that they are intended to replace. It is not surprising, therefore, that many have written novels about dystopias ‘bad places’, from Greek *dus* ‘bad’, most famous being Aldous Huxley’s *Brave New World* and George Orwell’s *Nineteen Eighty-Four*, published in 1932 and 1949, respectively.

As we saw on page 36, Plato’s solution to tyrannous democracy was that philosophers should be kings. But as Karl Popper pointed out, Plato’s *Republic* was totalitarian, as tyrannous as the democracy that had executed Socrates. There is a solution to this problem, at the technical level, at least, as page 36 also showed. Information systems architects who understand themselves could use Integral Relational Logic to design an ideal system of governance in harmony with the fundamental laws of the Universe, the most fundamental of which is the Principle of Unity.

However, such a society would only be practical if we all became mystics, free of the sense of a separate self. Thich Nhat Hanh, the Vietnamese Buddhist teacher, highlighted what is needed in his closing remarks to over two thousand people attending his Day of Mindfulness at Spirit Rock Center in Woodacre, California in October 1993:

The Buddha, Shakyamuni, our teacher, predicted that the next Buddha would be Maitreya, the Buddha of love. We desperately need love. And in the Buddha's teaching we learn that love is born from understanding. The willingness to love is not enough. If you do not understand, you cannot love. The capacity to understand the other person will bring about acceptance and loving-kindness.

It is possible that the next Buddha will not take the form of an individual. The next Buddha may take the form of a community, a community practicing understanding and loving kindness, a community practicing mindful living. And the practice can be carried out as a group, as a city, as a nation.³³²

We can most clearly see what this means from the roots of *community* and *Maitreya*, which have the same PIE base. *Community* derives from Latin *communitās* ‘fellowship, community’, from *commūnis* ‘shared, common, general, universal, public’, originally in sense ‘sharing burdens’ (opposite to *proprius* ‘individual, private’), also root of *common*, *communicate*, and *communism*, from *cum* ‘together with’ and *mūnus* ‘office, function, duty; gift, present’, from *mūnare* ‘to give, present’, from PIE base **mei-* ‘to change, go, move’, with derivatives referring to the exchange of goods and services within a society as regulated by custom or law’, also root of *mutate*, *mutual*, *miss* ‘in a changed manner’, *municipal* ‘service performed for the community’, and *migrate*.

The Sanskrit word *maitreya* means ‘friendly, benevolent’, from *maitrī* ‘friendship, benevolence, good will’, from *mitra* ‘friend, companion, associate’, also from PIE base **mei-*. The adjective *maitreya* has been given as the name of a Bodhisattva and future Buddha—the fifth in the current line, Siddhartha Gautama being the fourth—*Maitreya* meaning ‘Loving one’. We also see this meaning in Pāli *mettā* ‘loving-kindness’, the translation of Sanskrit *maitrī*, akin to Buddhist compassion (*karunā*) and love or charity (*agapē*) in Christianity.

The vision that the next Buddha, as Maitreya, will be a sangha, cognate with *synergy* and Russian *soviet* 'assembly', is in marked contrast with the eschatological prophecies of other religions. For instance, at the end of time, Jews expect the Messiah to appear, Christians the second coming of Christ (Parousia), together with the anti-Christ, Muslims the Mahdi, and Hindus the Kalki Avatar.³³³

For realizing that no one can be fully awakened in isolation, the Mahāyāna Buddhists introduced the notion of *Bodhisattva*, an 'enlightenment being', who takes a vow renouncing full Buddhahood and complete entry into *Nirvāna* 'extinction' until all beings are saved, in contrast to *Arhat* in *Hinayāna* Buddhism.³³⁴

So *community* literally means 'changing together in loving friendship', synergistically cocreating the Sharing Economy, which Bernard Lietaer³³⁵ and Charles Eisenstein,³³⁶ among others, have called the Gift Economy. But as the former points out, quoting Thanissaro Bhikku, "According to the Buddhist monastic code, monks and nuns are not allowed to accept money or even to engage in barter or trade with lay people. They live entirely in an economy of gifts."³³⁷

What this means, as we saw on page 24 using Peirce's abductive reasoning, is that if we are to heal our grievously sick society, we need to change from a having mode of existence to a being mode. In *To Have or To Be?*, which *Publishers Weekly* described as 'A new blueprint for mankind', Erich Fromm made this distinction between these two modes of living: "Having refers to *things* and things are fixed and *describable*. Being refers to *experience*, and human experience is in principle not describable." Nevertheless, Fromm said that the essence of the being mode of existence is that of inner activity, the productive use of our human powers, which requires "independence, freedom, and the presence of critical reason".³³⁸ In contrast, by having, Erich Fromm meant the acquisition of property, the fundamental principle being:

Where and how my property was acquired or what I do with it is nobody's business but my own; as long as I do not violate the law, my right is unrestricted and absolute. This kind of property may be called *private* property (from Latin *privare*, 'to deprive of'), because the person or persons who own it are its sole masters, with full power to deprive others of its use or enjoyment.³³⁹

This property-owning principle has a long history, going back to *ius privatum* 'private law' in the Roman Republic. Contrasted with *ius publicum* 'laws relating to the state', *ius privatum* regulated the relationships between individuals.³⁴⁰ So to ensure what the Greeks called *eunomia* 'good order', beginning in the middle of the fifth century BCE, Rome took the principle of justice for all and embodied this into a fully-fledged legal system, originally published in the form of Twelve Tables. These were written down to prevent wealthy senators from seizing private property. It was from this that the legal principle that property is sacred developed.³⁴¹ In the Middle Ages, the principles of Roman law were studied in the universities, and even today, they underlie many legal systems.³⁴²

But does this absolute principle of private property make any sense in today's awakening society? There is only one Absolute, which we all share. Furthermore, as we are never separate from the Divine, there is no doership or ownership, as Advaita sages, like Ramesh S. Balsekar and Viji Shankar, formerly president of the Bank of India and a medical practitioner and researcher, respectively, have pointed out. In addition, the Akashic paradigm, which is growing in acceptance, shows that no beings in the relativistic world of form are separate from any other for an instant.

This means that in the Sharing Economy, there will actually be no need for money, as either an accounting system or as a store of value. The other species, stars and galaxies, molecules, atoms, and subatomic particles have no need for money in their relationships with each other and their environment. So why have we humans created a concept that separates us from each other, Nature, and the Divine?

Well, we answer this question in this section, enabling us to follow William Shenstone, who said of an anonymous friend in a letter in 1741, “I loved him for nothing so much as his flocci-nauci-nihili-pilification of money.”³⁴³ The word *floccinaucinihilipilification*, the longest nontechnical word in English, humorously means ‘the action or habit of estimating as worthless’, from *floc̄cī*, *nauc̄ī*, *nihilī*, and *pilī*, words signifying ‘at a small price’ or ‘at nothing’, enumerated in a well-known rule of the Eton Latin Grammar. For *floc̄cī* derives from *floccus* ‘a wisp or piece of wool’, *nauc̄ī* from *naucum* ‘a trifle’, *nihilī* from *nihil* ‘nothing’, and *pilī* from *pilus* ‘a hair’.

So let us explore what this means a little further. We begin with a brief study of the concept of money in the context of meaning and value, and continue with a few psychospiritual perspectives on these vitally important issues. We conclude this section by looking at two key scenarios, reviewing the possibilities of humanity, as a whole, evolving into the harmonious Mystical Society.

Meaning and value

If we are to cocreate a global economy in harmony with the fundamental laws of the Universe through total-system transformation, we need to understand how we have got into the mess we are in today. The ancients had an intuitive feeling for these laws, as we can see through a study of etymology—the origin of the meaning of words—but they did understand what they knew. This ignorance led to much existential fear, which cruelly affects our business affairs, even today. For, as we shall see, money evolved directly from the sacrifices to the gods that fearful archaic societies made.

From a cosmogonic perspective, the key point to note is that the meaningless Datum and data patterns that emerge from the Origin of the Universe are causal. They are also a gift of the Divine, for *Datum* derives from Latin *dare* ‘to give, cause’, cognate with Sanskrit *dā* ‘to give’ and *da* ‘gift’.³⁴⁴ Now, as we saw on page 3, in the *Upanishads*, the Datum was called Brahman. But everyone was not a *jñāni*, gnostically knowing that Brahman and Atman are one in direct, immediate experience, called *Shūnyāta* ‘Emptiness’ and *Anātman* ‘Non-Self’ in Buddhism. Most had not completed the spiritual quest, described in Section ‘Recapitulating the Cosmogonic Cycle’ on page 88.

So for the population at large, many hymns and rituals were created to help people assuage the fears that arise from separation from the Divine, which the analytical mind divided into deities, more accessible, as people could experience the *effects* of the Divine, without having to know the Absolute itself. Initially, the sky and sun were used as metaphors for the expansiveness and brilliant light of the Divine. But then deities began to become humanized, such as the Egyptian god Horus, and the many deities in Indian, Greek, Roman, and Scandinavian mythology, for instance.

As Barry Long suggests in his magnum opus *The Origins of Man and the Universe: The Myth that Came to Life*, this personalization probably came about because the first self-realized men participated in human affairs with apparently miraculous powers, “a very rare phenomenon in the small communities of unselfconsciousness men who lived together in various parts of the globe”.³⁴⁵ These self-realized women and men came to be called shamans in the Altai Mountains in southern Siberia, a term that spread into other similar indigenous cultures. These eventually led to the priests of the organized religions, dressed in distinctive clothes with distinctive titles, claiming to know the ‘word of God’, even though many are far from being mystics, living in union with the Divine, free of the sense of a separate self.

These ancient deities correspond to data patterns in IRL, for they too are causal and given, shared by all, prior to interpretation by human beings. The hymns that were used in rituals have been collected in

the *Vedas*, from Sanskrit *vēda* ‘knowledge, sacred teaching’, from *vid* ‘to know’, from PIE base **weid* ‘to see’, also root of *wisdom*, *vision*, *idea*, and *story*, among many other words.

To make these primal data energies more meaningful to the people, the mother of the sun gods—the Divine Matrix—is called *Aditī* in the *Rig Veda*, the feminine form of *Aditi* ‘unlimited space, eternity, infinite consciousness’. It is pertinent to note here that *Brahma*, *Shiva*, and *Vishnu* in Hinduism correspond to the Creator (*Al-Khaliq*), the Destroyer (*Al-Mumit*), and the Preserver (*Al-Hafiz*) in Islam, three of the ‘ninety-nine beautiful names of God’: “God has the most excellent names: therefore call on him by the same.”³⁴⁶ So while Islam and Hinduism are regarded as monotheistic and polytheistic, respectively, they are both actually both, corresponding to the Datum of the Universe and the data patterns that arise from the Absolute, or Akasha and Prana.

How ordinary householders, in contrast to the rishis, related to the gods is encapsulated in just four verses in the thirtieth hymn of Book 8 in *Rig Veda*, the *Veda* of poetry:

1. Not one of you, gods, is small, not one a little child; all or you are truly great.
2. Therefore you are worthy of praise and of sacrifice, you thirty-three gods of Manu, arrogant and powerful.
3. Protect us, help us and speak for us; do not lead us into the distance far away from our father Manu [eponymous ancestor of mankind].
4. You gods who are all here and who belong to all men, give far-reaching shelter to us and our cows and horses.³⁴⁷

As people were unconsciously guided by the Principle of Unity, the fundamental law of the Universe, we can see why they were led to make sacrifices from the root of *sacrifice*, which derives from Latin *sacrificium* ‘sacrifice’, from *sacrāre* ‘to dedicate to a god, make holy’, from *sacer* ‘sacred, holy’, from PIE base **sak-* ‘to sanctify’, also root of *saint* and *sanctuary*, and *facere* ‘to make’. So to sacrifice literally means ‘to make Whole’, through the union of opposites, leading to a healthy way of living and being.

For the word *health* derives from an Old High German word *heilida*, which is cognate with *heil* ‘whole’ and *heilag* ‘holy’, from PIE base *kailo-* ‘whole, uninjured, of good omen’. In contrast, evolution’s tendency to form wholes of ever-increasing complexity, which Jan Christiaan Smuts called *holism*,³⁴⁸ derives from Greek *ólos* ‘whole, with a PIE base **sol-* ‘whole’, also root of *safe*, *salubrious*, *solid*, *catholic*, and *saviour*. It seems that it is just a happy coincidence that the PIE bases for *holy* and *holistic* should be different.

But to heal our fragmented minds and grievously sick society, it is not necessary to make sacrifices to the gods. All we need to do is let go of egoic attachment to the entire world of form. By coming into union with the Divine in this manner, we find that which is of the greatest value in the Universe: the glorious, meaningless Absolute, which we all share. Nothing else really matters.

