

# The Divine Origin of Creativity

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**Abstract.** This essay has been inspired by an online summer series of two-hour sessions that the Pari Center in Italy held in 2021 and 2022 on the theme ‘Beyond Bohm’. The sessions last year were titled ‘Science, Order and Creativity’, in two parts ‘Physics and Metaphysics’ and ‘Contemplation and Creativity’, which I did not know about at the time. The theme of Part 1 of this year’s sessions was ‘Imagination, Creativity, Dialogue’. For myself, I first met David Bohm in November 1980 at Birkbeck College in London after I had sent him a 70-page paper titled ‘The Future of Computers and Society’, as an expression of my own creativity, imagination, and questioning of assumptions.

We continued to meet a few times during the 1980s, as I began to use my skills as an information systems architect in business and Bohm’s theory of the Implicate Order to develop a comprehensive model of the psychodynamics of society in the context of the whole of evolution since the most recent big bang some 13.8 billion years ago. Our last meeting was in Prague in 1992 at a conference organized by the International Transpersonal Association titled ‘Science, Spirituality, and the Global Crisis’, when I realized that my investigations of thought as a system were taking me beyond Bohm.

Most significantly, my profound self-inquiries have shown that the root cause of the great existential crisis facing humanity today is the cognitive and experiential split between humanity and Divinity opened up at least 5,500 years ago. In contrast, the Rishis in the Indus valley discovered that Brahman and Atman (as God and Self) are one, never separate from each other, encapsulated in this symbol for Wholeness or Ultimate Reality, called OM or AUM, for which there is no corresponding notion in the West.



Indeed, during the Middle Ages, the Abrahamic religions regarded those who claimed to live in union with the Divine as heretics—a capital offence. It is therefore not surprising that when modern science became established following the first scientific revolution in the 1500s and 1600s, scientists were careful to deny any involvement of the Divine in creativity. Even though the schism between humanity and Divinity is deeply entrenched in the human psyche, many humans are today discovering the creative power of Life within themselves, contrary to what they have been taught. So, it is still possible for this split to be healed before our inevitable demise as a species, much sooner than most are yet willing to face.

In my experience (based on Gnosis), the Formless Absolute is Reality, the Source or Divine Origin of creativity, of everything that exists in the relativistic world of form, whether these beings be physical, like the Sun, Moon, and Earth, nonphysical, like concepts and mathematical objects, such as sets, numbers, and circles, or both, like humans.

The Absolute is the starting point from which we can answer—through intuitive and rational self-inquiry—the most critical unanswered question in science: *What is causing scientists and technologists, aided and abetted by computer technology, to drive the pace of scientific discovery and technological development at unprecedented exponential rates of acceleration?*

In my case, the creative power of Life, emanating directly from the Divine Origin of the Universe, has enabled me to use Self-reflective Intelligence—as the eyesight of the coherent Light of Consciousness—to create an all-inclusive model of the psychodynamics of society in the context of the whole of evolution since the most recent big bang some 13.8 billion years ago. This I call *Panosophy* or the *Unified Relationships Theory*, which integrates all knowledge in all cultures and disciplines at all times into a coherent whole.

The Gnostic Foundation, Cosmic Context, and coordinating framework for this cognitive map of the Totality of Existence has evolved from the transcultural and transdisciplinary modelling methods under-

lying the Internet. This commonsensical Method is called *Integral Relational Logic*, the holographic art and science of reason that we all implicitly use every day to form concepts and organize our ideas, clarifying David Bohm's view of thought as a system.<sup>1</sup>

At the heart of this universal system of thought is the fundamental law of the Universe, which I call the *Principle of Unity*, stating *Wholeness is the union of all opposites*. This irrefutable, universal truth shows that there is a primary-secondary relationship between the Absolute and what is created from what I call the Datum of the Universe, 'that which is given'. We humans thus have inseparable Divine and human identities, with the latter being secondary, even though we generally treat it as primary in our everyday human relationships of immense complexity.

To see the simplicity underlying the complexity of the world we live in, I regard the Principle of Unity as the fundamental axiom for Integral Relational Logic, which is nonlinear and self-similar, like a fractal. I have thus been able to consistently include contradictions in my reasoning, acknowledging that we live in a paradoxical world. This is of central importance, for if we deny this, the cognitive maps that we build of the territory we are journeying through cannot be valid, leading us astray into delusion.

So, to go beyond Bohm, we first need to go beyond the one-sidedness of Aristotle, whose Law of Contradiction states, "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."<sup>2</sup> In contrast, Heraclitus of Ephesus said, "The Hidden Harmony is better than the obvious," and "Opposition brings concord; out of discord comes the fairest harmony."<sup>3</sup> Similarly, Lao Tzu wrote in *Tao Te Ching*: "When all the world recognizes beauty as beauty, this in itself is ugliness" and "When all the world recognizes good as good, this in itself is evil."<sup>4</sup>

However, both Heraclitus and Lao Tzu were well aware that few of their contemporaries understood that opposites are never separate from each other, whether they be complementary or contradictory. For instance, Lao Tzu said, "The Tao is the hidden Reservoir of all things,"<sup>5</sup> and "My words are very easy to understand and very easy to practice: But the world cannot understand them nor practice them."<sup>6</sup> Similarly, Heraclitus said, "People do not understand how that which is at variance with itself agrees with itself," and "We should let ourselves be guided by what is common to all. Yet, although we all share the Universal Law (*Logos*), the majority live as if they had understanding peculiar to themselves."<sup>7</sup>

Today, little has changed, in that conventional mathematicians and logicians exclude paradoxes from their formal proofs of theorems, which do not explain the intuitive origins of their creativity. On the other hand, spiritual seekers and those with a creative artistic temperament tend to be more aware that the one-sidedness of Western reason does not lead us to the Truth that sets us free. We can see why this is so by following Bohm's archaeology of language, for *etymology* derives from Greek *etumologiā*, from *etumon* 'true sense of a word', neuter of *etumos* 'real, true, actual'.

The principal problem of science is evident from its root, which is Latin *scientia* 'knowledge', past participle of *scire* 'to know', from Proto-Indo-European (PIE) base *\*skei-* 'to cut, split', also root of *schizoid*, *scire* 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. 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*.

We thus need to tap into our artistic abilities if we are to resolve the problem of fragmentation, which Bohm described in the opening paragraphs of the first chapter of *Wholeness and the Implicate Order*:

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. 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.<sup>8</sup>

However, it is important to note that healing the fragmented mind takes place within us, in the Cosmic Psyche, the 99% of the Universe inaccessible to our five physical senses of sight, hearing, smell, taste, and touch. For, as 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."<sup>9</sup> Yet, we cannot heal our neuroses within such a divisive society, for Bohm's dialogue partner, J. Krishnamurti, said, "It is no measure of health to be well-adjusted to a profoundly sick society" and "Can any specialist experience life as a whole? Only when he ceases to be a specialist."<sup>10</sup>

The romantic poet Samuel Taylor Coleridge called the imaginative power we need to fully understand what it means to be human *esemplastic* 'having the ability to shape diverse elements or concepts into a unified whole'.<sup>11</sup> So, even though I was educated as a mathematician, trained as a computer scientist, and worked as an information systems architect in business, I regard myself as a creative artist, applying Self-reflective Intelligence to paint pictures in the Cosmic Psyche that others might only faintly and partially see within themselves. Mixing metaphors, the words and other signs and symbols I use to express my inner being are like a musical score, which needs to be 'played' to be 'heard' and appreciated.

## **Evolving beyond Bohm**

Externally expressing what we see within in pictures and natural and mathematical languages is thus a secondary exercise, as Albert Einstein pointed out in a famous letter in 1945 to Jaques Hadamard, who was then conducting a survey of some of the leading mathematicians of his day into their creativity. Einstein wrote:

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.

There is, of course, a certain connection between those elements and relevant logical concepts. It is also clear that the desire to arrive finally at logically connected concepts is the emotional basis of this rather vague play with the above mentioned elements. But taken from a psychological viewpoint, this combinatory play seems to be the essential feature in productive thought—before there is any connection with logical construction in words or other kinds of signs which can be communicated to others.

The above mentioned elements are, in my case, of visual and some of muscular type. 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.

According to what has been said, the play with the mentioned elements is aimed to be analogous to certain logical connections one is searching for. In a stage when words intervene at all, they are, in my case, purely auditive, but they interfere only in a secondary stage as already mentioned.<sup>153</sup>

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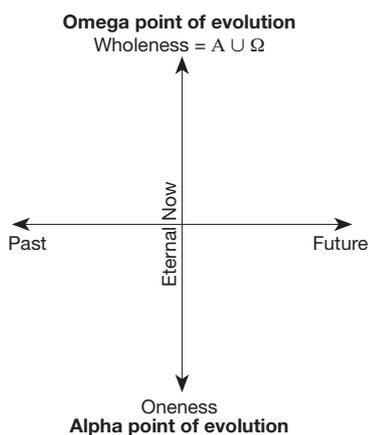
Now, while Einstein had an intuitive understanding of his creative processes, evolution was not then sufficiently advanced to develop a rational explanation of creativity. Bohm offered some advice on how we can go beyond Einstein, making radical revisions to conventional scientific views of the Universe, while retaining that which makes sense in the context of Wholeness. He wrote,

Of course, we have to be cognisant of the teachings of the past, both Western and Eastern, but to imitate these teachings or to try to conform to them has little value. For, ... to develop new insight into fragmentation and wholeness requires a creative work even more difficult than that needed to make fundamental new discoveries in science, or great and original works of art. ... [O]ne who is similar to Einstein in creativity is not the one who imitates Einstein's ideas, nor even the one who applies these ideas in new ways, rather, it is the one who learns from Einstein and then goes on to do something original, which is able to assimilate what is valid in Einstein's work and yet goes beyond this work in qualitatively new ways.<sup>12</sup>

To understand how the creative power of Life could take us beyond Einstein and Bohm, we thus need to look at human learning from an evolutionary perspective. Generally, evolution builds on what has already been created in an accumulative fashion. But sometimes, it takes a radical change in direction, as Arthur Koestler explains in *The Ghost in the Machine*. In this book, he gave an explanation of how new species 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. Ontogeny recapitulates 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."<sup>13</sup>

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. If individuals breaking free of the parent species become established, then phylogeny recapitulates ontogeny, as a new species.

These principles of paedomorphosis and gerontomorphosis apply equally in the noosphere, the prime example being the Copernican revolution in the sixteenth century. For Nicolaus Copernicus effectively went back to Aristarchus's heliocentric view of the solar system, Aristarchus being called the Greek Copernicus,<sup>14</sup> abandoning Aristotle and Ptolemy's geocentric view, which was generally accepted at the time.



In the case of the Unified Relationships Theory, its starting point goes back as far as possible, to the Divine Origin of the Universe and hence of creativity. But this backtracking has not happened in the horizontal dimension of time. Rather, it has taken place in the Eternal Now, in the vertical dimension of time, as this diagram illustrates. Nevertheless, it is still possible to look at Panosophy—as the synthesis of all sciences and humanities—in terms of the history of ideas during just the past millennium. There are two ways of doing so.



First, this megasynthesis of everything completes a series of cosmologies that have evolved during the past four hundred years that have healed splits between pairs of opposites, previously opened up by the analytical mind. Each pioneer went beyond his predecessors, eventually terminating in the Ultimate Cosmology that goes beyond Bohm by unifying *all* opposites.

Johannes Kepler set the ball rolling with the publication in 1609 of *New Astronomy*, which laid down the foundations of modern astronomy with the first two laws of planetary motion.<sup>15</sup> Kepler found these laws by unifying the split between causal physics and mathematical astronomy, which Aristotle had opened up in

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*Physics*.<sup>16</sup> Isaac Newton produced the second term in this series in 1687 by unifying Kepler's celestial physics with Galileo Galilei's terrestrial dynamics in *Mathematical Principles of Natural Philosophy*.<sup>17</sup>

Einstein introduced the next two terms with the special and general theories of relativity. First, in 1905, he developed the special theory of relativity by reconciling the incompatibilities between the principle of relativity, which states that physical phenomena run their course relative to different coordinate systems according to the same general laws, and the observed constancy of the speed of light.<sup>18</sup> Einstein did this by replacing Newton's absolute framework of space with a relativistic space-time continuum, in which the notion of simultaneity is relative to the observing system of coordinates.

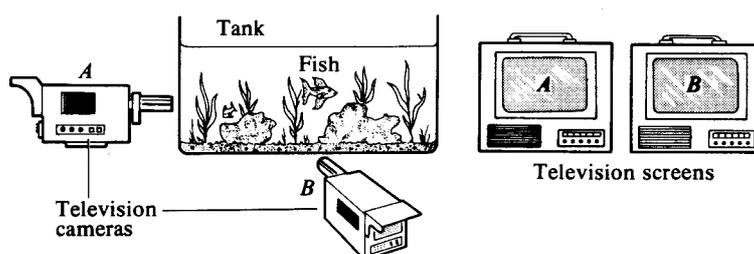
In the general theory of relativity, published in 1916, Einstein went on to show the equivalence of gravitational and inertial mass during acceleration,<sup>19</sup> and in so doing abandoned the Euclidean–Cartesian rectilinear model of space, replacing it with the view that space-time is curved. Einstein was well aware that he was taking human learning in a quite new direction, for he began his introductory book *Relativity* with these words:

In your schooldays most of you who read this book made acquaintance with the noble building of Euclid's geometry, and you remember—perhaps with more respect than love—the magnificent structure, on the lofty staircase of which you were chased about for uncounted hours by conscientious teachers. By reason of your past experience, you would certainly regard everyone with disdain who should pronounce even the most out-of-the-way proposition of this science to be untrue. But perhaps this feeling of proud certainty would leave you immediately if someone were to ask you: “What, then, do you mean by the assertion that these propositions are true?” Let us proceed to give this question a little consideration.<sup>20</sup>

In 1980, Bohm continued this unifying process by showing how we can reconcile the incompatibilities between quantum physics and relativity theory in *Wholeness and the Implicate Order*. For the theories of relativity and quantum mechanics, which Bohm said should really be called ‘quantum *non*-mechanics’,<sup>21</sup> display opposite characteristics, the former having the properties of continuity, causality, and locality, with the latter being characterized by noncontinuity, noncausality, and nonlocality.<sup>22</sup>

Inspired by the process philosophy of Heraclitus and Alfred North Whitehead, Bohm unified quantum and relativity theories by recognizing the existence of a continuous power underlying the surface of the material universe, accessible to our five physical senses, which he likened to a flowing stream, 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.”<sup>23</sup>

As well as using a river as a metaphor for what underlies the material universe, Bohm used the metaphor of a fish swimming in a tank with two television cameras filming it to show how relativity and quantum theories could be unified. The television screens would then display opposite characteristics of this single, underlying reality, illustrated here:



But what is the fish to make of all this? Well, the Sufi poet Kabir wrote in the fifteenth century, “I laugh when I hear that the fish in the water is thirsty,” using water as a metaphor for Consciousness, which embraces all our lives, not space and time, as is widely believed. Kabir highlights our ignorance by saying,

“You do not see that the Real is in your home, and you wander from forest to forest listlessly.”<sup>24</sup> In a similar manner, the Sufi poet Rumi wrote, “Love is the sea of not-being and there intellect drowns.”<sup>25</sup>

The Unified Relationships Theory completes this short series of cosmologies by extending Bohm’s one-dimensional holomovement, which could be better denoted as *Holoflux*, as Lee Nichol points out,<sup>26</sup> into the Ocean of Consciousness, visualized as a multidimensional hyperball of water with no limits, most beautifully encapsulated in the Sanskrit word *Satchitānanda* ‘Bliss of Absolute Truth and Consciousness’.



The other principal way of looking at Panosophy in the history ideas is made clear from its etymology. I originally modelled *panosophy* on *philosophy*, from Greek *pan* ‘all’ and *sophia* ‘wisdom’. However, I then discovered that the ancient Greeks used the word *pansophos* to mean ‘very wise’, literally ‘all-wise’. Then, in the mid 1630s, Jan Ámos Komenský (Comenius), who has been called the ‘father of modern education’,<sup>27</sup> wrote books titled *Pansophiæ Prodromus* ‘Forerunner of Pansophy’, as ‘universal wisdom’, *Pampædia* ‘universal education’, and *Didactica Magna* ‘The Great Didactic’, in which he proposed that “all men are taught all subjects in all thoroughness.”<sup>28</sup>

Comenius’s friend the intelligencer Samuel Hartlib translated some of these works into English in 1642 as *A Reformation of Schooles*, referring to pansophy as specifically Christian.<sup>29</sup> Nevertheless, *pansophy*, occasionally spelled *pantosophy*, came to mean ‘universal or cyclopædic knowledge; a scheme or cyclopædic work embracing the whole body of human knowledge’.<sup>30</sup> Pansophy formed the basis of Pansophia, ‘a dream of science’, the vision of a Utopian society, to this day still not realized, as Frank E. and Fritzie P. Manuel point out in their scholarly tome *Utopian Thought in the Western World*.<sup>31</sup>

Comenius was not the first to attempt to develop a comprehensive work embracing the entire body of human knowledge. Before and since, a number of intrepid explorers have attempted to solve this ultimate problem of human learning.