However, in the early days of human phylogeny, very few people understood this most glorious principle of the Universe, believing that they were separate from the Divine and their fellow humans. So as Henri Hubert and Marcel Mauss tell us in *Sacrifice: Its Nature and Function*, published in *Année Sociologique* in 1898, our distant ancestors were moved to make sacrifices to the gods.³⁴⁹

To understand why this happened, we need to feel empathetically into the minds of these early humans, mapping human phylogeny on to human ontogeny. For these people had just been given the great gift of self-reflective intelligence, the Divine quality that distinguishes humans from the other animals. But what were they to make of this new ability? They were like infants in adult bodies, but, as a species, *Homo sapien sapiens* had only just begun to learn about the world that we had been born into. People could sense the Power and Presence of the Divine, prior to existence, but they could not access it through their physical senses. So they invented a multitude of gods and goddesses to assuage their fear, which they worshipped, prayed to, and made sacrifices to. These fears eventually gave birth to the organized religions and modern economics in the form of capitalism and communism.

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For as Marcel Mauss tells us in 1925 in *The Gift*, as a development of his essay *Sacrifice*, Sanskrit *dadami se, debi me* ‘I give you in return, as you give me’ in the *Yajurveda* ‘the Veda of sacrificial texts’ indicates the way that sacrificial gifts to deities led to gift economies in what he called ‘archaic’ societies.³⁵⁰ Similarly, the Latin formula *do ut des* ‘I give so that you may give’ in Roman religion and law expresses the reciprocity of exchange between humans and deities, where people are obliged to make sacrifices, with the expectation that they will receive something in return,³⁵¹ then extended into gifts between individuals and groups.

However, what the ancients understood by gift is quite different from what are (mis)understood as gifts today. For as Mary Douglas writes in the introduction to W. D. Halls’ 1990 translation of *Essai sur le don*, there is no such thing as a gift, freely given. As she says, “What is wrong with the so-called free gift is the donor’s intention to be exempt from return gifts coming from the recipient.”³⁵² Conversely, the acronym TANSTAAFL ‘there ain’t no such thing as a free lunch’ indicates that something that appears to be free will generally have hidden costs.

What this means, as E. E. Evans-Pritchard points out in his introduction to Ian Cunnison’s 1954 translation, is that Mauss saw social phenomena—as his uncle Émile Durkheim had taught that they should be seen—in their totality. As Evans-Pritchard highlights, “‘Total’ is the key word of the Essay. The exchanges of archaic societies which he examines are total social movements or activities. They are at the same time economic, juridical, moral, aesthetic, religious, mythological and socio-morphological phenomena.”

As an aside, such a holistic approach to social studies was to lead to Claude Lévi-Strauss’ structural anthropology, as Claire Jacobson pointed out in her translation of *Anthropologie structurale*.³⁵³ This is especially noteworthy for Lévi-Strauss was influenced by Ferdinand de Saussure’s structural linguistics and Hegel’s logic, which lie at the heart of Integral Relational Logic, suitably generalized.

Mauss used two words in his essay to denote the system of gifts in so-called primitive societies. The first was the French word *prestation*. The OED records the use of *prestation* in English from 1473 to mean ‘The action of paying, in money or service, what is due by law or custom’. However, as both translators of *Essai* point out, Mauss’s use of French *prestation* has a somewhat different meaning. In anthropological French, *prestation* means ‘the actual act of exchange of gifts and rendering of services, and the reciprocating or return of these gifts and services’. In the event, Cunnison ‘translated’ *prestation* and *contre-prestation* as *prestation* and *counter-prestation*,³⁵⁴ while Halls used the terms *total services* and *total counter-services*, for Mauss himself used the term *prestation totale*.³⁵⁵

Obligatory reciprocation, obeying the Principle of Unity, is key here. As Mauss said, “Total prestation not only carries with it the obligation to repay gifts received, but it implies two others equally important: the obligation to give presents and the obligation to receive them.” For as he said, “prestations, which are in theory voluntary, disinterested and spontaneous, ... are in fact obligatory and interested. The form usually taken is that of the gift generously offered; but the accompanying behaviour is formal pretence and social deception, while the transaction itself is based on obligation and economic self-interest.”³⁵⁶

The second word that Mauss used to denote archaic gift economies was *potlatch*, Chinook jargon, from Nootka Indian *p’acitl* ‘make a gift at a potlatch’, a potlatch being “A ceremonial feast among certain Native American peoples of the northwest Pacific coast, as in celebration of a marriage or accession, at which the host distributes gifts according to each guest’s rank or status. Between rival groups the potlatch could involve extravagant or competitive giving and destruction by the host of valued items as a display of superior wealth.”³⁵⁷

Mauss used the word *potlatch* to denote the competitive nature of such economic systems because he was struck by the spirit of rivalry and antagonism among these tribes, which dominated all their activities. “Essentially usurious and extravagant, it is above all a struggle among nobles to determine their position in the hierarchy to the ultimate benefit, if they are successful, of their own clans.”³⁵⁸ He called this agonistic type of total prestation *potlatch* wherever he found it in ancient cultures, for *agonistic* derives from Greek *agon* ‘contest, conflict’, also the root of *agony*.

In his ethnographic studies, Mauss found a wide spectrum of gift economies, from the spiritual to the antagonistic. As an example of the former, in the Maori culture, gifts, known as *taonga*, carry within them *hao* the spiritual power of the gift and the giver. “The *taonga* is animated by the *hao* of its forest, its native heath and soil. It is truly ‘native’: the *hao* follows after anyone possessing the thing.” This system is “purely Maori, permeated by that, as yet, vague theological and juridical spirit of doctrines within the ‘house of secrets’”.³⁵⁹ As Tamati Ranaipiri, a Maori lawyer, described this occult system for maintaining social order:

The *taonga* and all goods termed strictly personal possess a *hao*, a spiritual power. You give me one of them, and I pass it on to a third party; he gives another to me in turn, because he is impelled to do so by the *hao* my present possesses. I, for my part, am obliged to give you that thing because I must return to you what is in reality the effect of the *hao* of your *taonga*.³⁶⁰

In contrast, Mauss found examples of potlatch, not only in the American Northwest, but also in Polynesia, particularly in the Trobriand Islands, where Bronisław Malinowski described the complete system of inter- and intratribal trade between the nobles or chiefs of the islands, known as *kula*. Mauss calls the *kula* “a sort of grand potlatch”, where gifts of little intrinsic value were given and received across both space and time in a great circle, for the purpose of enhancing one’s social status and prestige. As Mauss puts it, “Indeed it is as if all these tribes, these expeditions across the sea, these precious things and objects for use, these types of food and festivals, these services rendered of all kinds, ritual and sexual, these men and women, were caught up in a circle.”³⁶¹

Mauss then tells us, “The essential objects in these exchange-gifts are the *vaygu’a*, a kind of money,” which took the form of beautiful bracelets and necklaces, which were signs of wealth, symbols of one’s status in the community. However, “They must not be kept too long a time, nor must one be slow or difficult in passing them on.” For while the bracelets and necklaces were much treasured and admired, the sense of ownership that they gave was of a peculiar kind: “It is ownership and possession, a pledge and something hired out, a thing sold and bought, and at the same time deposited, mandated, and bequeathed in order to be passed on to another. For it is only given you on condition that you make use of it for another or pass it on to a third person, the ‘distant partner’. ... Such is the nature of this economic, legal, and moral entity, ... [an] institution [that] has also its mythical, religious, and magical aspect.”³⁶²

So what can we learn from these ancient gift economies for what Marshall McLuhan presciently called the ‘Global Village’ in the early 1960s, today more a wireless than a wired society then emerging? Well, to do this, we need to look more deeply into the psychodynamics of the meaning and hence value of money. We can see the religious origins of money, for the word derives from Latin *Moneta*, cult name for the goddess Juno, in whose temple coins were minted, which led to *moneta* ‘a mint’.

But what is money? Well, money is simply information, for when we view the Universe as meaningful, structure-forming relationships through the eyes of information systems architects, everything is information, and money is no exception. And as we saw on page 17, information is simply data with meaning, formed by regarding the concepts of set and concept to be more fundamental than those of number and sign or symbol, respectively. We can thus see why Daniel Bell said that there is no economics

of information, mentioned on page 15. At these unprecedented times, the invention of the stored-program computer in the 1940s requires us to look at the way we manage our business affairs in a totally new way.

But let us first look at the mysterious concept of money in a little more detail. Money was invented essentially as a convenience to facilitate trade. For as people's work began to specialize, producing surpluses and developing more than people needed for themselves, they needed to trade with each other, exchanging goods and services. At first, they did so through bartering systems without the exchange of money. This works in very simple societies exchanging just a few commodities; in such societies, "the absence of a common standard of values is no great problem." "Thus trading in three commodities gives rise at any one time to only three exchange rates and four commodities to six possible rates." As Glyn Davies says in *A History of Money*, the general formula comes from combinatorial mathematics, where n is the number of commodities and r is the number of elements to be selected, in this case 2 for bilateral trading:³⁶³

$$C_r^n = \frac{n!}{(n-r)!}$$

So this general formula for barter transactions reduces to $n(n-1)/2$, the sum of all the numbers from 1 to $n-1$, for whenever a commodity is added, new exchange rates must be established with all other commodities. The formula tells us that 4,950 and 499,500 exchange rates would be needed to support a bartering system of 100 and 1,000 commodities, respectively. Apart from this, "if the owner of an orchard, having a surplus of apples, required boots he would need to find not simply a cobbler but a cobbler who wanted to purchase apples." Even with money as a means of exchange, there is a bartering problem with over 200 different national currencies. "If these were each of equal importance then foreign exchange would involve arbitrage between some 20,000 different combinations." However, a few leading currencies, the pound sterling in the nineteenth century, plus the American dollar, the Euro, and the Japanese yen, provide the basis of a common measure of international monetary values.³⁶⁴

This is the traditional way of viewing money through the eyes of materialistic science. But in the Information Society, we need to take a radically new perspective. Information and knowledge are not physical objects, giving them some rather strange properties in conventional economic terms. For instance, when I buy a loaf of bread, the object passes from the storekeeper to me in exchange for money. However, when a teacher gives pupils some information, nothing is exchanged. Teachers and pupils share the information. As Tom Stonier points out in *The Wealth of Information*, "Whereas material transactions can lead to competition, information transactions are much more likely to lead to cooperation—information is a resource which can be truly shared."³⁶⁵

That is one reason why we need to call the emerging economy the Sharing Economy rather than the Gift Economy, as is more popular today. The other principal reason is that we all share the Divine Presence as the Datum of the Universe, which exists prior to existence, the Principle of Unity, and the few simple structures that lie in the ontological level of the foundations of all knowledge.

In the Mystical Society, this universal sharing principle will also apply when information is contained within substances, which is another misnomer deriving from a false view of Reality. Today, in our materialistic world, we primarily think of substance as matter 'that which has mass and occupies space'. However, this is not the original meaning of the word, which has a Latin root *substantia* 'substance, essence', from *substāre* 'to stand or be under, to be present', from *sub-* 'under' and *stāre* 'to stand'. The primary, spiritual meaning of *substance* is 'essential nature, essence', that which lies within, beneath the superficial,

beneath the surface of the physical universe accessible through the senses. However, in parallel with the development of this esoteric meaning, in 1398, *substance* came to mean the human body, from which came ‘That of which a physical thing consists; the material of which a body is formed and in virtue of which it possesses certain properties’. This change of emphasis is yet another example of the way that the Western mind has turned the Western worldview upside down, putting second things first.

This misconception of Reality—as Substance ‘that which stands under’—is crystal clear in the way humanity has traditionally viewed money, for it is undoubtedly the most peculiar invention that the human mind has ever manifested. Money has many guises depending on which function or functions is or are being considered. In *A History of Money*, Davies lists ten of these.³⁶⁶

The most fundamental function is ‘Unit of account’, closely related to the second function ‘Common measure of value’, both functions being abstract. Money, as a unit, is thus similar to metres, grams, degrees, amperes, and many other units that we measure domains of values in. But what money is measuring is by no means clear. It is not anything in our physical world. There is no scientific standard for money, as there is for metres and kilograms, for instance, although some attempt has been made during the ages to make gold a standard. Money, as a unit of account for measuring value, is a purely arbitrary notion. It cannot even be said to have a sound mathematical foundation other than it is expressed numerically.

To make monetary units more tangible, a way had to be found of using them as a measuring stick, just as rulers, scales, thermometers, and ammeters measure millimetres, grams, degrees, and amperes respectively. A vast multitude of different kinds of objects have been used as primitive money, including amber, beads, cowries, drums, eggs, feathers, gongs, hoes, ivory, jade, kettles, leather, mats, nails, oxen, pigs, quartz, rice, salt, thimbles, umiaks (boats used by Eskimo people), vodka, wampum, yarns, and zappozats (decorated axes). These commodities, along with the precious metals, such as gold and silver, and later base-metal coins, thus provide the next two concrete functions of money: ‘Medium of exchange’ and ‘Means of payment’.

For an object to qualify as a form of money, it must satisfy a few fundamental principles. First, it must be available in sufficient numbers in the community, but, paradoxically, be of limited supply. An effectively infinite supply of objects, such as grains of sand, would not meet the requirements. Scarcity is thus an essential characteristic of money, an absurd situation in a universe of infinite possibilities, as the quantum physicist Amit Goswami points out.³⁶⁷ Secondly, money should be reasonably durable during its period of usage. And thirdly, money, as an object, needs to be handy; objects that are too large or small are not suitable.

Now once money, as an abstract measuring unit, becomes reified as a commodity with value, it can be used for two other functions, one abstract, the other concrete: ‘Standard for deferred payments’ and ‘Store of value’. These functions are what make money such a peculiar notion. As a store of value, money can be bought and sold like any other commodity, which happens every time we exchange one currency for another when we travel overseas. Yet, in essence, money is just a measuring stick. So when we buy and sell money as a commodity, we are effectively trading in units like centimetres and decilitres, an absurdity.

Michael Linton attempted to deal with the reification of money in his Local Exchange Trading System (LETS). As he said in *The LETS System Design Manual*, “Conventional money ... confuses valuations. Because conventional money is scarce, it has more than just a trading value, it also has a commodity value. Effectively, it is considered and treated as real.” On the other hand, “local money is essentially a promise by some members of the community to give service to others.”³⁶⁸

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However, separating money as a measuring stick from its use as a store of value doesn't really work. For while the total balance of everyone's accounts is constantly zero, individual accounts are either positive or negative. And this can give rise to jealousy while people are egoically attached to the sense of a separate self, rather than seeing themselves as the community as a whole. So while a LETSystem can provide a useful administrative tool for local communities, an accounting system actually reinforces the divisiveness of money. If such communities are to truly follow the adage "the next Buddha is the sangha," it is best not to record transactions or to record them with zero value, the birth of the genuine Sharing Economy.

But could such a healthy system spread into the world as a whole? Well, a central issue here is that some 97% of all financial transactions by volume involve trade in money-related products, not the goods and services we need for our daily lives. Furthermore, some 97% of money in circulation has been created as debt by the banks, not created by governments in the traditional way as fiat money through seigniorage.³⁶⁹ As the result of this reifying absurdity, even governments are in debt to the banks, as the euro crisis in recent years has shown, leading to much social unrest. While money has been called the life-blood of society, it is blood that is being sucked out from the many to feed the egoic cravings of the few.

This happens because banks are allowed to lend 9 times more money than the deposits they have in the bank, known as the required reserve ratio. Using the formula on page 59, which shows that evolution is currently passing through an epoch-making singularity in time, the total that banks can lend is up to 90 times more than the initial deposit, for in this case $r = 10/9$ and the limit of the sum of the infinite series is 90, when a is 9.³⁷⁰ As is becoming crystal clear, such a debt-based economy is unsustainable, causing severe psychological and ecological damage, driving humanity to the brink of extinction.

There is another major problem here. To make the meaning of knowledge fit into quantitative and materialistic economics, not only have we reified money, we have also reified information, turning it into an object that can be bought and sold, like washing powder. So we have intellectual property laws, such as copyright, patent, and trademark, defending the belief that human beings are the originators of what is created through them, ignoring the role that Life or God the Creator plays in creativity.

The furore around the Protect Intellectual Property Act (PIPA) and Stop Online Piracy Act (SOPA) in January 2012, when Wikipedia closed down for twenty-four hours, indicates the tensions between those who seek to protect what they see as their property and those who seek to promote the free flow of knowledge and information on the Internet. Then there is the furore around Wikileaks, founded by Julian Assange in 2006, and that around Edward Snowden, who in 2013 revealed that the National Security Agency (NSA) in the USA is constantly monitoring the emails and telephone calls of ordinary American citizens. The ruling authorities are so afraid of such disclosures that they call such revealers traitors, sentencing them to many years imprisonment or even executing them as spies.

Money as an immortality symbol

We now come to the main reason why money plays such a dominant role in people's lives. Because we have become cognitively and experientially separated from Reality—from the Immortal Ground of Being that we all share—we have created immortality symbols to assuage our fear of death, giving ourselves a deluded and precarious sense of security and identity. As Ernest Becker argued in *The Denial of Death*, which won the Pulitzer Prize for general nonfiction in 1974, "man's innate and all-encompassing fear of death drives him to attempt to transcend death through culturally standardized hero systems and symbols."³⁷¹

Then in the posthumously published *Escape from Evil*, which Becker's widow Marie described as his 'magnum opus', he attempted "to show that man's natural and inevitable urge to deny mortality and achieve a heroic self-image are the root causes of human evil."³⁷² This is a theme taken up by a number of other psychologists.

For instance, Anthony Storr points out in *Human Aggression*: "With the exception of certain rodents, no other vertebrate habitually destroys members of its own species. No other animal takes positive pleasure in the exercise of cruelty upon another of his own kind ... The sombre fact is that we are the cruellest and most ruthless species that has ever walked the earth."³⁷³

In a similar fashion, Erich Fromm quotes these words of Nikolaas Tinbergen in *The Anatomy of Human Destructiveness*: "On the one hand, man is akin to many species of animals in that he fights his own species. But on the other hand, he is, among the thousands of species that fight, the only one in which fighting is disruptive ... Man is the only species that is a mass murderer, the only misfit in his own society."³⁷⁴

Specifically, Becker explored the role of money as "The New Universal Immortality Ideology", referencing Norman O. Brown's *Life Against Death*: "the reason money is so elusive to our understanding is that it is *still sacred*, still a magical object on which we rely for our entrance to immortality." And quoting Mary Douglas "Money is only an extreme and specialized type of ritual."³⁷⁵

Ritualistic immortality symbols have taken many forms over the years. Traditionally, such immortality symbols have been religious in character: the belief in an immortal personal soul, which either reincarnates indefinitely in cyclic time or has ever-lasting life in linear time. But as we saw on page 58, there are an infinite number of infinite cardinals in mathematics. So if people believe that they will live for eternity, which infinity are they referring to?

However, with the decline of primitive rituals, people sought to imitate kings in their own pursuit of immortality. As Becker put it, also quoted by Ken Wilber in *Up From Eden*:

And so the pursuit of money was also opened up in the average man, gold became the new immortality symbol. In the temple buildings, palaces, monuments of the new cities, we see a new kind of power being generated. No longer the power of totemic communion, but the power of testimonial of piles of stones and gold.³⁷⁶

We can see quite clearly that money is an immortality symbol from the tower blocks that banks build in the centre of major cities today. As James Robertson, cofounder in the mid 1980s of the New Economics Foundation (NEF) and The Other Economic Summit (TOES), points out in *Future Work*, these buildings play a similar role in society today to the cathedrals that dominated the centres of medieval cities. Both serve to reinforce our belief in immortality symbols; in the Middle Ages, the notion of a personal God, and today, money. As James goes on to say, "The theologians of the late middle ages have their counterpart in the economists of the late industrial age. Financial mumbo-jumbo holds us in thrall today, as religious mumbo-jumbo held our ancestors then."³⁷⁷

This is the most critical point. For when our sense of security is based on immortality symbols, people do their utmost to defend them, even to the death. This situation was tragically brought home to us all on 11th September 2001, when two hijacked planes crashed into the twin towers of the World Trade Center in New York. While this was a great shock, it wasn't really a surprise. For this was clearly an attack not just on people and property, but on the immortality symbols that these towers represented. Because immortality symbols take on absolutist values, we thus saw the effects of a holy war, in this instance between religious and economic fundamentalism.

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Furthermore, we can see a close association between financial and religious immortality symbols from the letters F D or FID DEF, embossed on British coins near the Queen's head. For these initials and abbreviations stand for *fidei defensor* meaning that Queen Elizabeth II is Defender of the Faith, a title originally given by Pope Leo X to King Henry VIII in 1521. Subsequently, this Tudor king split from Rome and the title was revoked. However, in 1544, the English parliament conferred the title 'Defender of Faith' on King Edward VI and his successors as the head of the Church of England.³⁷⁸ To this day, no Roman Catholic is allowed to succeed to the British throne; the monarchs of the United Kingdom of Great Britain and Northern Ireland are specifically charged with defending the Anglican faith alone, an anomalous situation in today's multicultural society, which the Prince of Wales is particularly concerned about.

In a similar fashion, the words *In God We Trust*, the motto of the United States of America, has appeared on American coins since 1864 and on banknotes since 1957.³⁷⁹ This motto seems to have come from America's national anthem, *The Star-Spangled Banner*, which contains these two lines: "Then conquer we must, when our cause it is just, / And this be our motto—"In God is our trust."³⁸⁰ This poem, written by Francis Scott Key, was inspired by an American victory over the British in 1814. So capitalism is closely associated with the notion that Americans are God's chosen people and that God is on the side of nations when they go to war, often expressed in these words: "God bless America." So they tend to side with the Jews—similarly regarding themselves as God's chosen people—in Middle Eastern conflicts with the Islamic Arabic states, which similarly regard their religion as exclusively the one true religion. Because of such existential fears, people therefore generally reject E. F. Schumacher's maxim for mapmaking, given in *A Guide for the Perplexed*: 'Accept everything; reject nothing.'³⁸¹

It is therefore not surprising that Eckhart Tolle says in *A New Earth*, being promoted by Oprah Winfrey, "We are a species that has lost its way."³⁸² Earlier, he said in *Stillness Speaks*, an inspiring book of aphorisms:

The transformation of human consciousness is no longer a luxury, so to speak, available only to a few isolated individuals, but a necessity if humanity is not to destroy itself. At the present time, the dysfunction of the old consciousness and the arising of the new are both accelerating. Paradoxically, things are getting worse and better at the same time, although the worse is more apparent because it makes so much 'noise'.³⁸³

Plato was well aware of the problem of money in describing his ideal state, ruled by philosopher-kings, as we saw on page 36 when looking at the role of information systems architects in business. So a society ruled by financiers, economists, and accountants, the high priests of Western civilization, is not viable.

Many have been saying much the same thing during the past few decades. For instance, Mike Hussey, late Professor at the Open University in the UK, said, "Money is institutionalized mistrust."³⁸⁴ And as Gary Alexander, also formerly of the Open University, says in *eGaia*, if we are to cure the cancer that is spreading through society today, we need "co-operative economic structures in which information systems provide better measures of cost, of people's social contributions and the other ingredients needed to organise an economy than are provided by conventional money."³⁸⁵

In a similar fashion, Ralph Metzner says in *The Roots of War and Domination*, "capitalism ... is an institutionalized system of slavery and predation,"³⁸⁶ closely related to the war system, for as a satirical report from 1967 indicated, if we ever lived in love and peace with each other, the global economy would collapse!³⁸⁷ This supposedly 'secret government report', called *Report from Iron Mountain: On the Possibility & Desirability of Peace*, turned out to be hoax, investigating the dire consequences of 'permanent peace' on the United States' economic and social stability. Nevertheless, many a truth is spoken in jest, such as this concluding sentiment from the report: "War ... is itself the principal basis of organization on which all

modern societies are constructed.”³⁸⁸ And as Ralph points out, the root of this problem lies in the concept of the joint-stock company, whose original purpose was “the production of shoes, bread and other ‘goods’ and the provision of services, such as transportation or construction”.³⁸⁹

When joint-stock companies were first established in the seventeenth and eighteenth centuries, they were incorporated with Articles of Association, which stated the relationship of the company to its shareholders and directors, and a Memorandum of Association, which governed the relationship of the company to the outside world. The Memorandum contained, among other things, the objects of the company: baking bread, building houses, making coats, or whatever. However, over the years, these meaningful purposes have increasingly been disregarded in favour of the single purpose of making money. So as far as company law is concerned, selling guns to kill people or drugs to poison them are legitimate objects of business, making a positive contribution to a country’s Gross Domestic Product (GDP). Car crashes are even considered a positive contribution to a nation’s GDP! To reflect this reduction of purpose to a lowest common denominator, it is no longer necessary in the UK to state a company’s objects; money is the only thing that matters, by law.

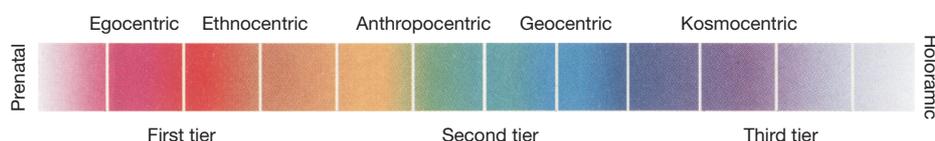
In *The Ascent of Money*, Niall Ferguson makes another point about the symbiotic relationship between money and war. Quoting Heraclitus’ “War is both father and king of all,” he points out that the ability of governments to finance wars through government debt by issuing bonds goes back to the fourteenth and fifteenth centuries.³⁹⁰ And as John Kenneth Galbraith says in *Money*, while “Money is a very old convenience,” it has nevertheless financed wars throughout history, such as the American Revolution.³⁹¹

There is no need to pursue this critical issue any further. For following the invention of the stored-program computer in the 1940s, we urgently need to think in a totally new way about how we teach our children and organize our business affairs. For it is crystal clear that the work ethic that has prevailed for some 10,000 years, since our forebears first settled in village communities to cultivate the soil and domesticate animals is no longer viable.