One of the first was Roger Bacon, an English Franciscan philosopher in the thirteenth century, who became known as *Doctor Mirabilis* ‘Wonderful Teacher’ throughout Europe. He saw the need for organizing knowledge into a coherent whole, proposing a vast encyclopaedia of all the known sciences, requiring many collaborators. However, the Pope, whose blessing Bacon sought, misunderstood Bacon’s proposals and he was eventually imprisoned by his fellow Franciscans for ‘suspected novelties’ in his teaching, a condemnation probably issued because Bacon was also angry and frustrated with the theologians and scholars of his day, bitterly attacking them.<sup>32</sup>

Roger’s namesake, Francis Bacon, was the next to pick up the baton, attempting to develop a classification of all varieties of learning in Book II of the *Advancement of Learning* in 1605. He distinguished science or philosophy from history and poesy, History relating to Memory, Poesy to Imagination, and Philosophy to Reason.<sup>33</sup> Then, in 1620, he set out to develop a systematic approach to human learning in a massive work titled *Instauratio Magna*, the *Great Instauration* or *Great Renewal*, writing in the Preface, “the wisdom we have drawn in particular from the Greeks seems to be a kind of childish stage of science ... too weak and immature to produce anything.”<sup>34</sup>

However, he was only able to complete the second part of his magnum opus titled *Novum Organum* (*The New Organon*), which is a reference to Aristotle’s *Organon* or *Instrument for Rational Thinking*, in which he defined the syllogism, laying down the foundations of deductive logic. In Bacon’s Plan for this great work, he sought to place the foundations deeper and further back than ever done before, saying, “What the sciences need is a form of induction which takes experience apart and analyses it, and forms necessary conclusions on the basis of appropriate exclusions and rejections.”<sup>35</sup>

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This sentiment was thus to have a major influence on the development of scientific method, emphasizing the split between humanity and Divinity. For Bacon famously said, “the last or furthest end of knowledge ... [is] for the glory of the Creator and the relief of man’s estate,”<sup>36</sup> reflecting the arrogant belief that Nature is separate from humanity and that human beings hold dominion over our natural environment. He repeated this sentiment in the opening of the Preface to the *Great Renewal*, saying, “A quite different way must be opened up for the human intellect than men have known in the past, and new aids devised, so that the mind may exercise its right over nature.”<sup>37</sup>

Kepler, ten years younger than Bacon, was much more of a mystic, inspired by his direct experience of God to develop the first two laws of planetary motion. Especially noteworthy is that to calculate the orbit of the Earth around the Sun, Kepler imagined that he was standing on Mars, observing the Earth, a thought experiment that Einstein said was ‘true genius’.<sup>38</sup> Then, in *The Harmony of the World* in 1619, Kepler sought the unifying harmony that underlies geometry, music, poetry, architecture, and astronomy, integrating them all into a glorious whole.

Skipping René Descartes and Newton, for the moment, the man who came closest to solving the ultimate problem of human learning was Charles Sanders Peirce, as he went through a profound transformation of consciousness 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”,<sup>39</sup> writing to his lifelong friend William James, “I have something very vast now. I shall write it 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.”<sup>40</sup> Nevertheless, reflecting on this endeavour nearly twenty years later, he wrote that he was applying a method that any intelligent person could master.<sup>41</sup>

Accordingly, Peirce set out to write a book that he aptly called *A Guess at the Riddle*, the guess being the proposition that the basic building block of all knowledge is the triad, which could be applied to all branches of learning. Peirce listed some of these in the Table of Contents as ‘reasoning’, ‘metaphysics’, ‘psychology’, ‘physiology’, ‘biology’, ‘physics’, ‘sociology’, and ‘theology’.<sup>42</sup> In the Introduction to this book, he said that its principal purpose was “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,”<sup>43</sup> the very first sentence of the first volume of his *Collected Papers* in 1931.<sup>44</sup> Peirce 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.<sup>45</sup>

Not surprisingly, writing this book proved too much of a challenge, despite Peirce’s prodigious abilities as a polymath. Nevertheless, 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 introduced Westerners to Buddha and his teachings.<sup>46</sup>

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.”<sup>47</sup> Peirce thus came

close to discovering the fundamental law of the Universe: the Principle of Unity in Integral Relational Logic, as the key to Inner Peace, a prerequisite for World Peace.

Shortly after these five metaphysical essays were published, Peirce had what he called a mystical experience, submitting a much shorter essay to the *Monist* in 1893 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 edited the seventh volume of Peirce's *Collected Works*.

The word *synechism* derives from Greek *synekhēs* 'continuous', a precursor to Bohm's concept of "unbroken wholeness in flowing movement", as Joseph Brent, Peirce's biographer, points out.<sup>48</sup> 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. He 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'.<sup>49</sup>

In modern times, one of the most influential figures seeking the onement of religion and science has been Ken Wilber, another voluminous writer from the USA. However, he was doubtful whether this schism could ever be bridged, writing in 1998 in *The Marriage of Sense and Soul: Integrating Science and Religion*, "Truth and meaning, science and religion; but we still cannot figure out how to get the two of them together in a fashion that *both* find acceptable."<sup>50</sup>

Then, just two years later, taking a much broader view of the Theory of Everything than physicists like Stephen W. Hawking took, Wilber wrote:

This book is a brief overview of a Theory of Everything. All such attempts, of course, are marked by the many ways in which they fail. The many ways in which they fall short, make unwarranted generalizations, drive specialists insane, and generally fail to achieve their stated aim of holistic embrace. It's not just that the task is beyond any one human mind; it's that the task is inherently undoable: knowledge expands faster than ways to categorize it. 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.<sup>51</sup>

Wilber then goes on to ask, "So why even attempt the impossible?" To which he replies, "Because, I believe, a little bit of wholeness is better than none at all, and an integral vision offers considerably more wholeness than the slice-and-dice alternatives."<sup>52</sup> He seems to be saying here that Wholeness is like an asymptote in mathematics, which can be approached but never reached in finite time. If so, he is confusing the *infinite*, as a limitless, numerical quantity, which are infinite in number, and *transfinite*, transcending the categories, which limit our understanding of ourselves and the world we live in, breaking it up into pieces. In Sanskrit, these are called *māyā* 'delusion, illusion, appearance' or *līlā* 'play of the Divine'.<sup>53</sup>

## **Questioning assumptions**

In the context of the summer sessions that the Pari Center has held on the theme 'Beyond Bohm', to explain how Life has returned me Home to Wholeness, from which I have never left, I can do no better than describe what I learned from an article I read around 1985, no longer to hand. When being interviewed on Krishnamurti's enlightened approach to education, Bohm said that if we do not let go of our prejudices, questioning all our beliefs, assumptions, and preconceptions, then humanity is not a viable species. Similarly, in 1986, in an interview titled 'The Importance of Questioning Fixed Assumptions', Bohm said, "The mind must be free and ready to explore, without fixed conclusions and presuppositions and assumptions, without being blocked by them."<sup>54</sup>

This statement well summarizes the questioning approach to learning that I began to adopt as a seven-year-old, when I was old enough to think for myself. As I did not feel that I belonged to the family and

culture I had been born in, I was still in touch with my innate sense of Wholeness. I could thereby see that science and religion are incompatible with each other because their contextual worldviews—denoted by *Universe* and *God*, respectively—could not be reconciled. Furthermore, because the truth of what we learn is dependent on context, with science and religion having incompatible contexts, I had no way of establishing whether what I was being taught in church and at school and university was true or not.

The upshot of this questioning approach to human learning is that I learned almost nothing during my formal education, which stood me in good stead for the second half of my life, for I had little to unlearn. Nevertheless, as both the destructive and the creative power of Life has been guiding me to my destiny since my conception, it ensured that I learned just enough to go to university to major in mathematics.

Then, during the twelve years following my graduation, I abandoned my lifelong quest for Love, Peace, Wholeness, and the Truth to get married, have children, and pursue a business career in the competitive computer industry, mostly with IBM in sales and marketing, as both a systems engineer and manager. However, as I can now see, I was living a lie, which Life, with other plans for me, could not allow to continue. With the information technology industry at a watershed, at the birth of the Information Society, I began an innovative study of the relationships of computers to humans.



Most significantly, the computer is a machine quite unlike any other that the *Homo* genus has invented during the past two thousand millennia. 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.*

But what exactly is the nature of this machine, which humans had invented thirty years earlier? As I realized in my late thirties, I could not answer this question because I did not know myself. I had not been following the directive to “Know thyself,” which seven wise men posted on the temple of Apollo at Delphi, Plato tells us.<sup>55</sup> So I did not understand what it truly means to be human, in contrast to the other animals and machines, like computers. Nothing in my formal education and from sixteen years working in the data-processing industry could answer the fundamental questions of human existence.

I was not alone in wondering whether machines could think for themselves. In 1950, Alan Turing, considered to be the father of theoretical computer science and artificial intelligence,<sup>56</sup> had believed that they could.<sup>57</sup> However, a century earlier, Ada Lovelace, the daughter of Lord Byron and his mathematician wife Annabella, disagreed with him and with all others who still believe that computers could be superintelligent,<sup>58</sup> far outstripping any level of intelligence that humans have the potential to awaken. In a brilliant memoir on Charles Babbage’s Analytical Engine, the first design for a general-purpose computer, Ada 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.<sup>59</sup>

Babbage had 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, Ada delightfully wrote, “We may say, most aptly, that the Analytical Engine weaves algebraic patterns just as the Jacquard-loom weaves flowers and leaves.”<sup>60</sup>

However, modern computers are quite different from the Analytical Engine and the first electro-mechanical computers built in the early 1940s. Following a draft design that the eminent mathematician and polymath John von Neumann proposed in 1945,<sup>61</sup> programs are today stored within the main storage of the machines. This means that instructions to the central processing unit (CPU), which Babbage called

the Mill, are strings of binary digits (bits), just like the data that these instructions process. These I call active and passive data.

In stored-program computers, programs, as active data, could theoretically modify themselves mid-flight, treating themselves as passive data. But could a function that a human has written write a function that has never existed before, independent of a human programmer? Without going into the technical details, this is a question that I set out to answer in 1979. For I felt that this was the key to answering the question, “Can machines think?”



Nor was this all. At the time, IBM had a marketing slogan ‘Manage data as a corporate resource.’ One intention was to encourage companies to appoint a Chief Information Officer (CIO) alongside the Chief Financial Officer (CFO), managing money. But what is the relationship between data, underlying information, and money? I had known since minoring in economics in the early 1960s that money does not measure anything in any meaningful manner, in either macro- or microeconomics. So, money is a pseudo-scientific type of information and can thus be represented in the business models that information systems architects build, albeit imperfectly. On other hand, the value of information is determined by its meaning within context and so cannot be satisfactorily represented in the financial models of quantitative economists, investment bankers, and management accountants.

Furthermore, we have reified money, turning it into a commodity with value, to be bought and sold in the financial markets, like trading in metres and kilograms, as units of measure. This means that the money supply must stay finite if money is to have any psychological value in these markets. Grains of sand, for instance, could not be used as a basis for money. Money has to be relatively scarce to maintain its value, as humans fight each other for a slice of the finite financial pie.

These insights were absolutely essential to give me some hope for the next generations. For, looking at the broad scope of the future of the computer industry, my visionary abilities led me to see that technological development could not drive economic growth indefinitely and hence that my children were not being educated to live in the world that they would be living in when they came to be bringing up children of their own. If we were to rise above the level of our machines—claiming to have artificial general intelligence—then we would need to establish a work ethic focused on realizing our infinite potential as humans, the title of F. David Peat’s biography of David Bohm. In this way, we could cocreate the life-enhancing Sharing Economy, recognizing the interconnectedness of all humans, in particular, and beings, in general.

It thus became clear to me, as I was engaged in developing an innovative marketing programme for Decision Support Systems (DSS), that we would need a new science of humanity if we were to manage our business affairs with full awareness of what we were doing. I had become interested in psychology in 1974, when I became a systems engineering manager, more focused on human relationships than technological development. In particular, I learned about Abraham Maslow’s hierarchy of needs<sup>62</sup> on an IBM management induction course, and some friends introduced me to Eric Berne and Thomas A. Harris’s transactional analysis, with its simple parent-adult-child (PAC) model of interpersonal communications.<sup>63</sup> However, I did not feel that these psychological models were sufficiently profound and extensive to provide the basis for a life-enhancing system of managing our business affairs.

I began to explore this possibility in January 1980, when I moved to a new marketing department titled Information Systems Support Centre (ISSC), with the brief of taking a five-year perspective, rather than the three-month outlook of finance directors. There I learned about a business modelling method that IBM

had developed. In this, information systems architects develop models of dynamic business processes, such as designing, manufacturing, marketing, ordering, and invoicing, and their relationships to each other, as well as integrated models of static classes of information in enterprises, such as employees, customers, products, locations, and deliveries.

However, there was something missing in the process-entity matrices at the heart of what was then known as Business Systems Planning (BSP). They generally omitted the data-processing function, itself. Modelling such processes is a little tricky, for the relationships between active and passive data in computers could change in nanoseconds.

In particular, managers and professionals were interacting directly with computers in decision support systems, with machines doing the time-consuming calculations and information retrieval, giving humans the opportunity to be more creative. So, I began to wonder how the technologies of timesharing and personal computing—underlying decision support systems—could be included in comprehensive models of all business processes. Furthermore, if these models were to be complete, they would need to include the creative process of developing such business models in the models, rather tricky.

Then, realizing that the global economy holds the seeds of its own destruction within it, I wondered how much time we had before we could rebuild the education and economic systems on a sound foundation. In 1979, when attending a weeklong conference at IBM Canada on the marketing and development of Decision Support Systems, I had learnt about the concept of synergy. Meaningful information could be obtained not only from data elements but also from the *relationships* between them. So, the more integrated information systems became, the more powerful that they could become. This insight thus expanded my understanding that *information is data with meaning*, which I had learnt on an IBM course in 1969.<sup>64</sup>

Such developments might seem to be of benefit to society, helping humans learn about the world we live in in an accelerating manner. However, I could also see that business executives were becoming increasingly authoritarian. So, while automating some tasks could liberate people from the drudgery of their jobs, there was also a danger that they were increasingly becoming cogs in a vast economic machine.

These were just some of the thoughts racing through my mind on Sunday 27th April 1980, as I was strolling across Wimbledon Common in London to the pub for lunch. Then, at 11:30, I realized that active and passive data are types of energy, rather like kinetic and potential energy in mechanics. Because of the synergy of data energy, this could explain what is causing the pace of evolutionary change in society to accelerate exponentially. I realized immediately that the existence of nonphysical energies was the key that would unlock all the innermost secrets of the Universe that had puzzled me in adolescence.

Accordingly, to explore what such energies would mean for the future of humanity, three weeks later, I abandoned my business career and set out to develop a cosmology that would unify the psychospiritual energies within us with the four materialistic forces recognized by physicists: the electromagnetic and gravitational fields and the weak and strong nucleic forces.<sup>65</sup>

Then, at the end of July, I read an article in the *Sunday Times* outlining a radically new theory of the Universe that David Bohm, formerly a friend and colleague of Einstein, had developed. This resonated deeply within me. So, I sent my first, rather embryonic attempt to develop such a cosmology to Bohm, along with two professors of cybernetics and professors of computer science, machine intelligence, and mathematics, titled 'The Future of Computers and Society'.<sup>66</sup> Three replied, with David Bohm kindly inviting me for a talk at Birkbeck College.



At this first meeting, my top priority was to find a concept that is common to both nonphysical data

energies and the four physical forces acknowledged by materialistic scientists. Accordingly, I asked Bohm what is the source of the energies that are causing the pace of evolutionary change in society to accelerate exponentially. He replied, “Energy does not have a source; energy is contained within structure.”

The existence of energetic structure-forming relationships was just the answer I was looking for. For I could see from their synergistic effects that this could explain how each stage in the growth of the complexity of information systems could contain more energy than the sum of the preceding parts. Somehow, energy was being created out of nothing in an accumulative fashion, a phenomenon that can be mapped mathematically by the exponential function.

At the time, Bohm’s reply satisfied me. For I saw myself as a scientist. So, if my evolutionary studies were ever to be accepted as valid science, and thereby have an influence in society, I felt it essential to exclude the Divine from consideration, as Bohm had done, saying “There are no Absolutes in the Implicate Order.” I had forgotten that the central theme of my life as a teenager had been to find a way of revealing Inner Peace by ending the war between science and spirituality, still raging, even today.

Bohm also introduced me to the concept of proprioception, in which thought is aware of itself, at this first meeting. As he said in the posthumously published *On Dialogue*, “We could say that practically all the problems of the human race are due to the fact that thought is not proprioceptive.”<sup>67</sup> However, I felt that this word was too somatic in nature, in a similar manner to the Jungian Paul Levy, who said, “Unlike the body, however, thought is not proprioceptive.”<sup>68</sup>

In my case, *proprioception* did not satisfactorily denote my endeavours to create a self-inclusive model of the whole of evolution, taking place in the Cosmic Psyche. As I was later to discover, a more appropriate word is *apperception*, which Jean Gebser defined in the splendidly titled *The Ever-Present Origin*: “The aperspective consciousness structure is a consciousness of the whole, an integral consciousness encompassing all time and embracing both man’s distant past and his approaching future as a living present.”<sup>69</sup> However, the term I prefer to use today is *Self-reflective Intelligence*, corresponding to what is sometimes called the Witness in spiritual circles.

To fully heal my fragmented mind and split psyche in Wholeness, this has meant that I have needed to include the concept of the Absolute, as the Divine Origin of creativity, in my reasoning. To this end, I have been much influenced by Bohm’s general way of bringing universal order to our thoughts: “*to give attention to similar differences and different similarities*”, a notion of order that the artist Charles Biederman gave him.<sup>70</sup> Without going into the technical details, it is by comparing data elements with each other that I form all concepts in an egalitarian manner, as a taxonomy of taxonomies.

Then, in October 1983, as I was once again strolling across Wimbledon Common, but from the opposite direction three and a half years earlier, I was able to form the concept of the Absolute in exactly the same way as I form concepts representing data structures in the relativistic world of form. By applying the Principle of Unity, I could see that the Absolute, which is beyond compare, differs in comparison with all concepts representing forms. I was thus able to see that the Absolute, as both Unity and as the Totality of Existence, possesses the properties of transcendence and immanence.

However, while this cognitive understanding was necessary to heal the split between humanity and Divinity, it was not sufficient to experientially establish God as a scientific concept. This did not happen until the early noughties in the mountains of Norway and the forests of Sweden, where I had a number of liberating, cathartic experiences, which Zen Buddhists call *kenshō* ‘seeing nature’ or *satori* ‘inner knowing’,<sup>71</sup> from Greek *kathairein* ‘to purify, purge’, from *katharos* ‘pure’. But it was not until 2008, when my friend Nukunu invited me to attend a spiritual retreat he was holding in the Altai Mountains in Russia, as the

original home of the shamans, that I became as free as possible of the cultural constraints on my creativity and imagination.