The spectrum of consciousness

Given that most of humanity today is held in the tight grip of existential fear, generally assuaged through the use of money as an immortality symbol and on ecologists’ pursuit of sustainability, what are the prospects of Mystical Pragmatics becoming viable even on a local scale? Could we all, collectively, enter the superhuman together, as Teilhard foresaw? To explore this possibility, each of us needs to examine what give us a sense of security and identity in life, for these are the basis for what gives us meaning and value.

Now, as we saw on page 10, while there is only one True Identity that we all share, there are many different levels of personal identity, which we can begin to explore through what some philosophers, psychologists, and spiritual teachers call the spectrum of consciousness. For instance, drawing on many different models of human development, Ken Wilber has shown in a brilliant series of books from *The Spectrum of Consciousness* in 1977 to *Integral Spirituality* in 2006 that we human beings develop through various levels and tiers of consciousness, reaching a maximum according to our lights, a maximum that incorporates all the earlier levels, illustrated here.



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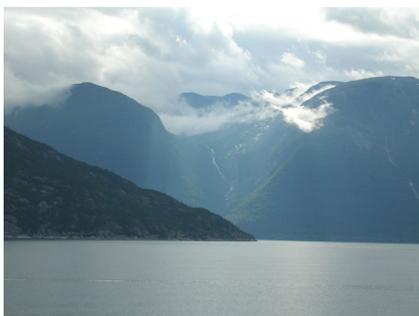
It is a very helpful model, despite its weaknesses. In particular, it does not include the pre- and perinatal domain, as Stanislov Grof points out in an article in *Ken Wilber in Dialogue*.³⁹² For instance, in the Preface to *Integral Life Practice* from 2008, which Ken describes as a ‘second-tier practice’, he says, “Developmental models are in general agreement that human beings, *from birth*, go through a series of stages or waves of growth and development.” [my emphasis]³⁹³

Regarding the model itself, at the lowest level is an egocentric identity, where the emphasis is on our unique bodies and minds. The next level is ethnocentric, such as that shared by nations and religions, such as Chinese and Christianity. The vast majority of humankind live predominantly at this level of consciousness, which is why democracies are tyrannous, attempting to inhibit the rest of humanity from developing into the second and third tiers.

Ken calls the second tier worldcentric,³⁹⁴ which perhaps would be better as *mundocentric*, from the Latin *mundus* ‘world’, cognate with *mundane*. However, we can see different levels of identity here too. When we identify with *Homo sapiens sapiens* to the exclusion of the other species, we can call this an anthropocentric identity. Then there is the mechanistic identity that some share with stored-program computers as knowledgeable, information-processing beings. Broadening further, we also have a geocentric identity that we share with the other animals, living beings, and even rocks as earthlings dwelling on our beautiful planet Earth.

Andrew Cohen and Ken Wilber call the third tier cosmocentric³⁹⁵ and kosmocentric, respectively, meaning “an identification with all life and consciousness, human or otherwise, and a deeply felt responsibility for the evolutionary process as a whole ... an emergent capacity, rarely seen anywhere”.³⁹⁶ However, there is some confusion here between evolutionary and involutory processes.

As we see on page 56, Ken has tried to use Aurobindo’s notions of evolution and involution and the Great Chain of Being to make a distinction between these two processes and so explain the goal of the third tier. In *Sex, Ecology, Spirituality* from 1995, in a chapter called ‘The Depths of the Divine’, he calls the four levels of the third tier ‘Psychic’, ‘Subtle’, ‘Causal’, and ‘Nondual’,³⁹⁷ while in *Integral Spirituality* in 2006 he calls these levels ‘Illumined Mind’, ‘Intuitive Mind’, ‘Overmind’, and ‘Supermind’. So while in his early studies of the further reaches of human consciousness, Ken has focused attention on the downward involutory movement in the vertical dimension of time, in his later writings, he is more focused on the upward evolutionary movement.



However, because AQAL is an integrated operating system (IOS) running within the auspices of all-inclusive IRL, Ken has conflated the involutory and evolutionary spiritual paths. But when we distinguish and unify them, we can see that we are now not only standing on the summit of the mountain of all knowledge, but at once, resting in Stillness at the bottom of the Ocean of Consciousness, depicted in this photograph of Hardanger Fjord in Norway, where mountains 1000 m high plunge into the ocean 1000 m deep. It is by standing on this pathless land on the top of this mountain, like Hardangervidda, a nearby mountain plateau, that we can take a Holoramic ‘Whole-seeing’ perspective of the Cosmos, from Greek *ólos* ‘whole’ and *órāma* ‘sight, view’, cognate with *panoramic* ‘all-seeing’.

This is the view that information systems architects take when using IRL to integrate all knowledge in all cultures and disciplines into a coherent whole. But if we are to use IRL in Mystical Pragmatics to

build a global economic system that gives everyone the opportunity to realize their fullest potential according to their lights, we need to overcome a couple of major cultural taboos.

The great taboo

Now, we saw on the opening page of this treatise that knowing ourselves, never mind understanding ourselves, is a fundamental taboo in today's secular society, based, as it is, on materialistic and mechanistic science and on monetary economic systems, like capitalism and communism. The 99% of the Universe that is the Cosmic Psyche is out of bounds, mainly explored by the rapidly growing numbers of people on the fringes of society, often turning to the East for spiritual fulfilment.

However, in the West, in particular, there is an even greater taboo to overcome. It is actually forbidden to come into union with the Divine, as mystics in all ages have been doing, declaring, "I am the Truth" or "I am Love." The case of Meister Eckhart, briefly mentioned on page 4, is particularly interesting. Pope John XXII convicted him of heresy after the Franciscan Heinrich von Virneburg, Archbishop of Cologne, had condemned him for being a heretic.

At the Cologne court, on 26th September 1326, Eckhart first defended himself against forty-nine articles that had been abstracted from his sermons and writings as evidence of his heresy. However, as he did not understand why his accusers did not share the certainty of his mystical experiences, this did not go down very well. So the court drew up another fifty-nine examples of Eckhart's heresy. In the event, the Papal Bull, which stated that Eckhart "wished to know more than he should", reduced this to just twenty-eight propositions, some of which were heretical, and some of which were 'suspected of heresy', for under some interpretations, they could be construed to be consistent with Catholic dogma.³⁹⁸

One of these suspect heresies, number twenty-two, was, "The Father gives birth to me his Son and the same Son. Everything that God performs is one; therefore he gives me birth without distinction,"³⁹⁹ abstracted from his sixth sermon in the standard catalogue. This was merely 'suspect' presumably because in this sermon Eckhart was simply stating orthodox theology, saying that "the Birth (*geburt*) occurs within Man's Soul in just the same way as it occurs in eternity,"⁴⁰⁰ quoting the first verse of the Gospel of John in support of this experience, shared with many spiritual seekers today.⁴⁰¹

However, the twelfth article, taken from sermon 24, was deemed to be heretical, saying, "Whatever Holy Scripture says of Christ, all that is also true of every good and divine man."⁴⁰² This is something that many spiritual seekers know today. For Christ Consciousness is no different from Buddha Consciousness, which is no different from Impersonal Consciousness itself, which we all share as our Authentic Self.

We might think that in this so-called enlightened age that the Church's attitude would have changed. However, as recently as 3rd February 2003, the Vatican published a report on the Catholic view of the New Age movement, *Jesus Christ, The Bearer of the Water of Life: A Christian Reflection on the 'New Age'*, the title being an obvious reference to the Age of Aquarius, prematurely following on from the Age of Pisces. The central issue of this report is "man is essentially a creature and remains so for all eternity, so the absorption of the human I in the divine I will never be possible." The Christians' claim that the word of God, as expressed by the authoritarian priests, has a higher claim than people's direct experience of the Divine. According to this Catholic pamphlet, such a divine experience "results in distorting His Word and replacing it with purely human words".⁴⁰³

In a similar fashion, Pope John Paul II wrote in his encyclical *Faith and Reason* in 1998 that if reason is to be fully true to itself, it must be grounded in the "fear of God".⁴⁰⁴ But why be afraid? God is Love. And when we truly know God, when there is no other, no divisions in Consciousness, all fear disappears.

Then Love, pure Love, is revealed, as the mystic poets, such as Rumi and Kabir, have expressed most beautifully.

This split between the human and Divine in Western civilization, whose global economy is about to collapse like a house of cards, arises from the Council of Nicaea in Turkey in 325, when the Roman emperor Constantine, who had converted to Christianity thirteen years earlier, convened a council at Nicaea to “work out a standard formulation of Christian faith”.⁴⁰⁵

The essential reason for this council was that Jesus, like Mansur al-Hallaj and Meister Eckhart, was a mystic who knew the Truth. As he famously said, “If you continue in my word, then are you my disciples indeed; and you shall know the truth, and the truth shall make you free.”⁴⁰⁶ In a similar fashion, J. Krishnamurti said in 1929, when dissolving the organization that wanted to make him a World Teacher, “I maintain that truth is a pathless land, and you cannot approach it by any path whatsoever, by any religion, by any sect. ... Truth, being limitless, unconditioned, unapproachable by any path whatsoever, cannot be organized.”⁴⁰⁷

However, in the years immediately following Jesus’ death, a multitude of Christian sects sprang up that were far from being organized. Not only were people initiated into the Christian faith, they were often baptized a second time into a particular sect.⁴⁰⁸ One of these sects was a group called Thomas Christians, whose leader was Judas Thomas, one of the twelve disciples, known as ‘the twin’, *Thomas* being Aramaic for *twin*.⁴⁰⁹ These people were known as Gnostics, a name that clearly denotes the difference between them and the other sects. As Osho said in his discourses, theists and atheists are people who believe and do not believe in God; agnostics are those who do not know what to believe; and Gnostics are those who do not need to believe, for they know the Truth in their own direct experience,⁴¹⁰ like *jñānis* in the East, for Sanskrit *jñāna* means ‘spiritual wisdom and illumination, inner knowing of Ultimate Reality’.

As Elaine Pagels tells us, John probably wrote his gospel in the last decade of the first century to refute the teachings of the Thomas Christians. John is particularly critical of Thomas, the one called Didymous (Greek for twin). He invented the character of *doubting* Thomas, perhaps as a way of caricaturing a revered teacher who he regarded as faithless and false.⁴¹¹ In contrast, Saying 13 in the Gospel of Thomas shows clearly that Thomas was the one disciple who was closest to Jesus,⁴¹² which is perhaps why he is called ‘twin’.

In the second century, Polycarp, bishop of Smyrna, now Izmir in Turkey, sought to unify the multitude of Christian communities that then existed, hoping “that Christians everywhere would come to see themselves as members of a single church that they called catholic, which means ‘universal’,”⁴¹³ from *katholikos* in Greek, from *kata* ‘in respect of’ and *ólos* ‘whole’. Polycarp’s protégé, Irenaeus, who became bishop of Lugdunum in Gaul, now Lyon in France, took up this unifying cause for much of the second century,⁴¹⁴ miraculously escaping martyrdom, unlike so many of his contemporaries.

In simple terms, Irenaeus based his unifying theology on the principle that Jesus, alone, is divine, expressed most clearly in John’s Gospel, and that no one else can realize Christ consciousness. John thought that Jesus was “the only begotten Son of God”.⁴¹⁵ Even though Jesus said, “I am the light of the world,”⁴¹⁶ John said, “The world did not recognize it.”⁴¹⁷ Thus, because that divine light was not available to those ‘in the world’, John said, “The Logos was [exclusively] made flesh, and dwelt among us.”⁴¹⁸

In contrast, Thomas wrote in Saying 24 in his gnostic gospel that Jesus said, “There is a light within a person of light, and it lights up the whole world.”⁴¹⁹ There are many other sayings of Jesus in the Gospel of Thomas that show that Jesus did not claim that he was exclusively divine. These include: Saying 94, “One who seeks will find; for one who knocks it will be opened;”⁴²⁰ Saying 5, “Know what is in front of

your face, and what is hidden from you will be disclosed to you. For there is nothing hidden that will not be revealed;”⁴²¹ and Saying 49, “Fortunate are those who are alone and chosen, for you will find the kingdom. For you have come from it, and you will return there again.”⁴²²

Then in 367 CE, Athanasius, the bishop of Alexandria, issued an Easter letter demanding that Egyptian monks destroy the ‘secret writings’,⁴²³ including the Gospel of Thomas, which Irenaeus had denounced two hundred years earlier. Only the books that today constitute the New Testament were acceptable and canonical, from *canon*, a carpenter’s term meaning ‘guideline’.⁴²⁴ However, everyone did not obey this command, as Elaine Pagels tells us:

But someone—perhaps monks at the monastery of St. Pachomius—gathered dozens of the books Athanasius wanted to burn, removed them from the monastery library, sealed them in a heavy, six-foot jar, and intending to hide them, buried them on a nearby hillside near Nag Hammadi. There an Egyptian villager named Muhammad Ali stumbled on them sixteen hundred years later [in 1945].⁴²⁵

The belief that Jesus alone is Divine is expressed in the Christian doctrine of Homoousion ‘one substance’, also spelled *homoousian*, especially in adjectival form, from Greek *ómoousios* ‘same essence’ or ‘one substance’, from *ómos* ‘same’ and *ousiā* ‘being, essence’, feminine present participle of *einai* ‘to be’. In Christian theology, *Homoousian* denotes ‘the divine nature or essence of which the three Persons of the Trinity (Father, Son, and Holy Spirit) are one’, the Trinity being the inner nature of the Godhead.⁴²⁶ The notion of the Trinity is not uncommon in religion. For instance, in Hinduism, the Formless Brahman has three forms (*trimūrti*), *Brahma*, *Shiva*, and *Vishnu*, the deities or divine energies acting within us of creation, destruction, and maintenance, respectively. The Principle of Unity also has a trinitarian aspect, as the diagrams on page 53 illustrate. Just as Nonduality is the union of Nonduality and duality, we could say that the Holy Spirit is the union of the Father and the Son, as a friend has suggested.

The word *Homoousian* was intended to rebuff the Arian heteroousian doctrine, from *éteros* ‘different’, in which Newton secretly believed,⁴²⁷ despite being Lucasian professor of mathematics at Trinity College, and the semi-Arian homoiousian doctrine, from *ómoios* ‘like, similar’. The Arian doctrine arose from a fourth century Alexandrian priest named Arius. Arius took the opposite view to the Gnostics, saying that *no one*, not even Jesus, is identical with God. To Arius, God is transcendent with absolute sovereignty,⁴²⁸ a complete split between humanity and the Divine. In Arian theology, human beings, including Jesus, are creatures, encapsulated in the slogan *ēn pote hote ouk ēn* ‘there was once a time when he was not.’⁴²⁹ At the Nicene Council in 325, Athanasius vehemently opposed this Arian doctrine, as he did the Gnostic one. So after the Nicene Creed said that Jesus Christ was the *only* begotten Son of God, it went on to say that he was “begotten, not made, being of one substance.”

As we saw on page 72, *substance* originally had an esoteric meaning, semantically related to the Greek *parousiā* ‘presence’, from *par* ‘beside’. Plato used *parousiā* to distinguish Forms and particulars by saying that the former have presence, while the latter ‘share in’ or ‘partake of’ the Form, from the Greek *metechein*,⁴³⁰ *metecho* also meaning ‘enjoy with others’. As Plato says, those who only see instances of universals are dreaming, while those who see both the essence of beauty, for instance, and the particular things that share in it are very much awake.⁴³¹

The Jonah Syndrome

However, this great taboo, which lies at the heart of Western civilization, is a minor issue compared with the even greater resistance to Mystical Pragmatics in the world today. We can best see why this is so through Abraham Maslow’s notion of ‘Jonah Syndrome’,⁴³² suggested by his friend Frank E. Manuel, the author of a psychological biography of Isaac Newton⁴³³ and with his wife Fritzie of a monumental history

of Utopian thought.⁴³⁴ This term was changed to ‘Jonah Complex’ in Chapter 2 of Maslow’s posthumous book, *The Farther Reaches of Human Nature*, the chapter on ‘Neurosis as a Failure of Personal Growth’. However, as I prefer Maslow’s original term, that is what I use in this treatise.

Jonah’s hesitation to speak “the word of the Lord” against the wickedness of Nineveh was symbolized by his being eaten by “a great fish” before he eventually went there to fulfil his destiny. Using this allegory, Maslow began his paper with these words:

All of us have an impulse to improve ourselves, an impulse toward actualizing more of our potentialities, toward self-actualization, or full humanness, or human fulfillment, or whatever term you like. Granted this for everybody, then what holds us up? What blocks us? ... In my own notes I had at first labeled this defense the “fear of one’s own greatness” or the “evasion of one’s destiny” or the “running away from one’s own best talents.”⁴³⁵

He then goes on to say:

We fear our highest possibilities (as well as our lowest ones). We are generally afraid to become that which we can glimpse in our most perfect moment, under the most perfect conditions, under conditions of greatest courage. We enjoy and even thrill to the godlike possibilities we see in ourselves in such peak moments. And yet we simultaneously shiver with weakness, awe, and fear before these very same possibilities.⁴³⁶

These limiting fears can arise both within us as individuals and within the society in which they occur.

First, examining why peak experiences are most often transient, Maslow writes:

We are just not strong enough to endure more! It is just too shaking and wearing. So often people in such ecstatic moments say, ‘It’s too much,’ or ‘I can’t stand it,’ or ‘I could die.’ ... Yes, they *could* die. Delirious happiness cannot be borne for long. Our organisms are just too weak for any large doses of greatness. ... Does this not help us to understand our Jonah syndrome? It is partly a justified fear of being torn apart, of losing control, of being shattered and disintegrated, even of being killed by the experience.⁴³⁷

So sometimes when we let loose the unlimited potential energy of Consciousness, the effect can be overwhelming, leading to what Christina and Stanislav Grof call a spiritual emergency,⁴³⁸ when Spirit emerges faster than the organism can handle. We can even fear success, even fear God, in whatever way we view Ultimate Reality, ranging from Buddhist Emptiness (*Shunyata*) to the Supreme Being of the Christians. As Ernest Becker writes in *The Denial of Death*, “It all boils down to a simple lack of strength to bear the superlative, to open oneself to the totality of experience.”⁴³⁹

It was not only the writers of the Old Testament who were aware of the Jonah syndrome. Arjuna had a similar experience, recorded in the *Bhagavad Gita*. When Krishna showed him the Ultimate Cosmic Vision—“all the manifold forms of the universe united as one”—Arjuna said, “I rejoice in seeing you as you have never been seen before, yet I am filled with fear by this vision of you as the abode of the universe.”⁴⁴⁰

Elaine Pagels makes a similar point in *Beyond Belief*, the quotation in this passage coming from the sayings of Jesus in the *Gospel of Thomas*:

Discovering the divine light within is more than a matter of being told that it is there, for such a vision shatters one’s identity: “When you see your likeness [in a mirror] you are pleased; but when you see your images, which have come into being before you, how much will you have to bear!” Instead of self-gratification, one finds the terror of annihilation. The poet Rainer Maria Rilke gives a similar warning about encountering the divine, for “every angel is terrifying.”⁴⁴¹

In a similar fashion, John Polkinghorne, a former quantum physicist who became a Christian priest in the UK, published a book called *Questions of Truth: God, Science and Belief*. In this book, which is fifty-one responses to questions about the relationship between conventional science and traditional religion, Polkinghorne says, “God hides from us because if we ever clapped eyes on an infinite being, we’d be unable to carry on as we are. We’d be overwhelmed to the point of hopelessness. We’d sort of shrivel up.”⁴⁴²

From the point of view of society, Maslow points out, “Not only are we ambivalent about our own highest possibilities, we are also in a perpetual ... ambivalence over these same highest possibilities in other people,” which he calls ‘counter-valuing’. As he goes on to say,

Certainly we love and admire good men, saints, honest, virtuous, clean men. But could anybody who has looked into the depths of human nature fail to be aware of our mixed and often hostile feelings toward saintly men? Or toward very beautiful women or men? Or toward great creators? Or toward our intellectual geniuses? ... We surely love and admire all the persons who have incarnated the true, the good, the beautiful, the just, the perfect, the ultimately successful. And yet they also make us uneasy, anxious, confused, perhaps a little jealous or envious, a little inferior, clumsy.⁴⁴³

We saw an example of the Jonah Syndrome at work on page 12, when describing the endeavours of Charles Sanders Peirce to rewrite Aristotle’s philosophy by outlining “a theory so comprehensive that, for a long time to come, the entire work of human reason, in philosophy of every school and kind, in mathematics, in psychology, in physical sciences, in history, in sociology, and in whatever department there may be, shall appear as the filling up of its details.”

In the case of Integral Relational Logic, which completes Peirce’s great project, the Jonah Syndrome is even more evident. For IRL introduces the most fundamental change in Western thought since Plato, Aristotle, and Euclid laid down its foundations some 2,350 years ago, an immense undertaking, which seems quite overwhelming to many, especially in today’s postmodern culture, emphasizing fragmentation rather than Wholeness. As Maslow suggested, even Plato would have needed to overcome any self-doubts when viewing the grandiosity of his philosophy.

But in terms of counter-valuing, there is an even greater challenge to overcome. The diagram on page 46, which shows that all beings in the Universe are related to each other in many different ways, indicates that IRL is all-inclusive. The key point to note here is that information systems architects in business are generalists, specialists in abstract modelling systems, rather like family doctors in Sweden, whose job title is ‘specialist in general medicine’. So when IS architects use these modelling methods to integrate all knowledge in all cultures and disciplines at all times, the result is the Unified Relationships Theory (URT), the summit of the mountain of all knowledge, as the diagram on page 41 illustrates. For, as J. Krishnamurti wrote in *Education and the Significance of Life*, “Can any specialist experience life as a whole? Only when he ceases to be a specialist.”⁴⁴⁴

Now, as the URT heals the split between science and the humanities and between science, philosophy, and religion, we can call this synthesis of all knowledge *panosophy*, modelled on *philosophy*, from Greek *pan* ‘all’ and *sophia* ‘wisdom’. The ancient Greeks used the word *pansophos* to mean ‘very wise’, literally ‘all-wise’. In 1642, this led to the coinage of *panosophy*, occasionally spelled *pantososophy*, to mean ‘universal or cyclopædic knowledge; a scheme or cyclopædic work embracing the whole body of human knowledge’.⁴⁴⁵ So we could call students of panosophy panosophers, even though their True Identity, like everyone else’s, is Wholeness.

However, the all-inclusivity of IRL and the URT is perhaps the greatest taboo in society today, for it makes panosophers seem special, paradoxically contradicting the egalitarianism of this universal system of thought and consciousness, a principle incorporated in *Jantelagen* in Scandinavia, which states that no one is allowed to be better than anyone else.

So those who have not yet reached the Omega Point of evolution generally think that panosophers are putting themselves on a pedestal, not respecting their own specialist worldviews, which are included in the URT. So, conversely, they do not respect the aspirations of panosophers to rebuild the entire education and economic system from the bottom up. At the time of writing, it is thus most unclear whether the fact that the ultimate problem of human learning has been solved will ever be made public.

Two possible scenarios

This is particularly unfortunate, for the original purpose of IRL was to answer the most critical unanswered question in science: “What is causing scientists and technologists to drive the pace of scientific discovery and technological invention at unprecedented exponential rates of acceleration?” This is essential, for without an answer to this question, we run our business affairs blindfold, or at least partially sighted, rather like driving faster and faster along the highway with our eyes closed. Sooner or later there is going to be an almighty pile-up.

We can see that such a total collapse of capitalism is inevitable because of the invention of the stored-program computer in the 1940s. There are just two possibilities, which we can look at in turn. First, what would be the implications if the fourth pillar of unwisdom were actually true, that human beings are machines and nothing but machines? Well, as computers get cheaper and cheaper compared to the cost of human labour, it would be the economic imperative of our time to replace as many jobs performed by human beings by machine, leading to unemployment rates of 20%, 30%, 40%, or whatever. Who knows where the theoretical limit might be? Apart from Spain and Greece, for instance, the fact that unemployment in the developed world has not yet generally reached these figures is circumstantial evidence that this possibility is not the true one.

On the other hand, if human beings are not machines and nothing but machines, contrary to what scientists from physicists through developmental biologists to neurophysiologists seem to believe, then there must be something about human behaviour that is not mechanical. In this case, computer technology would be limited in some way, and technological development would not drive economic growth indefinitely. This scenario would thus have a similar effect to its alternative. The economy would go into permanent recession, requiring a radically new work ethic, one that regarded the awakening of human intelligence to be far more important than technological invention.

So, it is quite irrelevant whether artificial intelligence is possible or not. In either case, the basic assumptions of the global economy are clearly unsustainable: capitalism contains the seeds of its own destruction within it. Following the invention of the programmable computer, it will shortly no longer be true that human beings are both workers and consumers in the economy, as articulated by Adam Smith in 1776 in the opening words of *The Wealth of Nations*, the book that laid down the foundations of capitalism:

The annual labour of every nation is the fund which originally supplies it with all the necessaries and conveniences of life which it annually consumes, and which consists always either in the immediate produce of that labour, or in what is purchased with that produce from other nations.⁴⁴⁶

There are a growing number of visionaries in the world today who can see the probability of such a total collapse of the infrastructure of society and who are therefore seeking a gentler entry into the eschatological Age of Light. But this really cannot happen, for we cannot get there from here. The only way forward is to start afresh at the very beginning. So if human phylogeny is to recapitulate the Cosmogonic Cycle, as described in the final section of this treatise on page 88, our entire species needs to pass through an apocalyptic awakening. So how could we handle this critical life-and-death situation with the maximum of Love, Consciousness, and Intelligence?