## Creativity and imagination

With the Gnostic understanding revealed to me beside the beautiful Lake Teletskoye in southern Siberia, the culturally induced war within me between science and religion ceased to exist. As a Panosopher in my late sixties, I could honestly live harmoniously with Heraclitus's Hidden Harmony, at long last. To explain what I mean by this, I drew this diagram, illustrating three quite different paths through life.

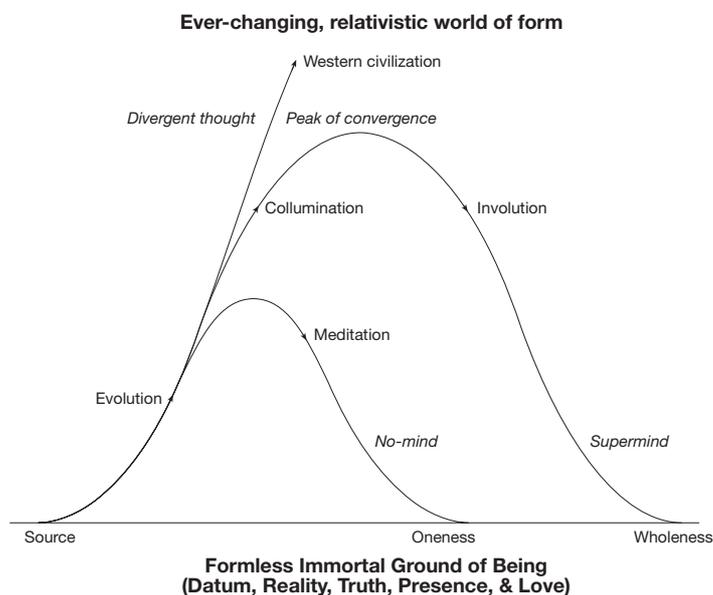
The path marked 'Western civilization' represents the predominant way of life in today's secular society, accelerating away from Reality with every day that passes. This is why Eckhart Tolle said that we are a species that has lost its way, concluding his best-selling book *A New Earth* with these words: "A new species is arising on the planet. It is arising now, and you are it!"<sup>72</sup>

The two bell curves represent a spiritual way of life that recapitulates what Joseph Campbell called the Cosmogonic Cycle in his popular book *The Hero with a Thousand Faces*,<sup>73</sup> leading us back to the Source, free of the sense of a separate self. The smaller bell curve represents the traditional path of the mystics, taking a short cut to God, towards Oneness and union with the Divine, with No-mind. These we can say are members of the subspecies *Homo divinus unitas*.

The middle path that unifies these extremes is one that I have been following during my lifetime, growing and dying into *Homo divinus holoensis*, from Greek *ὅλῆ* 'whole' and *-ensis* 'belonging to'. For, Life has turned evolutionary divergence into the peak of convergence within me, moving from the Alpha Point of evolution to its Omega Point and back again. I can thus rest in Wholeness with what Aurobindo called *Supermind*: "The Supermind is the Vast; it starts from unity, not division, it is primarily comprehensive, differentiation is only its secondary act."<sup>74</sup>

The word *collumination* evolved from an initial attempt to represent my creative processes in what Bohm called the rheomode of language,<sup>75</sup> denoting the Holoflux, in my case flowing in the vertical dimension of time, like a fountain, rather than the horizontal, like a river. *Collumination* derives from Latin *cum* 'together with' and *lumen* 'light', on the model of *illumination*. So, by colluminating, I am able to view the Cosmos holographically, rather like the coherent light of a laser creating an image of an object in which every part depicts the whole.

So, when I returned to Sweden from Russia, I sensed a tremendous surge of creative energy within me, which I imagined could help us deal intelligently with the most severe financial crisis since the Great Depression then taking place. I had known since the late 1970s that the global economy is inherently unstable and that it would one day collapse catastrophically, giving us the opportunity to rebuild our business affairs on the meaningful modelling methods of information systems architects—in line with Bohm's emphasis on meaning—replacing divisive financial modelling methods. In the event, the economy managed to recover, which was a relief, because this would give us a few more years to prepare for the next



crash, which would most probably be the last, before we could be free of the divisiveness of money in the Sharing Economy, giving everyone the opportunity to reach their fullest potential as humans.

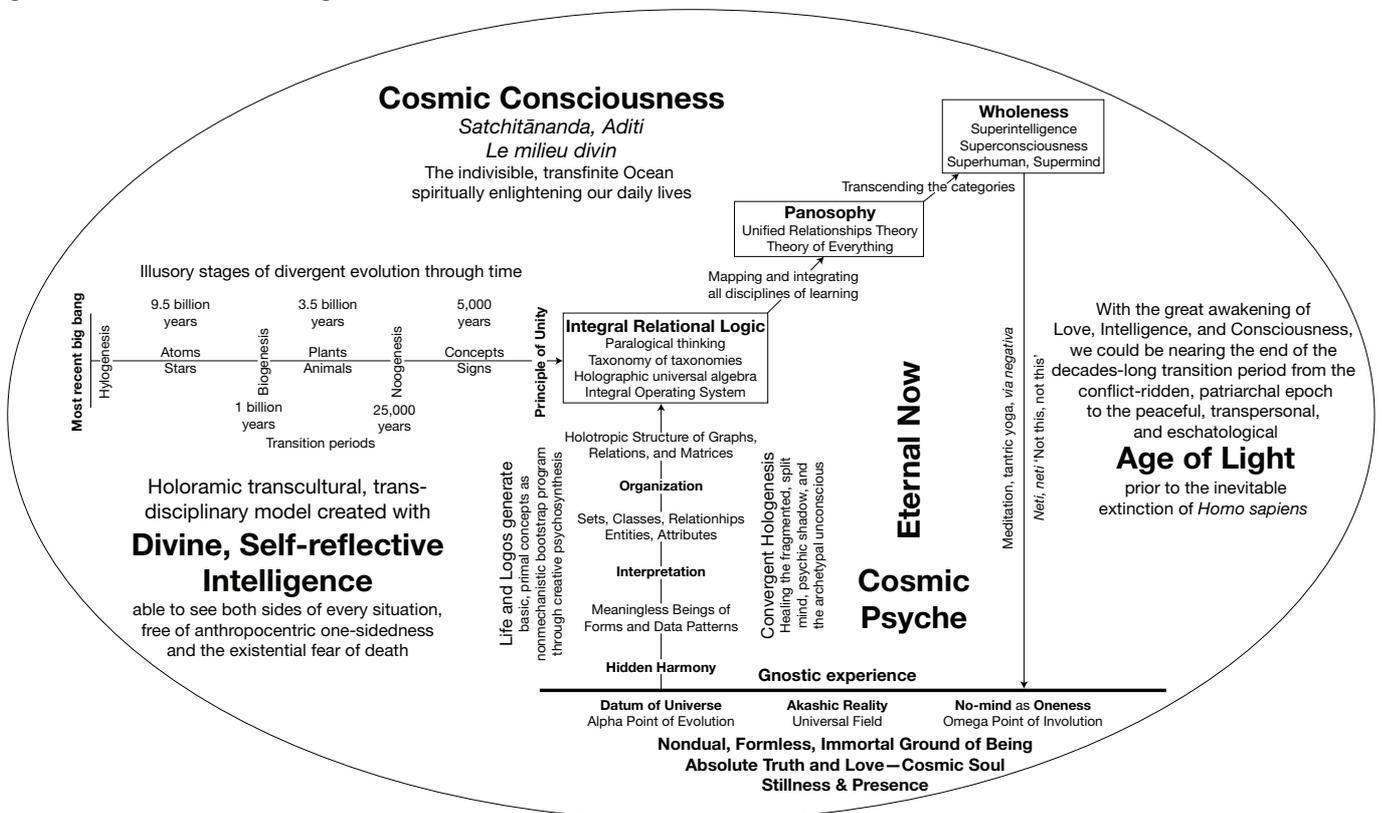


But first, I felt that it was essential to complete the union of the spiritual renaissance and scientific revolution that had been emerging for the previous few decades. Accordingly, I set out to reorganize all my writings to that date with the full awareness that Integral Relational Logic has emerged directly from the Divine Origin of the Universe. Even though we all implicitly use this universal system of thought every day, I had previously partially hidden the Method for healing our wounds because I was aware that unifying science and spirituality in Wholeness, a prerequisite for World Peace, was not socially acceptable.

For instance, in 2012, the biologist Rupert Sheldrake published *The Science Delusion*, an obvious riposte to Richard Dawkins' *The God Delusion*. And the previous year, Deepak Chopra, a medical practitioner and renowned spiritual teacher, and Leonard Mlodinow, co-author with Stephen Hawking of *The Grand Design*, had co-written *War of the Worldviews: Science vs. Spirituality*.

The principal problem with this book lies in the opening sentences of the Foreword, which both authors wrote: "Nothing is more mysterious than another person's worldview. Each of us has one. We believe that our worldview expresses reality." So, they ask, "What happens, then, when two worldviews clash?" Well, this is an anthropocentric and egoic question, not asked from a Cosmic perspective. Furthermore, it indicates that even the conventional scientific worldview is subjective, despite the claims of science for objectivity. So, as Chopra writes in his section in Part One, titled 'The War', "There is good reason for our worldviews to be at war. Either reality is bounded by the visible universe, or it isn't."<sup>76</sup>

But this statement is based on a false conception of the Universe. When we look inwards with Self-reflective Intelligence, a quite different picture of the Totality of Existence emerges, depicted in this diagram of the Grand Design of the Universe.



One definition of *worldview* I have found on my iPad is 'Fundamental cognitive orientation of an individual or society encompassing the entirety of the individual or society's knowledge and point of view'.

### *The Divine Origin of Creativity*

But this is also an anthropocentric perspective. If we are to fully understand the world we live in, we need to stand outside ourselves with Self-reflective Intelligence, rather like astronauts viewing the Earth from the Moon. *Worldview* is a calque of *Weltanschauung*, a word I prefer to denote this Divine perspective, for it derives from German *Welt* ‘world’, from Middle High German *wërlt*, from Old High German *weral*, cognate with *world*, and *Anschauung* ‘view’, from Middle High German *anschouwunge* ‘observation, mystical contemplation’. So *Weltanschauung* has a deeper meaning than *worldview*, indicating both scientific observation and spiritual meditation.

As the above diagram indicates, I imagined that by bringing Love, Light, Life, and the Logos into science and business we could collectively awaken in the eschatological Age of Light, which I visualized could last for a few more generations before our inevitable demise as a biological species. I felt that with the *Weltanschauung* that we all share, we could collectively fulfil Teilhard’s prophecy at evolution’s glorious culmination:

The way out for the world, the gates of the future, the entry into the superhuman, will not open ahead to some privileged few, or to a single people, elect among all peoples. They 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.<sup>77</sup>



In the meantime, I still had much work to do in solitude. For, as Anthony Storr writes 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.”<sup>78</sup>

So, having found the inseparable Cosmic Context and Gnostic Foundation for all our learning, which I had begun searching for as a seven-year-old, I have spent my seventies writing several books and many essays and articles describing what my teachers were unable to teach me as a teenager, the most wonderful fun! From a social perspective, the primary purpose of these writings—as expressions of my inner sense of Wholeness—was to complete the final revolution in science, just as Newton had completed the first in the 1687 with *Mathematical Principles of Natural Philosophy*. For I felt that nothing less would have the power to shake humanity out of its fragmented delusions.

To this end, the result of nearly five years reorganizing all my writings since returning from Russia was a trilogy titled *Wholeness: The Union of All Opposites*,<sup>79</sup> with an alternative title *Semantic Principles of Natural Philosophy*, to show its relationship to the history of ideas. However, I was not engaged in creating a new paradigm in science, as scientists and philosophers had been attempting to do since the mid 1980s, when Fritjof Capra and Willis Harman arranged a new paradigm conference in California.<sup>80</sup> For, as Bohm pointed out to me in a conversation at the time, Wholeness is indivisible, not a paradigm, as a pattern.

Furthermore, the cosmology of cosmologies that had emerged within me is far more revolutionary than the scientific revolutions of Kepler, Newton, Charles Darwin, Einstein, and Bohm in that it broke the most fundamental taboo in Western thought: the belief in a deep schism between humanity and Divinity, which can never be healed. To explain what I mean by this, Part I of the trilogy provides a definitive description of the commonsensical art and science of reason we all implicitly use every day, titled *Integral Relational Logic*. Its first chapter is titled ‘Starting Afresh at the Very Beginning’—at the Divine Origin of creativity.

As time is treated in exactly the same way as all other concepts in Integral Relational Logic, the other two parts of the trilogy are focused on presenting an evolutionary perspective, providing an answer to the most critical unanswered question in science. Part II, titled *The Unified Relationships Theory*, begins with outlines of radical changes to the theories of causality and evolution. With these theories providing the

context, the other three chapters of this part then outline the growth of technological structures, showing why they are limited and cannot grow indefinitely.

Part III on *Our Evolutionary Story* was an extended attempt to describe how humans have evolved within the order of primates and what our ultimate destiny might be. I made good progress with my researches until I reached the so-called Age of Enlightenment, when reason fully separated humanity from Divinity. It thus became crystal clear that evolution had carried Western civilization into a cul-de-sac. I attempted to write three chapters on how we could extricate ourselves out of this mess, collectively awakening in the Age of Light. But with the trilogy having reached over 1,300 pages, which are rather indigestible, I abandoned this project and sought other ways to make a positive contribution to society.

Accordingly, in 2012 and 2014, I wrote two shorter books titled *The Principle of Unity: Living Intelligently and Peacefully at the End of Time*<sup>81</sup> and *The Theory of Everything: Unifying Polarizing Opposites in Non-dual Wholeness*.<sup>82</sup> I had the advantage in writing these books in that I had learnt almost nothing at school and university in adolescence. But I was also at a disadvantage in that I had little understanding of how those educated in the conventional manner see the world, which meant that it was very difficult to relate to my potential readership. Nevertheless, writing these books greatly helped with my healing process, learning much about the world that we have inherited from our forebears.

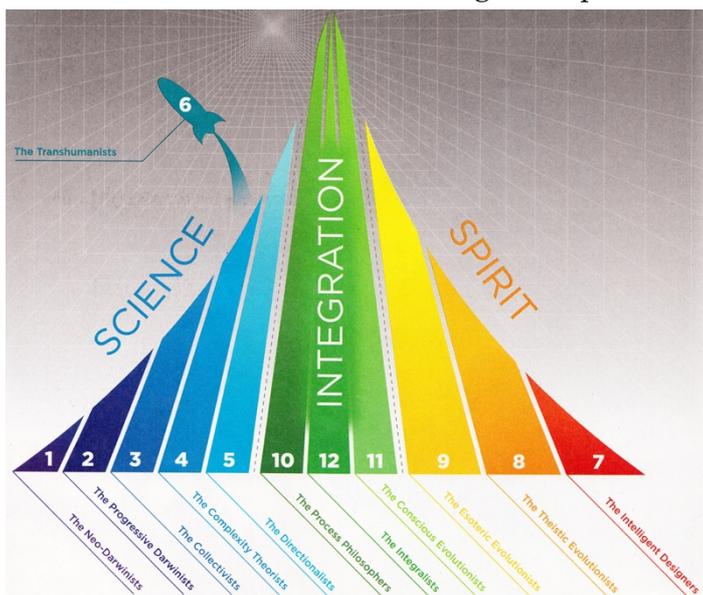
During the next two years, my creative writing was focused on presenting my understanding of the whole of evolution, which was still evolving. I was particularly concerned with showing how the differences in the

various theories of evolution going the rounds could be reconciled. For instance, in 2007, the *What is Enlightenment?* magazine published an article titled ‘The Mystery of Evolution: A spiritual and scientific exploration of where we came from and where we’re headed’, with this accompanying diagram showing twelve different theories of evolution that the editors had identified.

The transhumanists are shown as taking off into technocratic outer space,<sup>83</sup> having usurped this term from Julian Huxley, the author of *Evolution: The Modern Synthesis* and the Foreword to *The Phenomenon of Man*, the first translation of

Teilhard’s *Le phénomène humain*. Huxley outlined what he meant by *transhumanism* in a visionary 1700-word essay published in 1957, saying by “destroying the ideas and the institutions that stand in the way of our realizing our possibilities”, we could understand human nature, what it truly means to be a human being. When evolution thus becomes fully conscious of itself, we would transcend our limitations, fulfilling our highest potential as spiritual beings, living in mystical ecstasy, free from the suffering that has plagued humanity through the millennia.<sup>84</sup>

With evolution becoming fully aware of itself within me, I described what had thereby been revealed in 2015 in a book titled *The Four Spheres: Healing the Split between Mysticism and Science*,<sup>85</sup> bringing Teilhard’s four-stage model of evolution up to date, far beyond Darwin’s *On the Origin of Species*. For, as Lynn Margulis and Dorion Sagan point out, “in 500 pages of closely spaced type the title question—on the origin of species—[was] entirely circumvented—abandoned, ignored, or coyly forgotten.” Quoting the Australian biologist George Miklos, “The ‘struggle for existence’ has been accepted uncritically for generations by



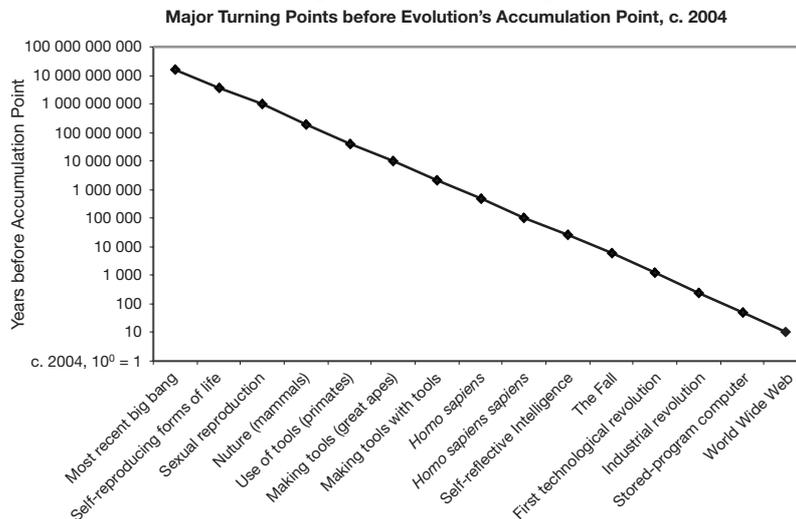
*The Divine Origin of Creativity*

evolutionary biologists with the *Origin of Species* quoted like so much Holy Writ, yet the origin of species was precisely what Darwin's book was *not* about."<sup>86</sup>

Still influenced by the way that previous revolutions in science had become established, I also felt the need to present my evolutionary insights mathematically. When I wrote the first paper that I sent to David Bohm on 'The Future of Computers and Society', I thought that I would need Catastrophe Theory, which a British colleague at IBM's European Headquarters in Paris had told me about in December 1979, when I was apparently already voicing my concerns about the catastrophe that I saw humanity blindly accelerating towards. After all, the title of René Thom's classic book on the subject is *Structural Stability and Morphogenesis: An Outline of a General Theory of Models*, which is essentially what I was endeavouring to develop to explain the growth of complexity in forms and structures.