Well, one who has given this situation much thought is John L. Petersen, founder of the Arlington Institute in 1989, as a think tank to “serve as a global agent for change by developing new concepts, processes and tools for anticipating the future and translating that knowledge into better present-day decisions”. Petersen is not a flaky New Ager, for he has formerly worked in various governmental and

political positions in the USA, setting up a portal for what he sees as the World's Biggest Problems: Economic Collapse, Peak Oil, Global Water Crisis, Species Extinction, and Rapid Climate Change.⁴⁴⁷

As Petersen says in *A Vision for 2012*, we are currently entering a “historical, epochal change—a rapid global shift unlike any our species has lived through in the past. ... There are no direction-pointing precedents for what is coming, ... there is no one alive today who [has] lived through anything like what we’re anticipating.”⁴⁴⁸

Well, this is not quite true, for the author of this treatise has already lived through what the rest of the human race is yet to experience. From a social perspective, the key issue here is which of two possible scenarios that John outlined in an interview in the June–August 2009 issue of *EnlightenNext* is more likely: “with the internet or without the internet”. If you don’t have the Internet, something really bad has happened, but with the Internet, the shock wouldn’t be so disastrous as it would if it all came down. He went on to say:

So we don’t want a crisis that is so bad that it collapses the whole system. We want this kind of finely engineered middle-ground disruption to scare everybody, grab them by the lapels, and say, “We can’t do this anymore!” It convinces everybody that they have to redesign their lives, but you don’t lose the infrastructure. You can rebuild around something rather than rebuild the entire infrastructure.⁴⁴⁹

As the Internet is implicitly built on Integral Relational Logic, the commonsensical art and science of thought that we all use everyday, no matter what our cultural background might be, the Internet could provide the continuity we need as the financial infrastructure of society collapses around our ears. But whether this scenario is going to happen is most improbable while first-tier consciousness continues to dominate society, laying down the laws that govern our economic affairs and educate our children.

Petersen described what is far more likely to happen in an interview in the *What Is Enlightenment?* magazine in July–September 2007, with the title ‘The End of the World As We Know It?’:

As far back as 1986, I figured out that there was a whole string of potential events that were converging and could result in major disruption within twenty-five years. Around the same time, I discovered the work of Chet Snow and Helen Wambach who together wrote a book, *Mass Dreams of the Future*, based on their work doing remote viewing exercises [clairvoyance under hypnosis]. They asked twenty-five hundred people to envision the United States in the year 2030. About eighty-five percent of them reported the same thing: It’s a place with no government, divided politically into four quadrants, and everyone is living in small communities, some of which are defensive and full of guns and others where people cooperate and work together.⁴⁵⁰

Some intentional communities and ecovillages are already making preparations for this eventuality, endeavouring to be as self-sufficient as possible. But such a strategy is not viable in the long-term even within rural areas. For if the global economy self-destructs without a viable alternative, starving millions are likely to leave the cities, seeking food for themselves and their families. Even though there is immense potential for the awakening of intelligence and consciousness, with today’s very low level of these qualities, it is most uncertain how the world will respond to this evolutionary inevitability. Crises of life and death can bring out the very best and the very worst in people.

Harmonizing evolutionary convergence

Even though it looks virtually impossible for Mystical Pragmatics, as outlined in this treatise, ever to be practical, even within spiritual communities, there is still a possible way forward. We could use the universal ordering principle of IRL to harmonize evolutionary convergence. In this way, we could show that this universal system of thought is not just a theory; we could demonstrate its practicality in action.

Today, three great movements are emerging on Earth: spiritual renaissance, scientific revolution, and the ecological movement. However, because of the predominantly divergent tendency of evolution, these movements are deeply fragmented, both within and between themselves. Furthermore, they are being

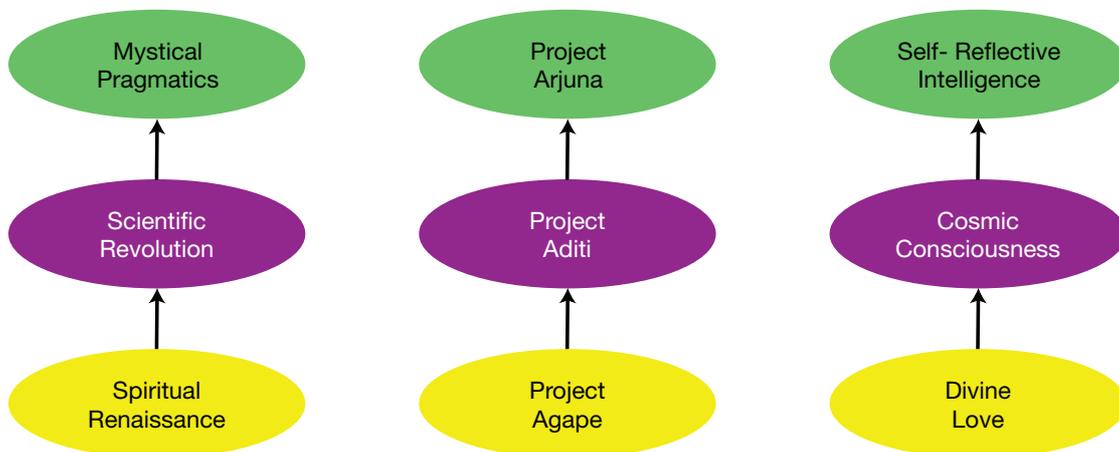
Mystical Pragmatics

held back by the past, in particular by our cultural conditioning, based as it is on the belief that humans are separate from each other, Nature, and the Divine, encapsulated in the seven pillars of unwisdom, outlined on page 40.

Yet, many millions intuitively know in their hearts that there is something seriously amiss with the education and economic systems, in particular. However, they have not yet been able to put their finger on the root cause of the problem, not the least because of the social taboos that keep our innate intelligence entrapped. So we urgently need to cocreate a countercultural movement where it is safe to question the beliefs and assumptions that underlie Western civilization, in particular.

We can best call this movement the Alliance for Liberating Intelligence, not the least because this enables us to rise above the level of our machines. For even today, television companies, like the BBC, are broadcasting documentaries on computer scientists' futile endeavours to create artificial intelligence in robots.⁴⁵¹ And on 15th September 2013, *The Observer* newspaper in the UK published an article with the rubric, 'Meet the new generation of robots. They're almost human.'⁴⁵² So we have a massive mountain to climb if humanity is to come to its senses.

This diagram depicts the overall strategy for the Alliance.



As you can see, this is a bottom-up strategy, being driven by the creative power of Life arising directly from the Divine Origin of the Universe. By invoking Divine Love within today's Spiritual Renaissance, this will open up the mind to Cosmic Consciousness, thereby completing the great Scientific Revolution currently taking place. Then with Self-Reflective Intelligence, Mystical Pragmatics will enable us to cocreate the Sharing Economy, and make radical changes to the education, medical, legal, and political systems.

As the Alliance is intended to be a global social movement, its activities can best be coordinated by a social-networking website, intended to be a network of networking networks, synergizing the activities of the multitude of individuals and organizations who are today experiencing a radical transformation of culture and consciousness within themselves. For it is through this inner healing, awakening, and liberating process, unifying both heart and mind, that we could collectively turn evolutionary divergence into convergence.

To give the Alliance's activities a focused purpose, Projects Agape, Aditi, and Arjuna will be coordinated by Project Heraclitus, so named because Heraclitus's Hidden Harmony is the key to harmonizing evolutionary convergence. Project Agape reflects the Greek word *agapē*, used by Christian writers in the New Testament to mean 'Divine Love'. As the Sufi poet Rumi beautifully put it, "Love is the sea of not-being and there intellect drowns."⁴⁵³ Aditi is the Divine Matrix, a symbol for

Consciousness, as the mother of the Universe in the *Rig Veda*. In turn, Arjuna was the spiritual warrior in the Hindu classic *Bhagavad Gita*, invoking time-honoured, both-and spiritual practices to deal intelligently with conflict-ridden, either-or politics.

Project Aditi is the most important of these subprojects in the immediate future, for its purpose is to complete today's revolution in science, just as Newton's *Mathematical Principles of Natural Philosophy* completed the Copernican/Keplerian/Galilean revolution in 1687. Such an Apotheosis could well generate a gigantic life-shock in society, releasing vast amounts of creative energy currently entrapped by our cultural conditioning.

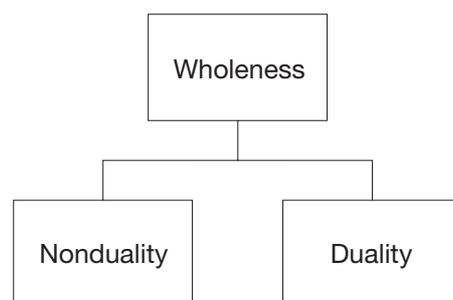
For it would be sensational news if it became widely known that one man working mostly in solitude for most of his life had found satisfactory answers to the Big Questions that have puzzled humanity for millennia and to many of the questions that are puzzling scientists today. For as Anthony Storr says in *Solitude*, "The majority of poets, novelists, composers, and, to a lesser extent, of painters and sculptors, are bound to spend a great deal of time alone," quoting Edward Gibbon as saying, "Conversation enriches the understanding, but solitude is the school of genius; and the uniformity of a work denotes the hand of a single artist."⁴⁵⁴

As John Maddox, an editor of *Nature* for twenty-two years, wrote in *What Remains to Be Discovered*, "the excitement in the years to come will spring from the answers we do not yet know enough to ask."⁴⁵⁵ And as Martin Rees has said, "Interpretations of quantum theory today may be on a 'primitive level', analogous to the Babylonian knowledge of eclipses: useful predictions, but no deep understanding."⁴⁵⁶ Similarly, even though the human genome has been sequenced, Steve Jones, Professor of Genetics at University College London has said, "We don't understand genetics at all."⁴⁵⁷ Of course, scientists don't fully understand what they know because they do not understand themselves.

To help develop this understanding, we plan to set up a team to publish a scholarly trilogy titled *Wholeness: The Union of All Opposites*, with the alternative title *Semantic Principles of Natural Philosophy*. The three volumes of *Wholeness* are titled *Integral Relational Logic*, *The Unified Relationships Theory*, and *Our Evolutionary Story*. As this book is based on the Royal Society's motto *Nullius in verba* 'take nobody's word for it', we shall seek the imprimatur of this most august body of scientists. For as Martin Rees has said, as "Science is advancing faster than ever," "Scientists and technologists have special obligations,"⁴⁵⁸ not the least to explain why they behave as they do, causing unprecedented rates of change in society.

Wholeness is a very long book because Western civilization is so very far removed from Reality. It is necessary to demolish the last 5,000 years of human learning and rebuild them on the Truth, as long understood by mystics, especially those from the East. This treatise, which you have been kindly reading, is a 100-page summary of the *Wholeness* trilogy.

However, anyone can rebuild the world of learning for themselves once they understand that the Principle of Unity is the key that unlocks all the innermost secrets of the Universe. For as explained on page 52, the Principle of Unity can be elegantly expressed in just seven words—*Wholeness is the union of all opposites*—or six mathematical symbols: $W = A \cup \sim A$. In diagrammatic form, the Principle of Unity shows that Wholeness, as Nonduality, has a primary-secondary relationship with the dual world of form.



Mystical Pragmatics

Nothing could be simpler. Furthermore, as the Principle of Unity is the basic design principle of the Universe, when we assimilate this universal truth into consciousness we can harmonize both human ontogeny and phylogeny with the fundamental law of the Universe: all beings are conceived and born to die. This is absolutely essential, for if we deny this basic principle of existence, we are bound to suffer, as Shakyamuni Buddha taught, implying that if we cannot face death in all its forms, we cannot come fully alive. And the time-honoured way to do this is by recapitulating the Cosmogonic Cycle, which we now look at.

Recapitulating the Cosmogonic Cycle

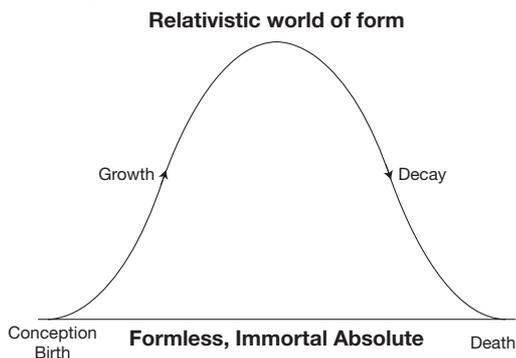
A Google search on 25th May 2013 returned 5,500 hits for the term *Cosmogonic Cycle*, quite a few, but not many considering the billions of pages on the World Wide Web. So this phenomenon is not entirely unknown, albeit often unnamed. Below are two poetic passages describing our journeys in life from Alpha to Omega and back again, the first from T. S. Eliot's poem 'Little Gidding' and the second from the *Taittiriya Upanishad*.

We shall not cease from exploration
And the end of all our exploring
Will be to arrive where we started
And know the place for the first time.

Bhrigu meditated and found that bliss is Brahman.
From bliss are born all creatures,
By bliss they grow,
And to bliss they return when they depart.

It was Joseph Campbell who coined the term *Cosmogonic Cycle* in his popular book *The Hero with a Thousand Faces*, no doubt much read because it succinctly encapsulates the journeys so many spiritual seekers experience.

However, *Cosmogonic Cycle* requires a little explanation, for *cosmogony* 'derives from Greek *kosmogonia* 'creation of the world', from *kosmos* 'order, world' and *gonia* 'begetting'. But this only gives us one side of the story, *cosmogony* meaning 'study of the origin and evolution of the universe'. To obtain a complete picture of the Universe we need to cycle back to the Origin, from Greek *kuklos* 'circle', an example of the Principle of Unity.



As Campbell says, "Redemption consists in the return to superconsciousness and therewith the dissolution of the world. This is the great theme and formula of the cosmogonic cycle, the mythical image of the world's coming to manifestation and subsequent return into the nonmanifest condition."⁴⁵⁹ For as the schematic life-and-death curve in this diagram graphically illustrates, all beings in the Universe are born to die, or, in the case of mammals, birds, and reptiles, at least, are conceived to die.

In other words, if we are to live in harmony with the fundamental law of the Universe, we also need to experience involution, as mystics through the ages have taught, returning Home to Formlessness through a psychological death before physical death, encapsulated in the term *jīvanmukti*, from Sanskrit *jīva* 'to live' and *moksha* 'liberation from worldly bonds'. For instance, the incantation *neti neti* 'not this, not this' in *jñāna-yoga* 'path of wisdom and abstract knowledge' in Advaita can help us to answer the most fundamental question we can ask ourselves: "Who am I?" As Anne Baring delightfully puts it in *The Dream of the Cosmos: A Quest for the Soul*, the answer to this question would be "I am the Soul of the Cosmos discovering itself through its own creation."⁴⁶⁰

Living Intelligently with Information Technology

So if we are to obey the fundamental law of the Universe, our lives—as both individuals and as a species, from conception and birth to death—must recapitulate the Cosmogonic Cycle, which all forms follow, no matter what their lifespans might be, from a few yoctoseconds to zillions of years. Otherwise, we are bound to suffer.

Conscious evolution thus implies conscious involution, graphically described in the myths and fairy tales of all cultures and times, which Campbell brilliantly synthesizes in Part I of his wonderful book. He calls the hero's adventure the 'monomyth', a term borrowed from James Joyce's *Finnegans Wake*, consisting of three major stages: separation or departure, initiation, and return. In the monomyth, "A hero ventures forth from the world of common day into a region of supernatural wonder: fabulous forces are there encountered and a decisive victory is won: the hero comes back from this mysterious adventure with the power to bestow boons on his fellow man."⁴⁶¹

Essentially, the hero leaves the society in which he is born in search of the Divine, which he finds at the end of stage two of Campbell's three-stage model, for societies are not generally grounded in Reality. For many spiritual seekers, this is the end of the journey, but not for Campbell, who is one of the most advanced both-and thinkers I have ever read, clearly expressed in his androgynous view of the fully awake human being. The third stage is one in which the mundane and the Divine are fully integrated while living in society, a central theme of Anne Baring's magnificent *The Dream of the Cosmos*.

The table below lists the three major stages of the hero's journey and their divisions into seventeen steps, possible because Campbell was well aware of the immense power of abstract thought, able to see the underlying patterns and generalities in the myths and stories in all cultures of the world.

Departure	Initiation	Return
The Call to Adventure	The Road of Trials	Refusal of the Return
Refusal of the Call	The Meeting with the Goddess	The Magic Flight
Supernatural Aid	Woman as Temptress	Rescue from Without
The Crossing of the First Threshold	Atonement with the Father	The Crossing of the Return Threshold
Belly of The Whale	Apotheosis	Master of Two Worlds
	The Ultimate Boon	Freedom to Live

As we see, at the end of the second stage of the spiritual journey, the hero finds the Ultimate Boon, which, for some is the end of the quest. However, while returning to the Source is the end of the individual's journey, it is not really the end of humanity's spiritual quest as a species. As Campbell points out, there is third stage in the monomyth: the return to society. As he says, "The return and reintegration with society ... is indispensable to the continuous circulation of spiritual energy into the world." However, "the hero himself may find [this] the most difficult requirement of all."⁴⁶² Campbell gives three reasons for the hero's predicament:

1. The bliss of this experience may annihilate all recollection of, interest in, or hope for, the sorrows of the world; or else the problem of making known the way of illumination to people wrapped in economic problems may seem too great to solve.
2. The powers that he has unbalanced [on his journey to Freedom] may react so sharply that he will be blasted from within and without—crucified.
3. The hero may meet with such a blank misunderstanding and disregard from those he has come to help that his career will collapse.⁴⁶³

On this third point, "Even the Buddha ... doubted whether the message of realization could be communicated." And on the first point, "Saints are reported to have passed away in the supernal ecstasy."⁴⁶⁴ For these three reasons, Campbell says that the responsibility of returning to the world with

the adventurer's life-transmuting trophy when the hero-quest has been accomplished has been frequently refused.

Becoming free of our ancestry

However, not always. People on the spiritual quest often follow the epithet "Be in the world, but not of it," depicted in this graphic from the *What is Enlightenment?* magazine. As the suit and tie symbolize, we are



all obliged to follow the economic laws of the prevailing culture, even if these are causing severe psychological and ecological damage. So in some aspects, at least, ontogeny recapitulates cultural phylogeny, even though such a way of life is unsustainable and is no longer viable.

For as J. Krishnamurti wisely said, "It is no measure of health to be well-adjusted to a profoundly sick society."⁴⁶⁵ Thus, while those seeking to heal themselves must be outsiders of Western civilization, they are insiders of whatever civilization might arise from the death of the global economy.

So if human phylogeny is to recapitulate the Cosmogonic Cycle, it is necessary for cultural phylogeny to recapitulate the ontogeny of those pioneers taking evolution in a quite new direction, as happens when new species break away and emerge from their immediate specific ancestors. We see a similar situation in the death and birth of new civilizations, as Arnold Toynbee explained on page 63.

That is what is happening in the world today, for some visionaries see a new civilization or even a new species emerging, as we saw on page 61. This is not a biological species, for evolution during the past five to twenty-five thousand years has been more mental in the noosphere than biological. As mentioned there, we can best call the emerging species *Homo divinus* to indicate that humanity is consciously coming back into union with the Divine, following the split encapsulated in the word *human* 'earthling', in contrast to the Divine, as we saw on page 4. We need to emphasize *consciously* for in Reality no one is separate from our Immortal Ground of Being for an instant. But sadly, many do not know this, ignorance encapsulated in the Sanskrit word *avidyā*.

But what should we call the noetic species from which *Homo divinus* is evolving? Well, we can most appropriately call this *Homo scientia* from PIE base **skei-* 'to cut, split', the root of *science* and *schizoid*. For the predominant mode of scientific inquiry is analysis, separating beings from each other in the relativistic world of form.

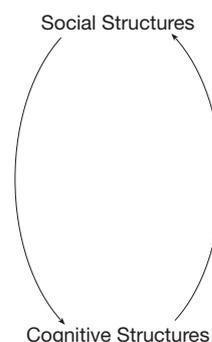
We can also see this split in the word *physics*, which derives from Aristotle's treatise *Physics*, a translation of Greek *ta phusika*, literally 'natural things', the neuter plural of *phusikos* 'of nature', from *phusis* 'birth, origin; nature, inborn quality' and *phuein* 'produce, bring forth; grow, be born', from PIE-base **bheu-* 'to be, exist, grow', also root of *be*. In turn *nature* derives from Latin *nātūra* 'birth', from *nātus*, past participle of *nāscī* 'to be born', from PIE base **gen-* 'to give birth, beget', also root of Greek *genesis* 'origin, birth', from which *genetics* and many similar words are derived. But physicists and geneticists today do not begin their studies at the Divine Origin of the Universe, for they deny its very existence. So what is called supernatural is entirely natural and the natural sciences study the *effects* of Nature, not Nature itself.

It is important to note here that scientists are not the only people detached from Reality. Theologians in the Abrahamic religions who believe that God is other, also suffer from split minds. So we can identify two subspecies of *Homo scientia*: *Homo scientia theistica* and *Homo scientia atheistica*, denoting those who

believe and do not believe in the existence of God, respectively. A third subspecies *Homo scientia agnostica* would then denote those who do not know what to believe. Having identified the existence of *Homo scientia*, we can obtain a much better perspective on the long-running war between science and religion. It is actually taking place between members of *Homo scientia*.

For members of *Homo divinus* do not need to engage in such Holy wars—wars about the Whole—for they know the Divine with Absolute certainty, inner knowing that we can best call Gnosis. In contrast, the knowledge that scientists and technologists mostly work with is superficial symbolic knowledge, rarely based on Gnosis.

But how can *Homo divinus* evolve from *Homo scientia*? Well, the adjacent diagram illustrates the central issue here. As children, we learn what our parents and teachers want us to learn, in church and at school and university, carrying this learning into the workplace. Each generation thus passes on to the next generation what they have learned from the previous generation, a cyclic process that has been going on for some 25,000 years. Questioning these deeply held cultural beliefs often leads to ostracization, historically even to imprisonment and death.



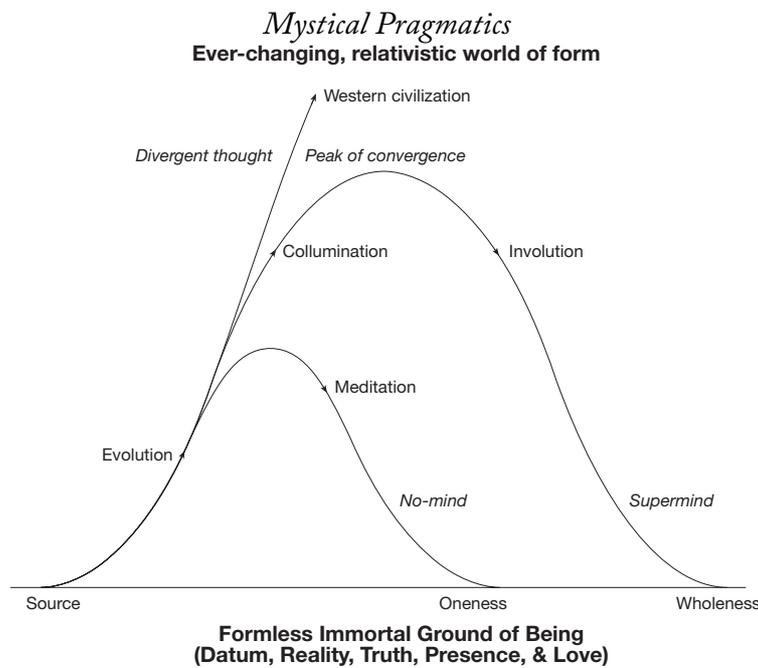
Then during the 5,000 years of the patriarchal epoch, which began at the dawn of written history and the first city-based civilizations, our cultural worldviews have become increasingly set in concrete. Our individual ontogenies recapitulate this mental phylogeny, our behaviour patterns being well established by the age of five or even earlier. So the institutions that govern our lives are the products of these rigid cognitive structures, which, in turn, inform us what and how we learn. For our minds create our reality and govern our behaviour. This means that the phylogeny of the species, or of any culture, is actually the synthesis of all individual ontogenies.

To break free of this pernicious cycle, in *The Ghost in the Machine* Arthur Koestler gave an explanation of how new species can emerge with the words *gerontomorphosis* ‘the shaping or forming of the old’ and *paedomorphosis* ‘the shaping or forming of the young’. During gerontomorphosis, evolution progresses from immediately preceding forms and structures, as in phylogeny. However, as Koestler puts it, “gerontomorphosis cannot lead to radical changes and new departures; it can only carry an already specialized evolutionary line one more step further in the same direction—as a rule into a dead end of the maze.”⁴⁶⁶

During paedomorphosis, on the other hand, evolution retraces its steps to an earlier point and makes a fresh start in a quite new direction. Paedomorphosis is thus a rejuvenating, renascent process; it leads to new vitality, new energies, and new possibilities.

These principles of paedomorphosis and gerontomorphosis apply equally in the noosphere, the prime example being the Copernican revolution in the seventeenth century. For Copernicus effectively went back to Aristarchus’s heliocentric view of the solar system, Aristarchus being called the Greek Copernicus,⁴⁶⁷ abandoning Aristotle and Ptolemy’s geocentric view, which was generally accepted at the time. And generally, this process does not begin on the scale of the species; it begins at the individual level, breaking the social-cognitive cycle that drives so much human learning today.

This is absolutely essential at the present time, for Western civilization is blindly accelerating away from Reality with every day that passes, as the path so marked in the diagram below indicates. However, as this diagram of different ontogenies also shows, there are two ways of recapitulating the Cosmogonic Cycle, returning to our Nonmanifest Divine Source.



The first ontogenetic path is depicted in the small bell curve, the traditional path of the mystics, taking a short cut to God, towards Oneness and union with the Divine, with No-mind. However, killing the mind does not enable us to rebuild our education and economic systems while at the same time recapitulating the Cosmogonic Cycle.

To do this, we need to heal the fragmented, specialist mind in Wholeness, depicted in the large bell curve. *Collumination* derives from Latin *cum* ‘together with’ and *lumen* ‘light’, on the model of *illumination*, denoting the skill of combining thinking or cogitation with a meditation practice such as mindfulness or vipassana or insight meditation. The distinction here is that when practising vipassana the focus of attention is on an object, such as the breath, aimed at stilling the mind, while when colluminating, practitioners watch the creation of their own thoughts arising from their Divine Source, aimed at healing the fragmented mind in Wholeness, leading to the translucent, undifferentiated Supermind. Collumination is also the coherent light of Consciousness needed to create and see a holographic map of the Universe, as described in Section ‘The universal system of thought’ on page 41.