However, this way of studying dynamical systems did not adequately model the accumulative nature of evolutionary processes, requiring some form of the exponential function. At first, I thought that the logistic function, depicted in the familiar S-shape of the learning or growth curve, could be useful. Pierre François Verhulst had introduced this function in 1845, when studying the future growth of the population of the newly formed nation of Belgium.<sup>87</sup> Indeed, the mathematical biologist D'Arcy Wentworth Thompson had made much of this function in his book *On Growth and Form*, showing how growth processes evolve under constraint,<sup>88</sup> not accelerating indefinitely, like the unfettered exponential function.

However, in 2000, I discovered at a meeting of the Scientific and Medical Network (SMN) in Sweden that the discrete version of the logistic function (called *logistic map*) is far more powerful. There, Nick Hoggard, a software developer, showed that the whole of evolution could be mapped through the nonlinear system dynamics of chaos theory, employing the Feigenbaum bifurcation velocity constant  $\delta$ , which is 4.6692. Mitchell J. Feigenbaum also discovered that this mathematical constant appears in other bifurcating systems, generated with different nonlinear difference equations, forming the heart of what he called 'universality theory'.<sup>89</sup> At this conference, Nick presented this diagram, which I have slightly modified:



This diagram shows two key points, apart from illustrating the finite limit of the infinite geometric series that puts our rapidly changing world into its full evolutionary perspective. First, we humans are the products of all these years of evolutionary history. So, the psychodynamics of society can only be causally mapped in the context of the dynamics of the entire Cosmos, which displays essentially the same patterns. Secondly, evolution during the past several millennia has been more mental than biological, taking place within the Cosmic Psyche. In 2016, I described this mathematical model of evolution in a book titled *Through Evolution's Accumulation Point: Towards Its Glorious Culmination*.<sup>90</sup>

### *The Divine Origin of Creativity*

Now, it is one thing to develop a comprehensive theory of evolution, explaining our origin and destiny as a species, but quite another to become aware of the Divine Origin of our creativity. As none of us is ever separate from the Source, for an instant, over the years, I have been seeking to share experiences with those similarly becoming aware that evolution is becoming aware of itself in our species, free, as much as possible, of the constraints of our cultural conditioning. The leaders of such a community have called themselves *evolutionaries* rather than *evolutionists*.<sup>91</sup>

Furthermore, even though it has been necessary for me to work in solitude for much of my life, questioning the many beliefs and assumptions that give people a sense of identity and security in life, I was well aware that if we were to rebuild the education system on the *Weltanschauung* that we all share, this would require many collaborators, along the lines that Roger Bacon suggested in the 1200s.

As a Panosopher, I saw myself like an information systems architect in such a group. For such master builders are generalists, working with specialists in other departments to develop integrated business systems for the benefit of the enterprise, as a whole. Similarly, Panosophers could work with specialists in academia to develop a coherent body of knowledge that we could pass on to the next generations, provided that we all shared a common purpose, mindset, and *Weltanschauung*, a very big IF.

To this end, from 1985 onwards, I have explored the possibility of using Bohm's Dialogue to help free participants of their cultural conditioning, by questioning assumptions within an open-minded, nurturing group setting. In this regard, Bohm was addressing a problem that Einstein identified at the end of the Second World War, although he did not explicitly state that he was doing so.

Einstein said that if we are to cocreate World Peace, we need to follow his observation that you cannot solve a problem with the mindset that created it. This is one of many paraphrases of a statement he made in an article titled 'The Real Problem Is in the Hearts of Men', published in the *New York Times Magazine* on 23rd June 1946, which began with these words: "Many persons have inquired concerning a recent message of mine that 'a new type of thinking is essential if mankind is to survive and move to higher levels'." He then went on to write, "Past thinking and methods did not prevent world wars. Future thinking *must* prevent wars."<sup>92</sup>

However, despite the popularity of dialogue groups, they were falling short of their intended purpose: to develop radically new states of mind, which could lead to a liberating change in one's sense of identity, which Bohm called 'self-image'. For, as Bohm told Lee Nichol shortly before his death in 1992, "I think people are not doing enough work on their own, apart from the dialogue groups,"<sup>93</sup> many of which have become commercialised.

For myself, realizing that Bohmian dialogues do not go deep and broad enough, I have been led to many psychotherapists and spiritual teachers, holding a wide variety seminars, workshops, satsangs, and retreats. These have empowered me to make three attempts over the years to set up a network of networks that could work towards World Peace.

The first was in 1986, when I set out to establish the Paragonian Institute with my Norwegian wife Berit, a social activist and meditation teacher who I had met at The Other Economic Summit (TOES) the year before. I had coined the word *paragonian* in 1984, following several weeks searching Greek and Latin dictionaries in Wimbledon library in London. The word derives from the Greek words *para* 'beyond' and *agon* 'contest' or 'conflict', a word that is also the root of *agony*, until the 17th century meaning 'mental stress', *antagonist* 'a person who one struggles against', and *protagonist* 'leading person in a contest'. *Paragonian* thus means 'beyond conflict and suffering', a healthy, liberated, and awakened way of being that we can realize when we are both unified with the Divine and integrated with the Cosmos; when we base

our lives firmly and squarely on our Immortal Ground of Being. *Paragonian* thus denotes the essence of *Advaita* ('not-two') in a word with a Western etymology.

However, the time was not right for such an initiative to become manifest. So, after I rejoined IBM in Stockholm in January 1990, Berit and I went our separate ways. Nevertheless, as she had become a rebirthing teacher, this deep breathing exercise had a profound effect on my own healing, relating to a devastating prenatal trauma, just seven weeks after my conception.

Working at IBM's Nordic Software Development Laboratory also greatly helped me to learn more about business modelling and programming methods that could enrich Integral Relational Logic semantically, paving the way for the business modelling methods we would need for the Sharing Economy, free of attachment to money.

Then, a few years after taking early retirement from IBM in 1997, I was invited to join an alternative spiritual and ecological community in western Sweden, with aspirations to set up an education centre for holistic studies, previously located in southern Sweden. This move inspired me to write a paperback book in 2004 titled *The Paragonian Manifesto: Revealing the Coherent Light of Consciousness*,<sup>94</sup> intended as a spiritual replacement for *The Communist Manifesto* by Karl Marx and Friedrich Engels, published in 1848.

For, after I retired from IBM, I had worked for five three-month periods as a computer consultant for a company in Stockholm World Trade Center developing advanced software systems for financial institutions engaged in the money markets. While this was the tail wagging the dog, I also realized that the information systems architects at this company had all the skills, methods, and tools we would need to cocreate the business systems we would need in the Sharing Economy.

The friend of a friend who had helped me design the self-published *Paragonian Manifesto* also helped me design a modern website for what I was then calling the Paragonian Foundation, replacing the rather primitive website I had set up with basic HTML after retiring from IBM. There was some initial interest in this initiative from a few friends and associates in the UK and Sweden. However, there was also much incomprehension and hostility. So, once again, the seeds that I planted did not bear fruit.

My third attempt to set up an awakening network of networks was inspired by Ananta Kumar Giri, professor at the Madras Institute of Development Studies in Chennai. I met Ananta in Sweden in 2013, when he was on a worldwide tour, holding seminars on 'Spiritual Pragmatism and Spiritual Pragmatics', much influenced by Eastern spiritual traditions and the philosophy of pragmatism, which Charles Sanders Peirce and William James had introduced in the late 1800s, with John Dewey making further developments.

Ananta invited me to write an essay for a book of essays he was editing on the subject.<sup>95</sup> I titled my essay 'Mystical Pragmatics: Harmonizing Evolutionary Convergence', for *spiritual* is a much over-used word, not denoting the profundity of human experience we need to sort out the mess the world is in today. At about the same time, a young web developer, living just three hours north of me in Sweden, was inspired by my website for the Paragonian Foundation and offered to redesign it with a third-generation web-design tool called Drupal.

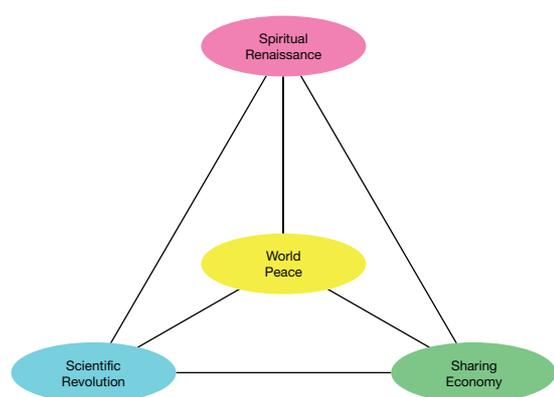
One benefit of this content management system (CMS) is that we were able to design a hyperlinked Glossary showing the many changes to the meanings of words that I have needed to make in accordance with Bohm's archaeology of language, tracing roots, as much as possible, to their Proto-Indo-European origins. However, this Glossary is not yet complete, for I have come to realize that such semantic changes only make sense through a radical transformation of underlying consciousness.

Nevertheless, we did set up a new domain for the Alliance for Mystical Pragmatics, with the motto 'Harmonizing evolutionary convergence' and this logo, denoting that it is based



### *The Divine Origin of Creativity*

on the fundamental law of the Universe, declaring that opposites are never separate from each other, including humanity and Divinity. The structure of the Alliance represented a natural clarification of the objects of the Paragonian Foundation. These were intended to invoke the primal energies of Cosmic



Consciousness, Self-reflective Intelligence, the creative power of Life, and Divine Love, to integrate four major global movements in the world today into a coherent whole: Spiritual Renaissance, Scientific Revolution, Sharing Economy, and World Peace, their relationships being illustrated by the flattened tetrahedron in this diagram. Most significantly, as technological development cannot drive economic growth for very much longer, trade would no longer be the principal driving force of the economy. Rather, we would adopt a work

ethic in which the awakening of intelligence and consciousness in humans is paramount.

However, once again, I received little practical support for this endeavour. For making the most radical change to the work ethic since the invention of money some 4,000 years ago—to come ever closer to realizing our infinite potential as humans—was too great a leap for most to take, preoccupied, as they are, with maintaining familial and social relationships and with earning a living within the divisive global economy. For, because of the split between humanity and Divinity, money has become the principal immortality symbol in society today, as Ernest Becker, the Pulitzer prize-winning author of *The Denial of Death*, has pointed out.<sup>96</sup>



Even though the creative power of Life continues to pour through me irrepressibly, this situation has led me to make a radical revision to my life’s purpose as a social being in recent years. The turning point came in 2015, when a friend and neighbour told me about a book that Andrew Harvey had asked Carolyn Baker and Guy McPherson to write titled *Extinction Dialogs: How to Live with Death in Mind*.

I had known since 1982, when I first became aware that Life had carried me to the Omega Point of evolution, that humankind is not immortal, that one day a generation of children would be born who would not grow old enough to have children of their own. At first, by studying such books as John Leslie’s *The End of the World: The Science and Ethics of Human Extinction*, I hoped that at least another seven generations of humans could be born, with the final generation dying in the 23rd century, at worst during the 2100s. For, if the accelerating pace of evolution could awaken us all to what is happening to humanity, the last few generations, as exemplars of *Homo divinus*, could live in joy, knowing that there is no death in Reality.

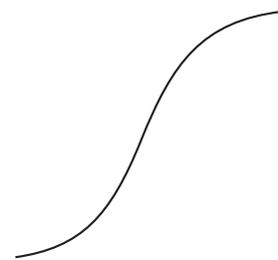
However, while I was writing the trilogy on *Wholeness*, I began to see that I had been far too optimistic. For instance, Stephen Sackur asked James Lovelock in a BBC Hardtalk interview in 2010, “What do you think is a viable [population] that Gaia, the planet, can sustain?” Lovelock replied, “I would 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.”<sup>97</sup>

But with society degenerating into more and more chaos after evolution passed through its Accumulation Point around 2004, I have now seen that even this prognosis was far too optimistic. Accordingly, when Guy McPherson, Professor Emeritus of Natural Resources at the University of Arizona, visited Norway in December 2017, I arranged to meet him for lunch in Oslo to learn about his very latest insights. There I learned that the collapse of the industrial economy would not enable us to cocreate the

Sharing Economy on the meaningful modelling methods of information systems architects, for such an apocalyptic, revelatory event would accelerate global warming, not diminish it.

The reason is that the aerosol-masking effect, caused by industrial pollution, is actually slowing down the effects of greenhouse gases through what is also called global dimming. So, deregulating coal-powered plants, as the Supreme Court of the USA demanded in a ruling on 30th June 2022,<sup>98</sup> could prolong human existence for a little longer, albeit within an unsustainable environment.

For, even more critical is what is happening in the Arctic, which acts as a bellwether for climate change across the entire planet. Most significantly, we are heading for a 'Blue-Ocean Event' in the Arctic,<sup>99</sup> maybe as soon as this year. For, the ice sheets in both the Arctic and Antarctic are melting with increasing rapidity from both beneath, with 'heat bombs',<sup>100</sup> and above, with multiple self-reinforcing feedback loops,<sup>101</sup> such as the release of methane gas, a far more potent greenhouse gas than carbon dioxide. As the S-shape of the ubiquitous growth curve indicates, rates of change in accumulative processes under constraint, like learning, evolution, and positive feedback loops, can change rapidly and unexpectedly. As Guy frequently indicates on his YouTube channel 'Nature Bats Last',<sup>102</sup> it is quite likely that abrupt irreversible climate change will destroy the habitat that grows the food that humans and other living organisms need to survive within just a few years.



As humankind accelerates through the eighth mass extinction of species on our beautiful planet Earth, the only book that I have found that addresses the psychospiritual issues arising from this existential crisis is Andrew Harvey and Carolyn Baker's *Savage Grace: Living Resiliently in the Dark Night of the Globe* from 2017. In the Preface, Matthew Fox wrote, "Ours is a time not only for scientists and inventors but also mystics and contemplatives to join hands so that our action flows from being and from a deep place of return to the Source."<sup>103</sup> But, as the existence of the Source, as the Divine Origin of creativity, is denied by many in the West, this proposal has so far generated very little interest, as far as I can tell.

## **Healing the split**

As it is not possible to consummate the sacred marriage of reason and spirituality in a manner that mainstream scientists and religionists can accept, completing the final revolution in science is no longer a viable option. Thus, the only choice we have as a species, if we had the free-will to make such a choice, which we don't, is to focus attention on the dying process of involution rather than the creative growth process of evolution. For, at the end of the day, this is the only way that we can live in harmony with the Cosmogonic Cycle, as the two bell curves on page 13 illustrate.

The paradox here is that humans, like all other beings, are never separate from the Immortal Ground of Being that we all share for an instant. Yet, there is a widespread agreement in religion, science, economics, mathematics, and logic that there is a great gulf between humanity and Divinity that can never be bridged. Yes, there is no technique, practiced through time, that can lead us into union with that which is beyond time and all other categories. Furthermore, healing the split between humanity and Divinity is not a cognitive exercise. It just happens experientially, when the situation is propitious.

Nevertheless, let us take a moment to look at how this tragic situation has arisen, for this understanding has greatly helped me prepare inwardly for the near-term extinction of our species. It is especially important to note the last words that Shakyamuni Buddha reputedly expressed 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."

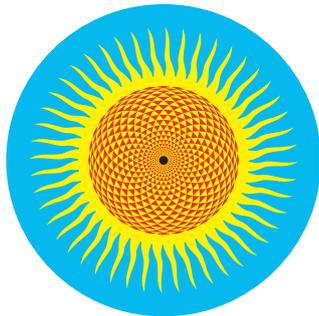
### *The Divine Origin of Creativity*

As I see it, the root of our problem can be traced back some 60,000 years, when *Homo sapiens* ‘wise human’ became self-reflective. Evolution intended this wonderful ability—distinguishing humans from the other species—to be more an opportunity than a problem, meant to eventually carry our species to evolution’s glorious culmination, its Omega Point. However, reflectiveness became a problem because our forebears became aware of their mortality, as we can see from the ritual burials that have been discovered from about that time.

So, as humans began to learn about themselves and the world we live in, there has been a constant tension between our creative activities and the underlying fear of death. Regarding the former, we humans are the least instinctive of all the animals, as the social psychologist Erich Fromm pointed out.<sup>104</sup> Using the metaphor of a computer, very few of our thoughts and actions are hard-wired. The innate instincts and automatic reflexes of babies to suck, grasp, cry, and respond to stimuli mostly disappear within the first few months of life.<sup>105</sup> Our learning—corresponding to software and data in computers—mostly determines the way that we view the world and ourselves, and hence our behaviour.

Projecting human ontogeny on to the phylogeny of our species, as a whole, our ancestors were initially like infants in adult bodies, with little conceptual understanding of what it means to be human within the overall scheme of things. In the event, it was not until linguists began studying the archaeology of language during the past couple of hundred years that we began to see how our ancestors saw themselves at the dawn of history and the first civilizations.

Most significantly, we can see that a cognitive and experiential split had opened up between humanity and Divinity from the Proto-Indo-European roots of *human* and *Divine*, which are *\*dhghem-* ‘earth’, root



of Latin *humus* ‘ground, earth’, and *\*dyeu-* ‘to shine’, root of Latin *divus* ‘godlike’ and *deus* ‘god’. These etymologies show that our forebears conceived of humans as earthlings in contrast to the divine residents of the heavens some 5,500 years ago, as Calvert Watkins explains in *The American Dictionary of Indo-European Roots*.<sup>106</sup> This split clouded over the Coherent Light of Consciousness<sup>107</sup> radiating brilliantly through us all, inhibiting our innate Self-reflective Intelligence from understanding our True Nature as humans.

Then, during the past two or three millennia, the Abrahamic religions have institutionalized their opposition to their followers knowing themselves, by healing the split between humanity and Divinity, which does not actually exist.

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”.<sup>108</sup>

One who was courageous enough to declare his Oneness with Divinity was the pre-eminent Christian mystic Meister Eckhart, who said, “The eye with which I see God is the same as that with which he sees me.”<sup>109</sup> This popular Benedictine monk was found guilty of heresy, and would no doubt have been burnt at the stake if he had not died before this gruesome punishment could be carried out.<sup>110</sup> However, in 1600, Giordano Bruno did not escape this fate, as a religious and scientific heretic,<sup>111</sup> and neither did the Sufi Mansur al-Hallaj, who was executed in a particularly cruel manner in 922 for declaring “I am the Truth.”<sup>112</sup>

It is not surprising, therefore, that when the Royal Society of London for Improving Natural Knowledge became established in the 1660s, it was based on experimental observation of our external environment,

rejecting Comenius' proposal for an Academy of Universal Wisdom and Light.<sup>113</sup> As Matthew Spinka, Comenius' biographer, ruefully commented in 1943, "Were the grandiose project accomplished in our day, what a boon it would be! But alas! the world is still waiting for its realization, and we seem to be further away from it than ever."<sup>114</sup>



Nevertheless, in recent years, there have been concerted efforts around the world to heal the split opened up by the organized religions and materialistic, mechanistic science. One who foresaw the potential was the Canadian psychiatrist Richard Maurice Bucke, who wrote in *Cosmic Consciousness* in 1901, "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,"<sup>115</sup> extraordinary words written many years ahead of their time.

A decade later, Carl Gustav Jung initiated the process of healing the split within himself, when he was in his late thirties, breaking with Sigmund Freud, who "had demonstrated empirically the existence of the unconscious psyche which had hitherto existed as a philosophical postulate".<sup>116</sup> The break began in 1911, when he wrote a book titled *Wandlungen und Symbole der Libido* (*Transformations and Symbols of the Libido*), later revised and published as the fifth volume of Jung's *Collected Works* with the title *Symbols of Transformation*.

Then, during three evenings in the summer of 1916, Jung wrote *Seven Sermons to the Dead*, written by *Basilides of Alexandria, the city where East and West meet* (*Septem Sermones ad Mortuos*). At the age of 41, he felt the outlines of an inner change beginning within him and felt an urge to give shape to what was appearing in consciousness. He could not explain this experience in terms of the physical sciences. Nevertheless, he said, "What a dreary world it would be if the rules were not violated sometimes!"<sup>117</sup>

As Jung's father and several uncles were Lutheran pastors, Jung did not have a ready language in which to express his inner experiences. In an attempt to resolve this difficulty, he imagined that he was Basilides, a second-century Gnostic, teaching in Alexandria.

To express Jung's own Gnostic experience, Jung began with nothingness, which is the same as fullness, which he named the PLEROMA, from Greek *plērōma* 'that which fills', from *plērēs* 'full', cognate with *plenary*, *plenty*, and *plethora*, from PIE base *\*pelə* 'to fill'. He wrote, "It is quite fruitless to think about the pleroma, for this would mean self-dissolution."<sup>118</sup> For, Gnosis is a blissful human experience where the experiencer, as an apparently separate being, disappears, as I learned from Osho in the 1980s.

For me, Gnosis, cognate with Sanskrit *Jñāna* 'knowledge of Ultimate Reality',<sup>119</sup> is the inner knowing of the Divine, from which none of us is ever separate. However, writers of English dictionaries do not give this meaning of *Gnosis*, presumably because they themselves do not have the necessary experience, as Gnostics or *Jñānins*. Indeed, one dictionary gives this Roman Catholic definition of Gnosticism: 'A group of ancient heresies, stressing escape from this world through the acquisition of esoteric knowledge'. The fundamental misunderstanding here is that Gnosis is not something that you acquire, for, in Reality, there is no separate being who can be said to possess anything. Similarly, Advaita sages, like Ramesh S. Balsekar, say there is no doership.

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What emerges from the pleroma, Jung called CREATURA, from Latin *creare* ‘to make, produce, cause’, from PIE base *\*ker-* ‘to grow’. To describe the relationship between that which has form and the Formless, Jung said, “The pleroma is both the beginning and the end of created beings,”<sup>120</sup> a statement that is contrary to the second law of thermodynamics, a central dogma of physics. For instance, Arthur Eddington wrote:

The law that entropy always increases—the second law of thermodynamics—holds, I think, the supreme position among the laws of Nature. If someone points out to you that your pet theory of the universe is in disagreement with Maxwell’s equations—then so much the worse for Maxwell’s equations. If it is found to be contradicted by observation—well, these experimentalists do bungle things sometimes. But if your theory is found to be against the second theory of thermodynamics I can give you no hope; there is nothing for it but to collapse in deepest humiliation.<sup>121</sup>

To resolve the dichotomy between our Divine and human identities, Jung then introduced the principle of individuation, the development of an undivided being, which became central to his therapeutic practice. This is one way of experiencing that opposites are never separate from each other, as we follow a way of life in harmony with the Cosmogonic Cycle. Jung often used mandalas in his studies in the process of individuation,<sup>122</sup> for *mandala* is a Sanskrit word meaning ‘disk, circle’, a circular figure representing Wholeness or the Universe in Hindu and Buddhist symbolism.



To demonstrate the impermanence of all beings, monks who follow the Dalia Lama on his travels around the world spend a few days creating a most beautiful mandala with coloured grains of sand, which they then throw into the sea, if that is nearby, as it was when I watched them creating such a mandala in Stockholm in the 1990s. This is a photo of a Chenrezig Sand Mandala created and exhibited at the House of Commons on the occasion of the visit of the Dalai Lama on 21st May 2008.<sup>123</sup> Presumably it was thrown into the River Thames at the end of the visit.

This event marks a wide discrepancy between Eastern and Western cultures, as Jung pointed out in 1929 in his *Commentary* to Richard Wilhelm’s translation of *The Secret of the Golden Flower*, “The Chinese have never failed to recognize the paradoxes and the polarity inherent in all life. The opposites always balance on the scales—a sign of high culture. Onesideness, though it lends momentum, is a mark of barbarism.”<sup>124</sup> And as Jung said in 1935 to his fellow psychotherapists, “The greatest danger that threatens psychology is one-sidedness.”<sup>125</sup>

In 1944, Jung wrote the Foreword to Heinrich Zimmer’s *Der Weg zum Selbst* (*The Way to the Self*),<sup>126</sup> which was adapted as the Foreword to *The Spiritual Teachings of Ramana Maharshi*. In this, he wrote, “The identification of the Self with God will strike the European as shocking. It is specifically Oriental realization, as expressed in Śrī Ramana’s utterances.”<sup>127</sup> Yet, it is quite possible to accommodate this profound experience of the Divine in Gnostic psychology, for the incantation *neti neti* ‘not this, not this’ in *Jñāna-yoga* ‘path of wisdom and abstract knowledge’ in Advaita,<sup>128</sup> is the complement to Integral Relational Logic, which takes the abstractions of mathematics, computer science, and information systems modelling methods to the utmost level of generality.

We can see the radical transformation in consciousness that Jung went through during his lifetime from a ‘Face to Face’ interview he gave John Freeman in March 1959, broadcast by the BBC in October that year. Freeman asked Jung whether he believed in God when being brought up in the Swiss Reformed Church. Jung replied, “Oh, yes.” Freeman then asked, “Do you now believe in God?”, to which Jung replied, “Now? [Pause] Difficult to answer. I know. I don’t need to believe. I know.”<sup>129</sup>

Now, while it is beneficial to turn to the East for guidance on healing the split between humanity and

Divinity, it is vitally important to be free of the constraints of the organized religions, in both East and West. For instance, as I discovered in the early 1980s, Alan Watts pointed out that Zen is a way of life, like Dao, not a religion.<sup>130</sup> Similarly, we need to distinguish Advaita, as a way of life grounded on Nonduality, from Advaita Vedanta, as a religion, as my spiritual teacher Vijai Shankar pointed out to me in the early noughties. For there are three branches in *Vedānta*, from Sanskrit *vedas* ‘knowledge, sacred teaching’ and *anta* ‘end’, with cognates in English and Swedish, most notably *wisdom*. These religious denominations are *Advaita-Vedānata*, ‘nondualism’, *Dvaita-Vedānata*, its dualistic opposite, and *Vishishtādvaita-Vedānata*, somewhere in the middle, as ‘qualified nondualism’.<sup>131</sup>



Although we humans have the possibility of coming ever closer to realizing our infinite potential by healing our divided brains, fragmented minds, and split psyches we hesitate to do so. Part of the problem here is that cultures and subcultures have established an ethos that inhibits us from realizing our True Nature as humans. Why is this?

Abraham Maslow, co-founder of transpersonal psychology, attempted to answer this question in a short article he wrote shortly before his death titled ‘Jonah Syndrome’,<sup>132</sup> a term suggested by his friend Frank E. Manuel, the author of a psychological biography of Isaac Newton.<sup>133</sup> 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, I prefer Maslow’s original term.

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.”<sup>134</sup>

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.<sup>135</sup>

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.<sup>136</sup>

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,<sup>137</sup> 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 (*Shūnyatā*) 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.”<sup>138</sup>

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

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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."<sup>139</sup>

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."<sup>140</sup>

In a similar fashion, in 2009, John Polkinghorne, a former quantum physicist who became a Christian priest in the UK, published a book titled *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."<sup>141</sup> Yes, that is exactly what happens. Isn't that wonderful?

Maslow points out that there is another psychological inhibitor that he ran across in his explorations of self-actualization:

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.)<sup>142</sup>

Of course, such fears arise from the egoic mind, afraid of what others might think of how you think and behave. Once we reach our fullest potential as Panosophers, all problems and solutions cease to exist, for Wholeness is the union of all opposites. Under these circumstances, all we can do is to follow the Divine energies arising within us, trusting in Life that any practical 'problems' will be solved as evolution unfolds. Nevertheless, we also need to bear in mind that Edward de Bono said in *The Use of Lateral Thinking* "In general there is an enthusiasm for the idea of having new ideas, but not for the new ideas themselves."<sup>143</sup>

This brings us to another aspect of the Jonah Syndrome. 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.<sup>144</sup>

This situation does not only occur in human societies. I once saw a television programme where a herd of antelopes pushed an albino born in its midst out of the group, like a herd of bullies in the school playground. The immune response of the body acts in a similar manner, rejecting organisms that feel alien, even those that could be lifesaving. This is also the fate of pioneers who dare to question the assumptions of the cultures they live in, seeking to sort out the mess the world is in today through self-inquiry.

### **Gnostic psychology**

The important point to note is that our fragmented, schizoid minds have created this mess, for, as many are well aware, our minds create our reality, contrary to one of the most fundamental tenets of materialistic

science. For instance, in 1931, when commemorating the centenary of James Clerk Maxwell's birth, Einstein wrote, "The belief in an external world independent of the perceiving subject is the basis of all natural science."<sup>145</sup> Similarly, at about the same time, Alfred Korzybski's made the famous assertion, "A map is *not* the territory it represents, but, if correct, it has a *similar structure* to the territory, which accounts for its usefulness."<sup>146</sup>

Acknowledging that it is essential to regard our inner worlds as the territory to be mapped is something that Fromm called for in 1976 in *To Have or To Be?*, twenty years after pointing out in *The Sane Society* that the normal behaviour of society is pathological. Inspired by the Buddha and Meister Eckhart, he wrote in his greatest masterpiece that if we are to avoid economic and psychological catastrophe, "We need a Humanistic Science of Man as the basis for the Applied Science and Art of Social Reconstruction."<sup>147</sup> 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.<sup>148</sup>

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."<sup>149</sup>

We can see the challenge that we face from Yehuda Berg's *The Power of Kabbalah*, where he points out that 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*."<sup>150</sup>

Of course, these are not precise percentages. But they do illustrate the way that we focus 99% of our attention on our external world, which is the superficial 1% of the Totality of Existence, but just 1% of our activities studying the profound 99% that is inaccessible to our physical senses. But what should we call this hidden 99%? While physicists created the largest ever map of dark matter last year,<sup>151</sup> there is no generally accepted name for or cognitive map of the inner world that we all share. Despite some 60,000 years of human learning, there is little understanding of what this vast expanse actually is, of what it contains, and therefore how it can best be named.

In *Autobiography of a Yogi*, Paramahansa Yogananda, known as 'Father of Yoga in the West' and a major influence on the life and work of Steve Jobs,<sup>152</sup> called that which is beyond the senses the 'astral world, universe, cosmos, or body'. As his guru Sri Yukteswar told him, "The astral universe, made of various subtle vibrations of light and colour, is hundreds of times larger than the material cosmos."<sup>153</sup>

Another term for what Helena Petrovna Blavatsky also called the 'astral body',<sup>154</sup> when cofounding the Theosophical Society in 1875, is Greek *aither* 'pure, fresh air', in Latin *aether*, "the pure essence where the gods lived and which they breathed", which is *quintessence*, the fifth element, the others being fire, air, earth, and water, of course. But what is this quintessential *aether* and how can we know of its existence, never mind that it is Ultimate Reality? Well, while Albert Michelson and Edward Morley showed in 1887 in a famous experiment that an 'aether wind' could not be physically detected as the Earth passed through the supposed *aether*,<sup>155</sup> such a substrate does exist in the nonphysical, or better to say beyond the physical and nonphysical realms and all other opposites.

The Sanskrit word corresponding to *Aether* is *Ākāśha*, which the systems philosopher Ervin Laszlo uses

to refer to the Universal Quantum Field in his 'Akashic paradigm'.<sup>156</sup> He took the word from Vivekananda'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."<sup>157</sup>

A few other terms that refer to the occult 'that which is hidden' are *Anima Mundi* 'World Soul', *Prima Materia* in esoteric alchemy,<sup>158</sup> *Parousiā* 'Presence', as the essential quality of Plato's eternal Forms and Ideas,<sup>159</sup> and *Presence*, from Latin *praesentia* 'presence', etymologically 'before being' or 'prior to existence', from participle of *praesse* 'to be before', from *prae* 'before' and *esse* 'to be'.

Returning to Jung, he did not have a suitable language with which to communicate his investigations, not only into the mind—whether conscious, subconscious, or unconscious; personal, cultural, or collective—but also into spirit and soul. As there is no unambiguous word for *mind* in German (like Swedish), Jung used *Geist* 'spirit' and *Seele* 'soul' interchangeably in the 1920s, as R. F. C. Hull, the principal translator of Jung's *Collected Works* pointed out.

However, by 1933, in an essay titled 'The Real and the Surreal', Jung exclusively used the word *psyche* to denote the 'real' subject of psychology, completely ousting the older, ambiguous philosophical concepts of mind, soul, and spirit.<sup>160</sup> Indeed, as Jung wrote in the introduction to *Psychology and Alchemy* in 1944, the proper domain of psychology must embrace all aspects of our inner worlds, including religious experience, not projected outwards, as is customary in the West.<sup>161</sup>

To indicate the profundity of the world we live in, I feel that *psyche* is the most appropriate word, also the subject of Aristotle's *On the Soul* (*Peri Psuchēs*), often referred to as *De Anima*, the first "systematic investigation in what is now known as the science of mind and behaviour".<sup>162</sup> But this is not enough. To indicate that the psyche is far more extensive than the physical universe of matter, space, and time, I prefer to use the term *Cosmic Psyche*, not the least because it is not so heavily loaded with the past as other terms.