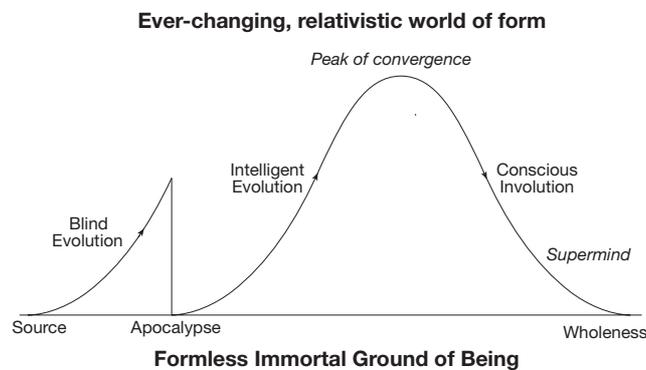
We can thus distinguish two subspecies to denote the two ways of returning Home to the Non-manifest, to Oneness and Wholeness, respectively: *Homo divinus unitas* and *Homo divinus holoensis*, from Greek *ὅλῆ* ‘whole’ and *-ensis* ‘belonging to’. So members of *Homo divinus holoensis* do not belong to any group, whether this be national, religious, cultural, racial, sexual, specialist, or whatever, for they belong to the Ineffable, Nondual Whole.

To evolve into Wholeness in this manner, we need to follow a holotropic path. Stanislav Grof coined *holotropic* to mean ‘turning towards the whole’, modelled on *heliotropic* ‘turning towards the sun’, from Greek *tropos* ‘turn’, from *trepo* ‘to turn’.⁴⁶⁸ However, *trepo* has two meanings, as in English: ‘to change direction’ (as in ‘turn into a side-road’), and ‘to change form’ (as in ‘turn into a frog’).⁴⁶⁹ So *holotropic* can be said to have two meanings, the second being ‘transforming the Whole’, using *-tropic* in the same sense as *entropic* ‘in transformation’, coined by Rudolf Clausius in 1865 as *entropy*. In order to return Home to Wholeness, to our Divine Source, we need both to transform the Whole—a partial transformation is not sufficient—and to turn towards Wholeness, the union of all opposites, our Authentic Self.

An ontogenetic perspective

From an ontogenetic perspective, one great challenge that we all face is how to rise above the level of our machines, becoming their masters rather than their slaves, as we mostly are today. For the idea that computers are the leading edge of evolution rather than human beings is utter nonsense, as many intuitively know today. It is not true that we humans are machines and nothing but machines. But how can we become totally free of our mechanistic conditioning in the manner that J. Krishnamurti and Vimala Thakar suggested in *Education and the Significance of Life* and *Spirituality and Social Action*, respectively?

Well, in my case, my ontogeny has not actually followed the large bell curve in the simplistic diagram of three ontogenetic paths on page 92. Rather, the diagram below provides a better representation of what has happened to me in my lifetime, remembering that in Reality all this movement has actually been taking place in the Eternal Now, in the vertical dimension of time as my energies have moved up and down, away from and towards our Divine Source, the Origin of the Universe.



The section marked 'Blind Evolution' represents the first thirty-eight years of my life, as I had very little awareness of what I was learning or why. All I knew was that what I was being taught in religion, science, and economics between the ages of eight and eighteen, when I was majoring in mathematics at university, did not make any sense. So my ontogeny began to break free of cultural phylogeny at a comparatively early age, unlike most of my contemporaries, whose ontogenies recapitulated the phylogeny of the culture we were born into.

However, it wasn't until 1980, when I was engaged in developing a national marketing programme for decisions support systems for IBM in London, that my ontogeny began to break clean away from Western civilization in order to recapitulate the Cosmogonic Cycle, as I can now see. As the diagram indicates, I passed through an apocalyptic death and rebirth process. This life-changing event was apocalyptic because *apocalypse* derives from Greek *apokalupsis*, from *apokaluptein* 'to uncover' or 'to reveal', from the prefix *apo* 'from, away' and *kaluptra* 'veil'. So *apocalypse* literally means 'draw the veil away from', indicating the disclosure of something hidden from the mass of humanity: the Principle of Unity, providing me with the means to unify the nonphysical and physical causes of change in the Universe in Wholeness.

As I describe on page 43, it was as if a big bang erupted in the depths of my psyche, giving birth to a radically new universe, new, at least, to the West. For IRL did not come into existence through random mutations of the DNA molecule, which is the explanation for evolutionary processes given in James Watson's *DNA: The Secret of Life*. Rather, as mentioned there, it arose through the action of Kundalini, one of many names for the creative power of Life arising directly from the Divine Origin of the Universe.

Mystical Pragmatics

Then, having been shown the Principle of Unity, the fundamental design principle of the Universe, at midsummer 1980, my learning began to accelerate at a superhyperexponential rate of development as I learned to colluminate, to see the Universe holographically. Then, in April 1982, when I was helping to design a new management accounting system for the Kuwait Institute for Scientific Research, I became aware that all the divergent streams of evolution since the most recent big bang had converged within me at evolution's Omega Point, much as Teilhard prophesied in *The Phenomenon of Man*, written a couple of years before I was born. In just two years, fourteen billion years of evolution from Alpha to Omega had recapitulated themselves within this being that I am in a gigantic, apocalyptic, creative process.

This might seem strange, for normally, our creative energies produce structures in the relativistic world of form, such as a painting, symphony, novel, opera house, washing machine, scientific theory, software product, proof of a mathematical theorem, this document, or whatever. However, there is one creative process that terminates in Formless, Nondual Wholeness at evolution's Omega Point, its glorious culmination: the entire process of evolution from Alpha to Omega.

As this was an unprecedented event in human history, it has taken most of my energies since then to understand what has happened to me in my lifetime, returning to the Alpha Point by the complementary process of involution, as described on page 52. In a sense, this realization is not new. As I have discovered, Nondual Wholeness is just the other side of the coin from Nondual Oneness, which mystics through the ages have discovered through various meditative and contemplative practices. Furthermore, I have realized that no one can return Home to Wholeness, for none of us have ever left Home. Wholeness, the union of Wholeness and Oneness in a primary-secondary relationship, is the True Nature, Authentic Self, and Genuine Identity of everyone on Earth.

The overall effect of this very unusual ontogeny is that my own individual consciousness has expanded and deepened to such an extent that it is now coterminous with Consciousness itself. By recapitulating the Cosmogonic Cycle, I have come to understand myself, who I am, and of my relationship to the Divine Cosmos. There is thus nothing outside me. All the relationships that I might have with my fellow human beings and any other beings in the Universe are actually contained within me.

A phylogenetic perspective

However, this does not mean that human phylogeny will consciously recapitulate the Cosmogonic Cycle before *Homo sapiens sapiens* becomes extinct within a few generations. Indeed, in spite of and because of the great awakening of Love, Consciousness, and Intelligence taking place today, it looks most unlikely that 'wise-wise human' will awaken sufficiently to fully understand what is happening to our species. Nevertheless, let us look at the prospects to see if a miracle could happen.

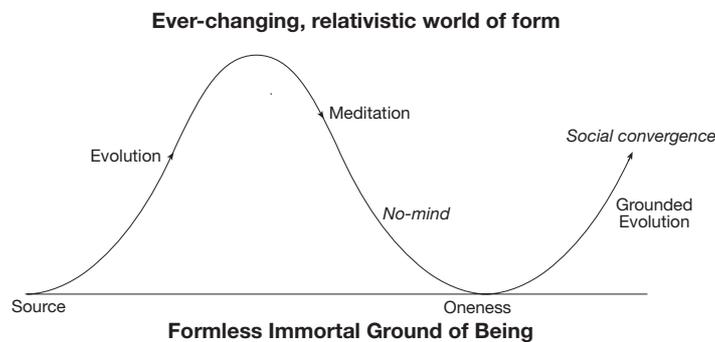
We can best begin by pointing out that Ken Wilber's three-epoch model of human phylogeny, illustrated on page 57, is the recapitulation of the Cosmogonic Cycle, from Alpha to Omega and back again. Here, the subconscious, matrifocal stage is the Great Mother Goddess epoch, corresponding to the transition from the biosphere to the noosphere in Teilhard's model. The self-conscious, patriarchal stage is the 5,000-year process of noogenesis, leading to the eschatological superconscious, androgynous epoch at the end of time.

Now, the first and third epochs in this model have some similarities because what is happening today is that we are rediscovering the ancient wisdom of our forebears, before the egoic mind began to dominate human affairs, with both great benefits and catastrophic effects. However, as Ken points out, to

confuse the two is to fall for the pre-trans fallacy.⁴⁷⁰ We are actually moving forward into a superintelligent Age of Light, not moving back to some Golden Age that the myths have described.

But for this to happen, all the civilizations that have dominated human affairs during the patriarchal epoch have to come to an end, illustrated on page 62. With evolution now passing through the most momentous turning point in its fourteen billion-year history, it is time now for Western and Islamic civilizations to die, along with the peculiar atheistic communist/capitalist Chinese culture. For we cannot get to where we are going as a species by starting where we are today. If our children and grandchildren are to have any chance of understanding themselves, recapitulating the Cosmogonic Cycle and incarnating human phylogeny as a whole in their ontogenies, we need to help them to start afresh at the very beginning, at the Alpha Point of evolution.

But, are today's evolutionary leaders helping the next generations to recapitulate the Cosmogonic Cycle in its entirety? Not really, despite the popularity of Joseph Campbell's *The Hero with a Thousand Faces*, as this diagram illustrates.



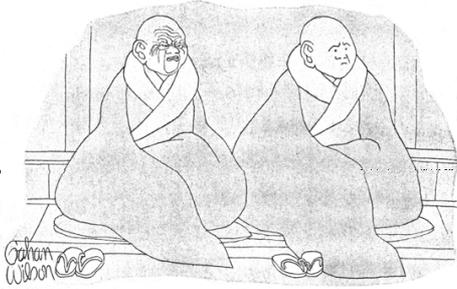
This diagram has arisen from Andrew Cohen's *Evolutionary Enlightenment*, addressing a vital need in society today. Normally, when people recapitulate the Cosmogonic Cycle by taking the short cut to God, as depicted in the small bell curve on page 92, they say that they are fully liberated and awakened, living in *Heaven*, originally perceived as where the gods live, called *Nirvāna* 'extinction' or *Moksha* 'liberation' in the East. However, while such a spiritual journey heals us of schizophrenia, detached from Reality, it does not enable us to heal our fragmented minds, thereby healing us of the delusionary beliefs taught to us in religion, science, medicine, mathematics, law, politics, and business today.

To do this, as we see on page 31, Andrew is seeking to take our mystical wisdom into the everyday world of affairs, as the line marked 'Grounded Evolution' indicates. However, as we see on page 30, he believes that evolutionary enlightenment can continue indefinitely, contradicting the most fundamental law of the Universe. No doubt he takes such an approach because that is what his followers want to hear, denying that evolution terminates in the glorious culmination known as the Omega Point. So even among the leaders of conscious evolution, there is still much work to do.

Stillness is the way

To conclude, we need to remember that neither the map of the Universe outlined in this treatise nor the territory being mapped is real. Only Ineffable Absolute Wholeness is Reality, from which none of us is ever separate. So as Ramana Maharshi—often regarded as the pre-eminent mystic in the twentieth century—wrote to his mother, as 1898 turned into 1899, when she tried to persuade him to return home from Arunachala, "What is not meant to happen will not happen, however much you wish it. What is meant to happen will happen, no matter what you do to prevent it. This is certain. Therefore the best path is to remain silent."⁴⁷¹

Mystical Pragmatics



Young monk: *What happens next?*
Elderly monk: *Nothing. This is it!*

Once we have realized this, we have fulfilled evolution's purpose in our particular physical universe, one of many in the multiverse that astrophysicists like Martin Rees are speculating about today.⁴⁷² There is then nothing more to do or become in life. All that really matters is to be, living in the Eternal Now, as this elderly monk understood. And it is in the blissful space of Wholeness, Love, Stillness, and Peace, in the Presence of the Divine, that we can die as individuals and as a species, knowing that Consciousness, the

True Identity, Cosmic Soul, and Divine Essence we all share, never dies.

Nevertheless, something magical could still emerge from Stillness, if we remember, with Jaques in Shakespeare's *As You Like It*, "All the world's a stage, And all the men and women merely players; They have their exits and their entrances; And one man in his time plays many parts, His acts being seven ages," the first six being infant, school-boy, lover, soldier, justice, and old age. Finally, "Is second childishness and mere oblivion, Sans teeth, sans eyes, sans taste, sans every thing."⁴⁷³

For when we are free of the fear of death, we could really have a celebration. As Orsino, Duke of Illyria, said in the opening lines of *Twelfth Night*, "If music be the food of love, play on, Give me excess of it, that, surfeiting, The appetite may sicken and so die."⁴⁷⁴

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