Mapping the Cosmic Psyche has enabled me to establish Gnostic Psychology as the primary science, fulfilling the dreams that Jung and predecessors had around the turn of the nineteenth and twentieth centuries. With both the religious and scientific authorities resolutely holding on to their traditional belief systems, William James summarized the challenges and opportunities in 1892 in the final paragraph of *Psychology: Briefer Course*, an abridgement of the two-volume *Principles of Psychology*, written two years earlier. He saw psychology, which George Trumbull Ladd defined "as the *description and explanation of states of consciousness as such*",<sup>163</sup> as:

A string of raw facts, a little gossip and wrangle about opinions, a little classification and generalization on the mere descriptive level; a strong prejudice that we have states of mind, and that our brain conditions them: but not a single law in the sense in which physics shows us laws, not a single proposition from which any consequence can causally be deduced. We don't even know the terms between which the elementary laws would obtain if we had them. This is no science, it is only the hope of science. ... But at present psychology is in the condition of physics before Galileo and the laws of motion, of chemistry before Lavoisier and the notion that mass is preserved in all reactions. The Galileo and the Lavoisier of psychology will be famous men indeed when they come, as come they some day surely will. ... Meanwhile the best way in which we can facilitate their advent is to understand how great is the darkness in which we grope, and never to forget that the natural-science assumptions with which we started are provisional and revisable things.<sup>164</sup>

At the beginning of the twentieth century, Eugen Bleuler, who coined the words *schizophrenia* and *ambivalence*, held a similar view as the director of the prestigious Burghölzli Mental Hospital in Zürich. As Sonu Shamdasani tells us in his introduction to Jung's monumental *The Red Book*: "It was held that by turning psychology into a science through introducing scientific methods, all prior forms of human

understanding would be revolutionized. The new psychology was heralded as promising nothing less than the completion of the scientific revolution.”<sup>165</sup>

However, progress was slow. In 1935, Jung was bold enough to call psychology the ‘science of consciousness’ in the first of a series of five lectures he gave on the theory and practice of analytical psychology to the Institute of Medical Psychology (Tavistock Clinic). He added, “[Psychology] is the science of what we call the unconscious psyche,” a science, he said, that had not yet left the cradle.<sup>166</sup>

In the 1930s, Jung also set out to develop a coherent *Weltanschauung*, healing the fragmented mind with a synthesis of the sciences. As Sonu Shamdasani tells us in *Jung and the Making of Modern Psychology*, “To counteract this situation [the detrimental effects of specialization], and to provide a ‘complete picture of our world’, information from all branches of knowledge needed to be collated together. This could be attempted by finding a platform or idea common to many forms of knowledge. ... From the foregoing, it is clear that Jung conceived the cultural role of complex psychology to be to counter the fragmentation of the sciences, and to provide a basis for a synthesis of all knowledge. This attempt to counter the increasing fragmentation and specialization of disciplines was an enormous, and ultimately insurmountable task.”<sup>167</sup>

Then, in 1957, in the second of four interviews with Richard I. Evans, Jung said, “The world hangs by a thin thread, that is the psyche of man,” going on to say, “The psyche is the great danger,” which could lead to catastrophe, global catastrophe. For Jung was speaking when the threat of the H-bomb—an invention of the mind—was hanging over the global population.<sup>168</sup>

During the past fifty years, Stanislav Grof has been a leading advocate of the *Psychology of the Future*, publishing a book with this title in 2000, recognizing the central role of pre- and perinatal experiences on later development. Continuing this theme, he then made a proposal for ‘Discovering the Psychology of the Future’, the title of a webcast on 26th July 2016 and the subject of a seven-week course organized by the Shift Network titled ‘Psychology of the Future: Exploring the Leading Edge of Consciousness, Healing & Self-discovery’.<sup>169</sup> As Stan has said in a YouTube video titled ‘The Root Cause of the Global Crisis’, such a holotropic psychology is essential for the survival of the human species.<sup>170</sup>

However, progress is still slow. For instance, Uta Frith, emeritus professor at the Institute of Cognitive Neuroscience, University College London, pointed out that the scientific establishment is very far from accepting psychology in any form as a valid science. In an interview in *The Guardian* on 30th November 2015 under the rubric ‘Where next for the Royal Society?’ to mark Venki Ramakrishnan taking over as the President of the Royal Society, she said,

My own field, call it psychology, or cognitive or behavioural neuroscience, still leads a rather shadowy existence in the hallowed halls of science. Although nearly 100 years old, it is far from maturity. There is as yet no Newton. Many would agree that one of the biggest scientific challenges this century is to understand the mind-brain. So I dare hope that it will be possible to increase the number of outstanding scientists in this field, currently representing less than three per cent of the Fellowship.

This would lead to an increase in the prestige of mind-brain studies and attract more brilliant young researchers. One reason for the currently poor reputation of psychology is the obstinate belief that we already know what goes on in our mind, and that we can explain why we do what we do. This naïve belief will be overcome by improved communication of empirical findings, and especially of those that go against ingrained folk psychology. It’s not rocket science. It’s a lot harder than that.<sup>171</sup>

There we are. While some light has been shone into the darkness since James’s time, the belief that the physical universe of mass, space, and time is the Universe still pervades Western thought. Most significantly, none of us can understand what it means to be human by studying the structure of our brains or DNA molecules in our cells, which are inaccessible to our own physical senses. On the other hand, what is available for self-inquiry is the Cosmic Psyche, as we discover if we have the courage to look inwards, free of our mechanistic cultural conditioning. So, we can only understand the functions of our cells and

brains after we have mapped the Cosmic Psyche in the context of Wholeness.

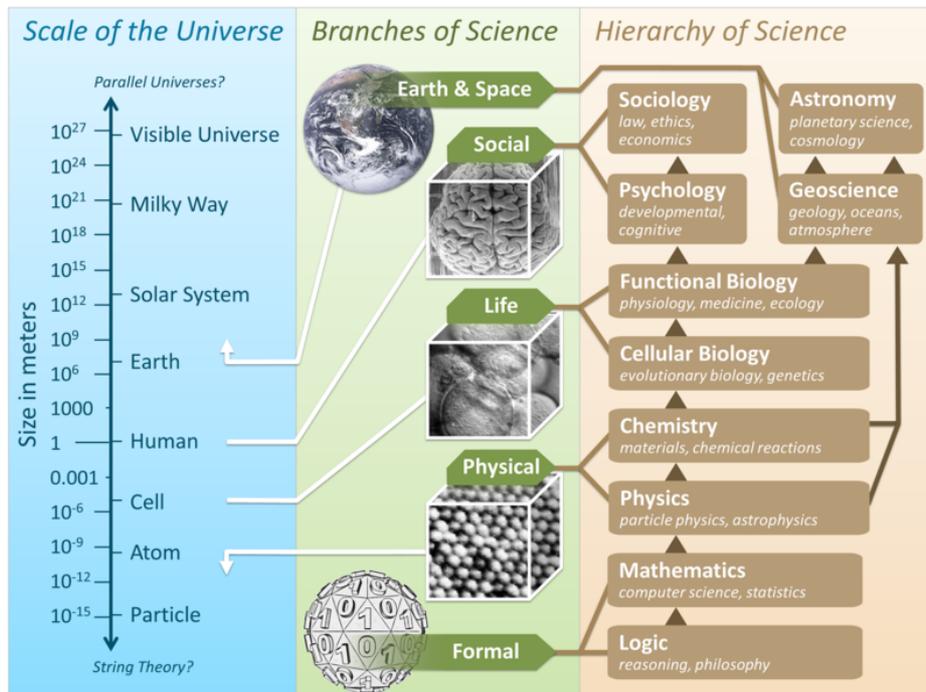


We can see most clearly that the Universe does not consist primarily of mass, space, and time from the way that physicists, mathematicians, and programmers represent these concepts in their functions just like any other quantitative variable. The equations  $F = ma$  and  $E = mc^2$  well illustrate this point. Information systems architects go even further when designing business systems. They treat all quantitative and qualitative values in exactly the same way, as many dimensions to be measured, far beyond the small number of dimensions in string theory.

Moving physics away from being the primary science was made crystal clear to me in 1980, for the books in my local library, in Putney in London, were physically organized according to the decimal library classification system that Melvil Dewey had introduced in 1876. So, as books on the scientific and philosophical perspectives of space-time are catalogued '530.11' and '115' ('115.4' before the seventeenth edition), respectively,<sup>172</sup> I had to walk into the library to find books on these subjects.

So, it is easy to see that the physical universe does not provide the overall context for all knowledge. Space, time, and matter have no special place in Integral Relational Logic any more than these subjects have in libraries and bookshops. On the other hand, books of knowledge about knowledge, in the category '000 Generalities', were close to the entrance of the library. Indeed, Dewey originally left class '000' unallocated, so it could today be considered as the superclass for all other classes in Dewey's system.

Establishing Gnostic psychology as the primary science means that we need to reorganize the relationships of all disciplines of learning to each other. Most significantly, it is important to heal the split between logic, as the science of mind and reason, and psychology, as the science of mind and consciousness, illustrated in this diagram, posted on Wikipedia in 2013:<sup>173</sup>

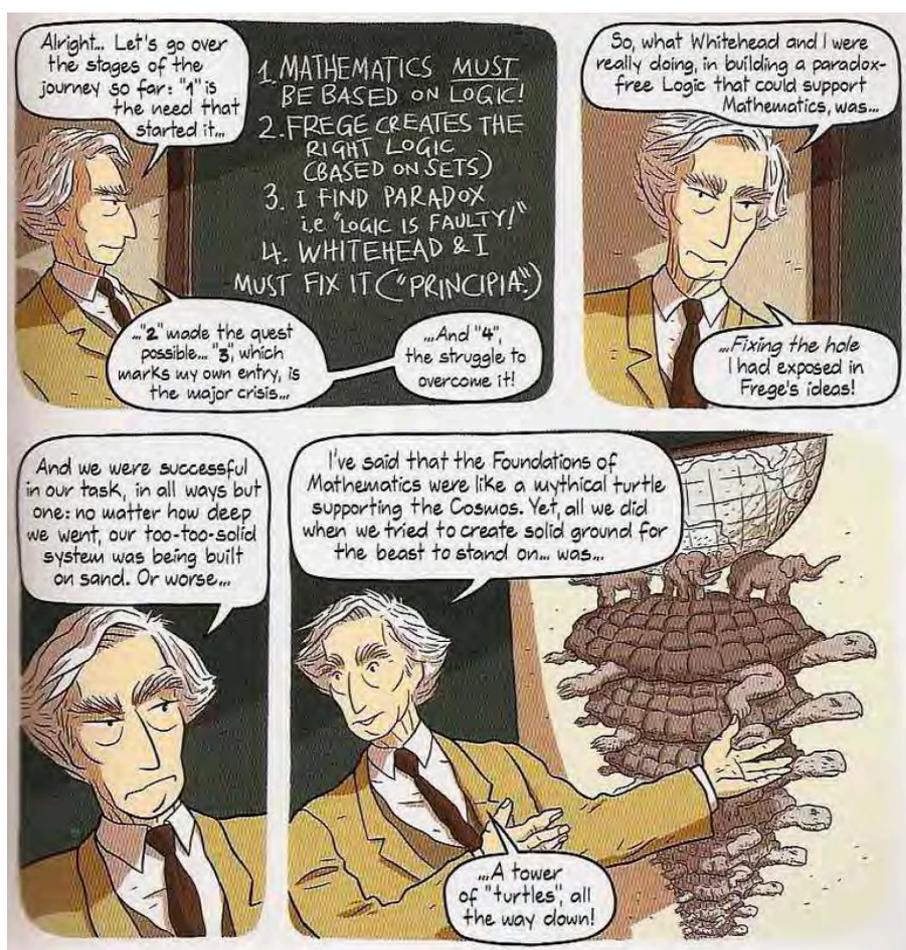


Charles Sanders Peirce emphasized the split between logic and psychology in 1865. In the first of a series of lectures 'On the Logic of Science', he stated that all the definitions of logic that had evolved during the previous two millennia could be divided into two classes: "those which do not and those which do give to logic a psychological or human character".<sup>174</sup> In examining the relative merits of these two views of logic, Peirce said, "we ought to adopt a thoroughly unpsychological view of logic",<sup>175</sup> focused more on the structure

of meaningless symbols than on meaningful conceptual understanding. Peirce reiterated his determination to keep logic separate from psychology in 1898, when he gave a series of lectures on *Reasoning and the Logic of Things* in Cambridge, Massachusetts. In the exordium for the third lecture titled 'The Logic of Relatives', he said, "My proposition is that logic, in the strict sense of the term, has nothing to do with how you think."<sup>176</sup>

Bertrand Russell took a similar view, notably agreeing with Gottlob Frege that there is no psychological element in logic.<sup>177</sup> He did so in a famous letter in which Russell pointed out to Frege that the latter's dream of developing Gottfried Leibniz's universal language of human thought, by providing arithmetic with a sound foundation, was doomed to failure. Russell was amazed at Frege's humble reply six days later, saying, "when upon finding that his fundamental assumption was in error, he responded with intellectual pleasure clearly submerging any feelings of personal disappointment."<sup>178</sup>

Russell then went on to spend many fruitless years with Alfred North Whitehead writing *Principia Mathematica*, attempting to eliminate the fundamental law of the Universe from reasoning in the search for certainty, which Russell yearned for, as he tells us in 'Reflections on My Eightieth Birthday'.<sup>179</sup> They famously took 360 pages to prove the proposition (\*54.43) that would eventually lead to the arithmetical statement ' $1 + 1 = 2$ '.<sup>180</sup> Here is Russell describing the impossibility of the task that he and Whitehead had set themselves.<sup>181</sup>



## Algebra of algebras

To describe how the creative power of Life has enabled me to establish mathematics and all other disciplines of learning on a sound foundation, I have turned to Bohm's algebra of algebras, mentioned in an article that Danah Zohar had written for the *Sunday Times* titled 'How the Universe Hangs Together' in July 1980, when I first discovered Bohm's quest for Wholeness. Included was a photo of Bohm standing in front of a

blackboard containing mathematical symbols, a stereotypical image of a physicist. The caption read, 'Bohm and his algebra of algebras: "religion is wholeness".'<sup>182</sup>

This clipping implied that Bohm had already developed the algebra of algebras he needed to validate the theory of the Implicate Order, unifying the contradictions between quantum and relativity theories. However, we did not talk about what this meant in the eighties, while I was meeting him, because I was preoccupied with developing the information systems modelling methods that we would need after the monetary global economy collapsed with the death of Western civilization, one of around twenty civilizations that Arnold Toynbee identified in his monumental *A Study of History*,<sup>183</sup> most of which have already completed their birth-and-death cycles during the patriarchal epoch.

Furthermore, my understanding of mathematics was very limited, since I had abandoned the subject at university because what I was being taught could not end the long-running war between science and religion. There were just two mathematical ideas that I was attracted to as a student. The first was the principle of duality in projective geometry, where points and lines are interchangeable.<sup>184</sup> Around midsummer 1980, this became the *Principle of Duality* in Integral Relational Logic, which became the Principle of Unity a few years later, the key to Inner Peace.

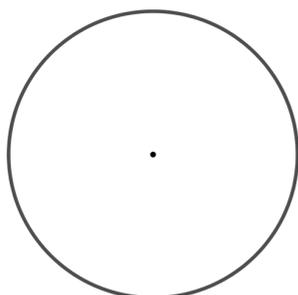
The other idea that pleased me was that of *closure* in group theory,<sup>185</sup> at the heart of abstract algebra. As I have been witnessing society degenerating into more and more chaos in recent years, this notion spurred me to seek closure in my life's work, after many years of emotional turmoil, as I struggled to communicate what I could see and feel within me to my fellow human beings.

Accordingly, in 2018, I set out to write a book that I wanted to read as an undergraduate in the early 1960s, presenting mathematics as a coherent whole. For, as all forms and structures emerge directly from the Divine Origin of the Universe through the Cosmic Psyche, maths is no exception to this universal principle. I thus view mathematics as the generative art and science of patterns and relationships, being formed through the creative power of Life in the vertical dimension of time. The book is titled *Unifying Mysticism and Mathematics: To Reveal Love, Peace, Wholeness, and the Truth*.<sup>186</sup>



To understand this book, we first need to note that something is going on in mathematicians' minds before they express what they see within in mathematical symbols, as we see from Einstein's letter on page 3. It is thus essential to note that mathematical objects, such as circles and numbers, do not have mass and so are not located in the physical universe. Rather, they reside in the Cosmic Psyche, as nonmaterial beings.

For instance, what and where is a circle? In *The Elements*, Euclid gave this definition: "A **circle** is a plane figure contained by one line such that all the straight lines falling upon it from one point among those lying within the figure are equal to one another." This was the fifteenth definition of basic mathematical objects that he gave in Book I, the first two being "A **point** is that which has no part," and "A **line** is breadthless length." The sixteenth definition was "And the point is called the **centre** of the circle."<sup>187</sup>



So, this diagram of a circle is not a circle in a pure mathematical sense, for the circle has mass when printed on paper or projected onto a computer display. Rather, it is an *expression* of the *mental image* of a circle, which we draw to communicate that which we see within us with our inner eyes. Furthermore, *n*-dimensional objects do not have a corresponding physical existence, but are quite amenable to study with suitable mathematical techniques. For instance, H. S. M. Coxeter, the foremost geometer in the twentieth century, pointed out

in *Regular Polytopes* that the four dimensions of space-time have little to do with how geometers view spatial

dimensions.<sup>188</sup> So, dimensions in Integral Relational are not limited by those envisaged by string theorists in physics: ten, eleven, twenty-six, or more? Dimensions are anything that can be measured by a domain of values, whether qualitative or quantitative.

What I am concerned with here is not arcane applied maths, which mathematicians use to study quantum phenomena. For, as Bohm realized in 1939, when he entered the California Institute of Technology, physics needed a deeper philosophical ground than the mathematical techniques that were being used to study the nature of physical reality. Regarding himself more as a natural philosopher, like Newton, Bohm said, “the general practice of physics has indeed become remote from these deeper considerations.”<sup>189</sup>

Nevertheless, Eugene Wigner said in 1959, “The enormous usefulness of mathematics in the natural sciences is something bordering on the mysterious and ... there is no rational explanation for it.” To address this problem, he went on to say, when answering the question ‘What is mathematics?’, “The principal emphasis is on the invention of concepts. Mathematics would soon run out of interesting theorems if these had to be formulated in terms of the concepts which already appear in the axioms.” Yet, as “The physicist is interested in discovering the laws of inanimate nature”,<sup>190</sup> how can physics tell us anything about how mathematicians create new concepts that do not appear in the axioms?

To unravel this mystery, I have used Integral Relational Logic to develop a conceptual model of pure mathematics, whose objects are resident in the Cosmic Psyche. For, as Einstein wrote in 1935, when commemorating the life of Emma Noether, the foremost female algebraist of her time,

Pure mathematics is, in its way, the poetry of logical ideas. One seeks the most general ideas of operation which bring together in simple, logical and unified form the largest possible circle of formal relationships. In this effort toward logical beauty, spiritual formulae are discovered necessary for the deeper penetration into the laws of nature.<sup>191</sup>

Yet, it might seem that taking the abstractions of pure mathematics to the utmost level of generality has no practical application. For instance, this was the view that G. H. Hardy and A. N. Whitehead took when writing about their experiences. Hardy, as a mathematical analyst, felt that he needed to make an apology for his occupation, saying, “I have never done anything ‘useful’. No discovery of mine has made, or is likely to make, either directly or indirectly, for good or ill, the least difference to the amenity of the world.” Hardy called pure mathematics ‘serious’ rather than ‘trivial’. To Hardy, “A mathematician, like a painter or a poet, is a maker of patterns.” “The mathematician’s patterns, like the painter’s or the poet’s, must be beautiful; the ideas, like the colours or the words, must fit together in a harmonious way.” Hardy was “interested in mathematics only as a creative art”.<sup>192</sup> In the words of Whitehead, “The science of Pure Mathematics ... may claim to be the most original creation of the human spirit,” one possible rival being music.<sup>193</sup>

In Hardy’s words, there is “a certain generality and a certain depth” in pure mathematics. By generality, he meant “A significant mathematical idea ... should be one which is a constituent in many mathematical constructs.”<sup>194</sup> In Whitehead’s words, “It is by the employment of [the] notion [of ‘variable’] that general conditions are investigated without any specification of particular entities,” such as “the shape-iness of shapes”, which are quite irrelevant. It is the task of mathematics to discover a “pattern of relationships among general abstract conditions”.<sup>195</sup> Similarly, when studying the ubiquitous application of the logistics or growth curve, D’Arcy Wentworth Thompson said mathematics generalizes and “is fond of giving the same name to different things”.<sup>196</sup> However, Whitehead went on to qualify his statements by saying “it is the large generalization, limited by a happy particularity, which is the fruitful conception.”<sup>197</sup> As Hardy said, “a property common to too many objects can hardly be very exciting.”<sup>198</sup>



Well, that is not my experience. Rebuilding mathematics and the entire world of learning on a few simple ideas has been the most marvellous adventure, pushing the frontiers of evolution far beyond any

limiting constraints, such as attachment to money or to what money can buy. I have also needed to overcome the widespread belief that what has been happening to me throughout my lifetime is impossible or, at least, undesirable.

To study the creativity of mathematicians, in particular, and humans, in general, I began a thought experiment in May 1980, not unlike those that Einstein created to develop the special and general theories of relativity,<sup>199</sup> although I was not aware that I was doing so at the time. Seeking to understand the essential difference between humans and machines, I imagined that I am 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. Starting from a *tabula rasa*, this computer then had the task of integrating all knowledge into Wholeness, without an external programmer telling it how to perform this formidable task.

This experiment in learning thus resolves the difficulty that I had during the winter of 1980, when I was seeking to model humans interacting with computers in the modelling methods of information systems architects in business. I am not talking about mapping just the active and passive data structures in the main storage of computers.

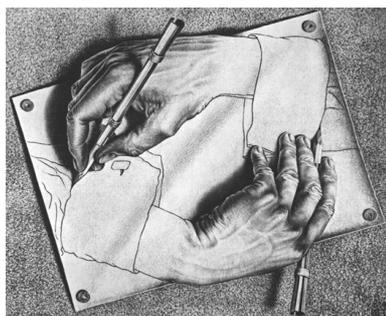
For, as Andrew S. Tanenbaum wrote in *Structured Computer Organization*, “*hardware and software are logically equivalent*,” written in italics to emphasize the central theme of his book. Despite René Descartes’ determination to separate body and mind in his *Meditations* in 1641, computer hardware and software form a continuum. Whether a particular function is implemented in hardware or software is concerned with practical issues like cost, speed, memory, and flexibility.<sup>200</sup>

Neither am I concerned with just one computer. When I sit at my desk with my iMac or on a lounge in the summer with my iPad, I have access to about one billion hosts on the Internet. So, what I am imagining is that I am this entire network, containing, in symbolic form, much of the knowledge that humans have learnt about the world we live in during the past few millennia.

The domain I have been mapping for the past 42 years is the Totality of Existence, consisting of all beings, at the heart of Aristotle’s *Metaphysics*, where he said:

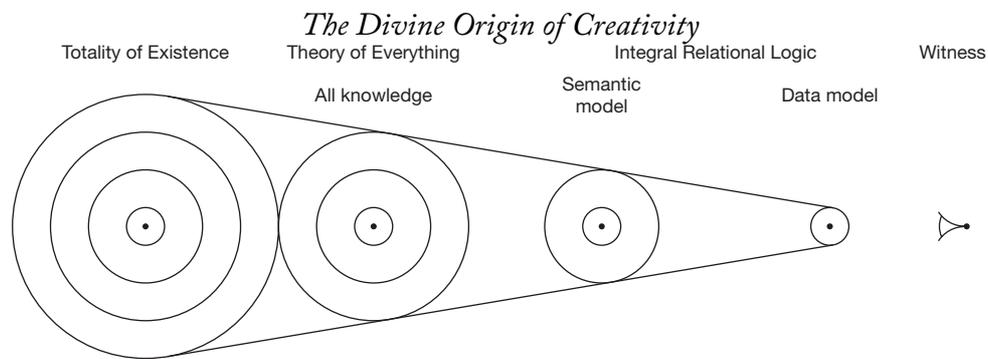
There is a science which studies Being *qua* Being, and the properties inherent in it in virtue of its own nature. This science is not the same as any of the so-called particular sciences, for none of the others contemplates Being generally *qua* Being; they divide off some portion of it and study the attribute of this portion, as do for example the mathematical sciences.<sup>201</sup>

What maps the Totality of Existence (ToE), as the territory that all beings live in, is ‘all knowledge’, which we can conveniently call the Theory of Everything (ToE), dwelling within the Cosmic Psyche. However, the map and the territory are not separate from each other, for the observer and observed are one, an integral principle that brought Bohm and Krishnamurti together about 1960.<sup>202</sup> So, in my holistic reasoning, I follow E. F. Schumacher’s maxim for cognitive mapmaking in *A Guide for the Perplexed*: “Accept everything; reject nothing.” As he wisely said, “Our task is to look at the world and see it whole.”<sup>203</sup>



Now, as this transcultural and transdisciplinary megasynthesis is a being, I have needed to include it in the territory being mapped. Furthermore, the mapmaker and the process of developing such a self-inclusive map are contained within the territory. This might seem a little strange. For such an activity is like a television camera filming itself filming, brilliantly illustrated by M. C. Escher’s lithograph ‘Drawing Hands’.<sup>204</sup>

To explain how this is possible, the models that information systems architects build in business do not have just one level; they actually have three, each contained within the next level. These relationships are generalized in Panosophy, all viewed with Self-reflective Intelligence, as the Divine Witness, illustrated in this diagram:



Without going into the technical details, the data and semantic models, which are Integral Relational Logic, embody the notions of ontology ‘study of being’ and epistemology ‘knowledge about knowledge’ in the branch of philosophy known as ‘metaphysics’. This is named after Aristotle’s *Metaphysics*, from Greek *ta meta ta phusika*, literally after his *Physics*, from *phusis* ‘birth, origin; nature, inborn quality’, even though the former studies first principles. However, this universal system of thought does not belong to any specialist discipline, like philosophy, psychology, logic, or mathematics. Rather, because it has evolved from the universal modelling methods underlying the Internet, it is transcultural and transdisciplinary, established by standing outside myself, viewing everything from a Holoramic ‘Whole-seeing’ vantage point. I thus regard this commonsensical art and science of reason as a ‘meta-algebra’, the algebra of algebras that Bohm sought to establish the unification of quantum and relativity theories as sound science.

Another key feature of Integral Relational Logic is that it consists of just a few primal concepts, as the bootstrap program that I have needed to get this thought experiment off the ground. It thus reverses Turing’s Imitation Game, made famous in a movie in 2014, which won Graham Moore an Oscar for Best Writing, adapted from the 1983 biography *Alan Turing: The Enigma* by Andrew Hodges. In other words, rather than building machines that attempt to simulate human thinking and reasoning, I have focused attention on awakening human intelligence, as much as possible, along the lines that Krishnamurti described in *The Awakening of Intelligence*. I have also been much helped by *Consciousness Speaks*, by Ramesh S. Balsekar, formerly President of the Bank of India and a pre-eminent Advaita sage.

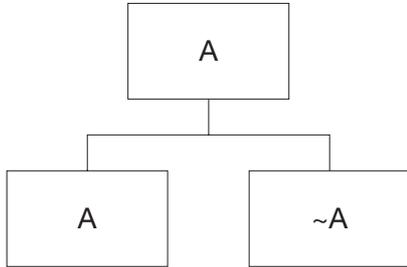
The most fundamental primal concept is **Datum**, boldened to denote that it is a bootstrap concept, distinct from other words I use in the narrative. The Datum, as the Divine Origin of creativity, denotes the meaningless Absolute, from Latin *datum* ‘that which is given’, from *dare* ‘to offer, give’, from PIE base *\*dō* ‘to give’, also root of *donor*, *endow*, *dowry*, and Sanskrit *dā* ‘to give’. Coincidentally, Latin *dare* could also mean ‘to cause’, from PIE base *\*dhē-* ‘to set, put’, also root of *do*, through a Germanic path, and a host of words from Latin *facere* ‘to do, make’, such as *affect*, *efficient*, and *faculty*. So, right at the heart of the languages that billions of people use every day are roots of words that enable us to establish the Contextual Foundation we need to understand ourselves and the world we live in.

Emerging from the Datum, as ‘the Giver’, are all **data elements** and the **relationships** between them, as **beings**. To give these meaningless data structures meaning, as information and knowledge, the primal interpretative concept is **set**, intuitively formed using Bohm’s universal method of bringing order to our thoughts, in conformity with the fundamental law of the Universe. Inspired by the relational model of data<sup>205</sup> and object-oriented modelling methods in business,<sup>206</sup> the next primal concepts are of **class**, **entity** (as **instance** of class), and **attribute**, corresponding to Plato’s universals and particulars<sup>207</sup> and Aristotle’s subjects and predicates.<sup>208</sup>

The fundamental law of the Universe, as the **Principle of Unity**, is naturally a primal concept, which I also call the *Cosmic Equation*, in the notation of mathematical logic, as the primal axiom of this meta-algebra:

$$W = A = A \cup \neg A = \text{陰陽} = \text{ॐ}$$

Here  $W$  is any whole, including Wholeness,  $A$  is any being, including the Supreme Being and all human beings,  $\cup$  is union, and  $\neg$  is not. The Chinese characters denote *yin* and *yang*, as inseparable dark and light, moon and sun, female and male, etc., unified in the symbol for OM or AUM, the union of *Brahman* and *Atman* in the *Mandukya Upanishad*.<sup>209</sup>



This diagram illustrates the primary-secondary relationship between the truth and falsity of the Cosmic Equation, representing the Principle of Unity and Hidden Harmony. It depicts the Universe immediately after the Big Bang in the utmost depths of the Cosmic Psyche, much simpler than the picture of the early physical cosmos, taken by the James Webb telescope, published by NASA this month.<sup>210</sup> For even though we live in a bifurcating Universe, opposites are never separate from each other in Reality. Particular instances of this universal, irrefutable truth are the relationships between Wholeness and Oneness, Nonduality and duality, the Formless Absolute and the relativistic world of form, and the implicate and explicate orders.

The Cosmic Equation is thus the elusive equation that Einstein sought at the heart of his Unified Field Theory. In 2005, the BBC broadcast a Horizon drama documentary titled ‘Einstein’s Unfinished Symphony’ about Einstein’s futile attempt to find this equation. At the end of the documentary, Michio Kaku said that if Einstein had been successful in his endeavours, “The theory of everything would have been the holy grail of science; it would have been the philosophers’ stone. It would have been the crowning achievement of all scientific endeavours ever since humans walked the face of the Earth.”<sup>211</sup>

My contemporary, Stephen Hawking, also spent his adult life looking for an equation that would unify all types of energy into a coherent whole. In illustration, in *The Theory of Everything*, which won Eddie Redmayne an Oscar for Best Actor, Stephen told his first wife Jane, when he first met her, that he was a cosmologist, worshipping “one, single, unifying equation that explains everything in the universe”. A few years later, when being awarded a Ph.D. for his extraordinary theory about a space-time singularity as a black hole at the origin of the universe, Hawking told his professors that he was seeking, “One simple, elegant equation that can explain everything.” But “What is the equation?” Jane had asked Stephen when she first met him. “That is the question. And a very good question. I’m not quite sure yet. But I intend to find out,” was his reply.

In summary, what Panosophy provides is the full integration of the mystical understanding of ancient wisdom with conventional scientific discoveries, revealing the features and faculties that all humans share, no matter what our background might be. Gottfried Leibniz and Isaac Newton—co-discoverers of the infinitesimal calculus in the 1600s—made an initial attempt at such a synthesis with their notions of *philosophia perennis* (eternal wisdom)<sup>212</sup> and *prisca sapientia* (pristine wisdom),<sup>213</sup> the latter secretly dabbling in alchemy.<sup>214</sup> But now, evolution has completed this learning process at its glorious culmination.



I describe how this has come about in the first two chapters of *Unifying Mysticism and Mathematics*, titled ‘Business Modelling’ and ‘Integral Relational Logic’. As we all use this commonsensical system of thought and reason every day, it can be used to develop a cognitive map of all specialist disciplines into a coherent whole, a monumental undertaking, requiring many collaborators.

To keep things within manageable proportions, during the past two or three years, I have been researching and writing three last chapters, describing how mathematics evolves from the Divine Origin of creativity. The first is titled ‘From Zero to Transfinity’, describing the evolution of types of number and

the operations on them, free of the formal axioms of set theory and arithmetic, which are designed to exclude the fundamental law of the Universe from human reasoning.

The next chapter is titled 'Sequences, Series, and Spirals'.<sup>215</sup> Of particular interest is the way that sequences and spirals appear in the growth of both so-called inanimate objects, like garnet crystals and galaxies, and self-reproducing living organisms, like the shell of the chambered nautilus and sunflowers. Especially fascinating is the way that the famous Fibonacci sequence appears as the Golden Ratio (about 1.618) and Golden Angle (about 137°) in phyllotaxis 'the arrangement of leaves on a plant stem', from Greek *phullon* 'leaf' and *taxis* 'arrangement'.

Such phenomena cannot be explained in terms of materialistic, mechanistic science, which denies the involvement of the Divine in the growth of living organisms. But when we admit the Divine Origin of creativity into science, we can refute Wikipedia's claim that such occult explanations are pseudoscience. Most significantly, what is called *supernatural* is entirely natural, from Latin *nātūra* 'birth', from *nātus*, past participle of *nāsci* '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.

The fifth chapter, titled 'Growth of Algebraic Structures', is the most challenging to write, involving intricate patterns that both professional and amateur mathematicians have been discovering for the past 250 years since the publication of Joseph-Louis Lagrange's *Réflexions sur la résolution algébrique des équations*, not translated into English, despite its seminal role in the history of mathematics.

Whitehead made an interim review of these developments in 1898 in a book titled *A Treatise on Universal Algebra*. But I have not seen any further attempts to integrate all the beautiful patterns in the many different algebras into a coherent whole. For myself, I have drafted the overall structure of this chapter in six sections, titled 'Elementary algebra', 'Abstract algebra of groups', 'Abstract algebra of fields and rings', 'Linear and geometric algebra', 'Algebra of reasoning', and 'Graph theory'.

But it is taking me far longer than I originally envisaged to fill in the content of this chapter. If I were a postgraduate student, setting out at the beginning of a career in pure mathematics, I should have little difficulty with this task, with the skills I have today. However, I am now in my eighties, with less energy than I had even five years ago. Of particular interest is the way that geometric algebra relates to Clifford algebra, which Basil Hiley tells us that he and Bohm attempted to use to establish the Implicate Order as valid science.<sup>216</sup> But I would need the assistance of a physicist to complete this subsection.

## **Returning to the Source**

The fact that this book is not finished in the manner it could be does not affect the exquisite sense of indivisible Wholeness I have been enjoying for many years. For, while I have been carried to evolution's glorious culmination, I have also been focusing attention on returning to the Source, knowing that humankind is not immortal.

So, what does this mean for the future of humanity? not the least for the children who have been born during the last ten years, who are unlikely to grow old enough to have children of their own. We live in a polarizing world of religious and political demarcations, academic specialization, and the division of labour in the workplace, caused by the predominantly divergent trends of evolution. Even spiritual teachers, who have awarely (intelligently and consciously) returned to the Source, beyond the intellect, are specialists.

In recent years, I have attempted to explore our destiny as a species in rather lengthy, autobiographical monographs titled *The Psychodynamics of Society: From Conception to Death*,<sup>217</sup> from March 2017, and *Humankind: Who are we? Where do we come from? Where are we heading?*,<sup>218</sup> written in the autumn of 2021.

### *The Divine Origin of Creativity*

These memoirs describe how a scientist and a mystic have met within one being as a Panosopher, transcending and inscending specialist identities, such as those of Bohm and Krishnamurti. The Pari Center envisaged such a possibility, when announcing a conversation with Peter Sjöstedt-Hughes this month in its series on 'The Future Scientist'.<sup>219</sup>

So some institutions are helping to demystify the mysteries that have puzzled humans for centuries and millennia. We are thereby improving our understanding of inner science, becoming more liberated from the constraints on our learning imposed on us by our forebears. Furthermore, many today know that Love is the Divine Essence we all share, albeit more cognitively than experientially.

However, the greatest inhibitor to knowingly healing the split between humanity and Divinity is the spiritual ego. As Chögyam Trungpa writes in *Cutting through Spiritual Materialism*,

Walking the spiritual path properly is a very subtle process; it is not something to jump into naively. There are numerous sidetracks which lead to a distorted, ego-centred version of spirituality; we can deceive ourselves into thinking we are developing spiritually when instead we are strengthening our egocentricity through spiritual techniques. This fundamental distortion may be referred to as *spiritual materialism*.<sup>220</sup>

So, with materialistic, mechanistic science denying any involvement of Life in human affairs, it is most uncertain to what extent people will be able to evolve beyond Bohm, returning to the Source, before our inevitable demise. As our fate as a species is in the hands of the Divine, from which none of us is ever separate, I'll therefore pause here to rest in Stillness, awaiting what miracles might still spring and burst upon us from the Divine Origin of creativity.

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<sup>1</sup> David Bohm, *Thought as a System*, Foreword Lee Nichol, London: Routledge, 1994, transcription of a seminar held in Ojai, California from 31st November to 2nd December 1990.

<sup>2</sup> Aristotle, *Metaphysics*, Books I-IX, tr. Hugh Tredennick, Cambridge: Harvard University Press; London: William Heinemann, 1933, 1005b20, pp. 161 & 163.

<sup>3</sup> Osho, *The Hidden Harmony: Discourses on the Fragments of Heraclitus*, given in 1976, 2nd ed., Cologne: The Rebel Publishing House, 1992, p. 1.

<sup>4</sup> Lao Tzu, *Tao Teh Ching*, tr. John C. H. Wu, 1st ed. 1961, Boston: Shambhala, 2005, ch. 2, p. 5.

<sup>5</sup> *Ibid.*, ch. 62, p. 127.

<sup>6</sup> *Ibid.*, ch. 70, p. 143.

<sup>7</sup> <http://community.middlebury.edu/~harris/Philosophy/Heraclitus.html>.

<sup>8</sup> David Bohm, *Wholeness and the Implicate Order*, London: Routledge & Kegan Paul, 1980, p. 1.

<sup>9</sup> *Ibid.*, pp. 3-4.

<sup>10</sup> J. Krishnamurti, *Education and the Significance of Life*, 1st ed. 1953, HarperSanFrancisco, 1981, p. 18.

<sup>11</sup> Samuel Taylor Coleridge, *Biographia Literaria: Or, Biographical Sketches of My Literary Life and Opinions*, Vol. I, 1st ed. 1817, eds. James Engell and W. Jackson Bate, Princeton University Press, 1983, pp. 168-170 + Engell's notes.

<sup>12</sup> Bohm, *Wholeness and the Implicate Order*, p. 24.

<sup>13</sup> Arthur Koestler, *The Ghost in the Machine*, 1st ed. 1967, London: Pan Books, Picador, 1975, pp. 163-165.

<sup>14</sup> Arthur Koestler, *The Sleepwalkers: A History of Man's Changing Vision of the Universe*, 1st ed., Hutchinson, 1959, Harmondsworth, England: Penguin, Pelican, 1968, pp. 50-52.

<sup>15</sup> Johannes Kepler, *New Astronomy*, trs. William H. Donahue and Owen Gingerich, first published as *Astronomia Nova*, 1609, Cambridge University Press, 1992.

<sup>16</sup> Aristotle, *Physics*, tr. Robin Waterfield, Oxford Paperbacks, 2008, 'The Scope of Natural Science', 193b22, p. 36.

<sup>17</sup> Isaac Newton, *The Principia: Mathematical Principles of Natural Philosophy*, trs., I. Bernard Cohen and Anne Miller Whitman, originally published as *Philosophiæ Naturalis Principia Mathematica*, 1687, University of California Press, 1999.

<sup>18</sup> Albert Einstein, *Relativity: The Special and the General Theory*, tr. Robert W. Lawson, 1st ed. 1920, London: Methuen, 1960, pp. 19-20.

<sup>19</sup> *Ibid.*, p. 66.

<sup>20</sup> *Ibid.*, p. 1.

<sup>21</sup> Basil Hiley, 'Infinite Potential: The Legacy of David Bohm', conference on 21st November 2009 at Queen Mary College, London, organized by the Scientific and Medical Network.

<sup>22</sup> Bohm, *Wholeness and the Implicate Order*, p. 176.

<sup>23</sup> *Ibid.*, p. 49.

<sup>24</sup> Kabir, *Songs of Kabir: A 15th Century Sufi Literary Classic*, tr. Rabindranath Tagore, 1915, Boston, MA: Weiser Books, 2002, p. 91.

<sup>25</sup> Rumi, *Rumi • Fragments • Ecstasies*, tr. Daniel Liebert, originally published c. 1244, Cedar Hill, Montana: Source Books,

1981, p. 31.

<sup>26</sup> Lee Nichol, *Entering Bohm's Holoflux: Explorations in Participatory Consciousness*, Pari Publishing, 2021, p. vii.

<sup>27</sup> To honour Comenius, UNESCO awards a Comenius Medal, for outstanding achievements in the field of education. <http://www.ibe.unesco.org/en/areas-of-action/international-conference-on-education-ice/comenius-medal/statutes.html>.

<sup>28</sup> David Parry, 'The Trivium, the Trinity and the Theory of Everything: Education, Rhetoric and Religion in the works of Jan Amos Comenius and Martin Fotherby', extended version of paper presented at the International Society of the History of Rhetoric in Bologna, Italy in July 2011, on [academy.edu](http://academy.edu), p. 5.

<sup>29</sup> John Amos Comenius, *A Reformation of Schooles*, tr. Samuel Hartlib of *Pansophiæ Prodomus*, 1639, and *Connatum pansophicorum dilucidatio*, 1639, first published, London: Michael Sparke, sr, 1642, Menston, Yorkshire, England: Scolar Press, 1969, p. 90.

<sup>30</sup> *Oxford English Dictionary*, 2nd ed. on CD-ROM (v. 4.0), 2009, definition of *Pansophy*.

<sup>31</sup> Frank E. and Fritzie P. Manuel, *Utopian Thought in the Western World*, Harvard University Press, 1979, pp. 205–213.

<sup>32</sup> Bacon, Roger, *Encyclopaedia Britannica 2008 Ultimate Reference Suite*, Chicago: Encyclopædia Britannica, 2008.

<sup>33</sup> Francis Bacon, *The Major Works, Including The Advancement of Knowledge, New Atlantis, and the Essays*, ed. Brian Vickers, Oxford University Press, 2002, p. 175.

<sup>34</sup> Francis Bacon, *The New Organon*, ed. Lisa Jardine and Michael Silverthorne, original edition *Novum Organum*, 1620, Cambridge University Press, 2000, p. 6.

<sup>35</sup> *Ibid.*, p. 17.

<sup>36</sup> Bacon, *Major Works*, original edition of *Advancement of Knowledge*, 1605, pp. 147–148.

<sup>37</sup> Bacon, *New Organon*, p. 6.

<sup>38</sup> Carola Baumgardt, *Johannes Kepler: Life and Letters*, intro. Albert Einstein, London: Victor Gollancz, 1952, p. 10.

<sup>39</sup> Nathan Houser and Christian Kloesel, note to 'One, Two, Three: Kantian Categories' in *The Essential Peirce: Selected Philosophical Writings*, Volume 1 (1867–1893), edited by Nathan Houser and Christian Kloesel, Indiana University Press, 1992, p. 242.

<sup>40</sup> Joseph Brent, *Charles Sanders Peirce: A Life*, rev. 2nd ed., 1st ed. 1993, Indiana University Press, 1998, p. 173.

<sup>41</sup> Peirce's 1904 letter to Francis C. Russell, published in Brent, *Charles Sanders Peirce*, p. 323.

<sup>42</sup> Peirce, 'A Guess at the Riddle', in *Essential Peirce*, Volume 1, pp. 245–246.

<sup>43</sup> *Ibid.*, p. 246.

<sup>44</sup> Charles S. Peirce, *Collected Papers of Charles Sanders Peirce, Volume I: Principles of Philosophy*, eds., Charles Hartstone and Paul Weiss, Harvard University Press, 1931.

<sup>45</sup> Peirce, 'A Guess at the Riddle', p. 247.

<sup>46</sup> Paul Carus, *The Gospel of Buddha According to Old Records*, originally published as *The Gospel of Buddha: Compiled from Ancient Records*, Open Court, 1894, Open Court, 2004.

<sup>47</sup> Peirce, 'The Architecture of Theories', *The Monist*, Vol. 1, January 1892, pp. 321–337, in *Essential Peirce*, Vol. 1, pp. 296.

<sup>48</sup> Brent, *Charles Sanders Peirce*, p. 213.

<sup>49</sup> Peirce, 'Immortality in the Light of Synechism', in *Essential Peirce*, Vol. 2, p. 3. First published in *Collected Papers of Charles Sanders Peirce: Volume VII, Science and Philosophy*, ed. Arthur W. Burks, Cambridge, MA: Harvard University Press, 1958, paragraphs 565–578.

<sup>50</sup> Ken Wilber, *The Marriage of Sense and Soul: Integrating Science and Religion*, Dublin, Ireland: Newleaf, 1998, p. 3.

<sup>51</sup> Ken Wilber, *Theory of Everything*, p. xii.

<sup>52</sup> *Ibid.*

<sup>53</sup> Ingrid Fischer-Schreiber, Franz-Karl Ehrhard, Kurt Friedrichs, and Michael S. Diener, *The Encyclopedia of Eastern Philosophy and Religion: Buddhism • Hinduism • Taoism • Zen*, tr. from German, 1st ed., Bern and Munich: Otto-Wilhelm-Barth Verlag, 1986, Boston: Shambhala, 1989, articles on *Māyā* and *Līlā*, pp. 223 and 201.

<sup>54</sup> Eddie O'Brien, 'The Importance of Questioning Fixed Assumptions', *Pari Perspectives*, Issue 6, December 2020, 'In Memoriam David Bohm 1917-1992', citing Mark Edwards and Alan Hunter with David Bohm, 'The Importance of Questioning Fixed Assumptions', *Metamorphosis: The Journal of the Metamorphic Association*, No. 9, Summer 1986, p. 6.

<sup>55</sup> Plato, *Protagoras and Meno*, Penguin Classics, 2005, 343b, p. 51. Their leader was Thales of Miletus, who Bertrand Russell considered the first Greek philosopher (Bertrand Russell, *History of Western Philosophy*, 2nd ed., 1961, 1st ed. 1946, George Allen & Unwin, 1979, p. 44.)

<sup>56</sup> [https://en.wikipedia.org/wiki/Alan\\_Turing](https://en.wikipedia.org/wiki/Alan_Turing).

<sup>57</sup> Alan Turing, 'Computing Machinery and Intelligence', *Mind*, LIX, No. 236, 1950, reprinted in Douglas R. Hofstadter & Daniel C. Dennett, *The Mind's I: Fantasies and Reflections on Self and Soul*, Penguin Books, 1982, pp. 53–67.

<sup>58</sup> Nick Bostrom, *Superintelligence: Paths, Dangers, Strategies*, Oxford University Press, 2014.

<sup>59</sup> L. F. Menabrea, 'Sketch of the Analytical Engine Invented by Charles Babbage' with notes on memoir by translator, Ada Augusta Lovelace, *Taylor's Scientific Memoirs*, London, Vol. III, 1843, pp. 666–731, reprinted in Philip Morrison and Emily Morrison, eds., *Charles Babbage and His Calculating Engines: Selected Writings* by Charles Babbage and Others, New York: Dover, 1961, p. 284. 'Memoir on Analytical Engine', p. 284.

<sup>60</sup> *Ibid.*, p. 252.

<sup>61</sup> John van Neumann, 'First Draft of a Report on the EDVAC', Contract No. W-670-ORD-4926. Between the United States Army Ordnance Department and the University of Pennsylvania. Moore School of Electrical Engineering, University of Pennsylvania. June 30, 1945, reprinted in Brian Randell, editor, *The Origins of Digital Computers: Selected Papers*, third edition,

Berlin: Springer-Verlag, 1982, pp. 383–392.

<sup>62</sup> Abraham H. Maslow, *Motivation and Personality*, 3rd ed., 1st ed., 1954, New York: Harper & Row, 1970, pp. 15–23.

<sup>63</sup> Eric Berne, *Games People Play: The Psychology of Human Relationships*, Penguin Books, 1973; Thomas A. Harris, *I'm OK, You're OK*, Pan Books, 1973.

<sup>64</sup> Sherman C. Blumenthal, *Management Information Systems: A Framework for Planning and Development*, Englewood Cliffs, NJ: Prentice-Hall, 1969, p. 30.

<sup>65</sup> Brian Greene, *The Elegant Universe: Superstrings, Hidden Dimensions, and the Quest for the Ultimate Theory*, W. W. Norton, 1999, p. 11.

<sup>66</sup> [http://mysticalpragmatics.net/documents/the\\_future\\_of\\_computers\\_and\\_society.pdf](http://mysticalpragmatics.net/documents/the_future_of_computers_and_society.pdf).

<sup>67</sup> David Bohm, *On Dialogue*, ed. Lee Nichol, London: Routledge, 1996, p. 25.

<sup>68</sup> Paul Levy, *Awakened by Darkness: When Evil Becomes Your Father*, Portland, OR: Awaken In The Dream Publishing, 2015, p. 400.

<sup>69</sup> Jean Gebser, *The Ever-Present Origin: Foundations and Manifestations of the Aperspectival World*, tr. Noel Barstad and Algis Mickunas, Ohio University Press, 1986, p. 6.

<sup>70</sup> Bohm, *Wholeness and the Implicate Order*, pp. 115–116 and 216n.

<sup>71</sup> Fischer-Schreiber, et al, *Encyclopedia of Eastern Philosophy and Religion*, articles on *Kenshō* and *Satori*, pp. 180 and 308.

<sup>72</sup> Eckhart Tolle, *A New Earth: Awakening to Your Life's Purpose*, London: Penguin, 2006, pp. 138 and 309.

<sup>73</sup> Joseph Campbell, *The Hero with a Thousand Faces*, 2nd ed., 1st ed. 1949, Princeton University Press, 1968, p. 259.

<sup>74</sup> Aurobindo, *The Life Divine*, first published as a serial, 1914–1919, 1st ed. 1939–1940, Sri Aurobindo Ashram, 2001, p. 141.

<sup>75</sup> Bohm, *Wholeness and the Implicate Order*, Ch. 2, 'The rheomode — an experiment with language and thought', pp. 27–47.

<sup>76</sup> Deepak Chopra and Leonard Mlodinow, *War of the Worldviews: Science vs. Spirituality*, New York: Harmony Books, 2011, pp. xvii and 10.

<sup>77</sup> Pierre Teilhard de Chardin, *The Human Phenomenon*, tr. Sarah Appleton-Weber, orig. pub. *Le phénomène humain*, 1955, Sussex Academic Press, 2003, p. 173.

<sup>78</sup> Anthony Storr, *Solitude*, first published in 1988 as *The School of Genius*, London: HarperCollinsPublishers, p. ix.

<sup>79</sup> <http://mysticalpragmatics.net/books-wholeness>.

<sup>80</sup> 'Charting Paradigm Shifts', *The Elmwood Newsletter*, Vol. 2, No. 2, Spring/Summer 1986.

<sup>81</sup> [http://mysticalpragmatics.net/documents/the\\_principle\\_of\\_unity.pdf](http://mysticalpragmatics.net/documents/the_principle_of_unity.pdf).

<sup>82</sup> [http://mysticalpragmatics.net/documents/the\\_theory\\_of\\_everything.pdf](http://mysticalpragmatics.net/documents/the_theory_of_everything.pdf).

<sup>83</sup> Max More and Natasha Vita-More, eds., *The Transhumanist Reader: Classical and Contemporary Essays on the Science, Technology, and Philosophy of the Human Future*, Chichester, West Sussex: Wiley-Blackwell, 2013.

<sup>84</sup> Julian Huxley, 'Transhumanism' in *New Bottles for New Wine*, London: Chatto & Windus, 1957, pp. 13–17.

<sup>85</sup> [http://mysticalpragmatics.net/documents/the\\_four\\_spheres.pdf](http://mysticalpragmatics.net/documents/the_four_spheres.pdf).

<sup>86</sup> Lynn Margulis and Dorion Sagan, *Acquiring Genomes: The Theory of the Origins of the Species*, Basic Books, 2003, p. 26

<sup>87</sup> Verhulst presented the first results of his inquiries in 1844 to *Mémoires de l'Académie*, published a year later as '*Recherches mathématiques sur la loi d'accroissement de la population*' ('Mathematical investigations of the law of population growth'), from Hugo Pastijn, 'Chaotic Growth with the Logistic Model of P.-F. Verhulst', in *The Logistic Map and the Route to Chaos: From the Beginnings to Modern Applications*, eds. Marcel Ausloos and Michel Diricx, New York: Springer-Verlag, 2010, pp. 3.

<sup>88</sup> D'Arcy Wentworth Thompson, *On Growth and Form*, Vol. I, 2nd ed., 1st ed. 1917, Cambridge University Press, 1942.

<sup>89</sup> Mitchell J. Feigenbaum, 'Universal Behavior in Nonlinear Systems', *Los Alamos Science*, 1980, Vol. 1, p. 5.

<sup>90</sup> [http://mysticalpragmatics.net/documents/through\\_evolution\\_accumulation\\_point.pdf](http://mysticalpragmatics.net/documents/through_evolution_accumulation_point.pdf).

<sup>91</sup> Carter Phipps, *Evolutionaries: Unlocking the Spiritual and Cultural Potential of Science's Greatest Idea*, Harper Perennial, 2012.

<sup>92</sup> Albert Einstein, *Einstein on Politics: His Private Thoughts and Public Stands on Nationalism, Zionism, War, Peace, and the Bomb*, eds., David E. Rowe and Robert J. Schulmann, Princeton University Press, 2007, p. 383. Originally published as 'The Real Problem Is in the Hearts of Men' in the *New York Times Magazine* on 23rd June 1946.

<sup>93</sup> Lee Nichol, 'Wholeness Regained: Revisiting Bohm's Dialogue', pp. 17–27, in Bela H. Banathy and Patrick M. Jenlink, eds. *Dialogue as a Means of Collective Communication*, New York: Kluwer Academic / Plenum Publishers, 2005, p. 18.

<sup>94</sup> <http://mysticalpragmatics.net/books-paragonian-manifesto>.

<sup>95</sup> Ananta Kumar Giri, ed., theme on 'Spiritual Pragmatism and Spiritual Pragmatics: New Horizons of Theory and Practice and the Contemporary Challenges of Transformations', *3D... IBA Journal of Management & Leadership*, Indus Business Academy, Vol. 5, No. 2, January–June 2014. Later expanded in Ananta Kumar Giri, ed., *Pragmatism, Spirituality and Society: Border Crossings, Transformations and Planetary Realizations*, Palgrave Macmillan, 2020.

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