The Evolution of Universals

Being a Universal Human

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Abstract. By using the Internet to mirror our minds, this essay describes how we can bring all our thoughts into universal order, healing the fragmented, deluded mind in Ineffable, Nondual Wholeness. The evolution of universals during the past few millennia thus reaches its glorious culmination, enabling us to rise above the level of machines with so-called artificial intelligence, realizing our fullest potential as a superintelligent, superconscious species.

When we look at mental evolution in the noosphere—in contrast to the evolution of the species in the biosphere—we see ever-broadening conceptual abstraction, giving us humans ever-greater power. For when we learn how to solve general problems, a host of specific problems can be solved as examples of the general ones. Indeed, as George Pólya wrote in *How to Solve It*, general problems in mathematics are often easier to solve than specific ones, stripped of distracting details,[1] a guiding principle that applies equally in life, in general.

This essay outlines how evolution is carrying humanity to the utmost level of conceptual abstraction and generality, leading to a quite new species in the noosphere, able to solve any particular problem presented to us, including the most challenging, existential problem of all, that of the death of our species. We can call this emerging species *Homo universalis*, one of several names that Barbara Marx Hubbard, founder of the Foundation for Conscious Evolution, has suggested.[2] For *ūniversālis* in Latin meant 'general, universal', cognate with *universe* and *university*, literally 'turned into one, entire whole'.

In this essay, we begin by looking at the unfamiliar, yet commonsensical concepts of universals and particulars, absolutely essential if evolution is to become fully conscious of itself within us humans. We look especially at the way that Plato viewed these fundamental concepts, at a comparatively early stage of phylogenetic noogenesis—the mental evolution of the human race as a whole. Mathematics and science then evolved from Greek philosophy and logic with increasing conceptual abstraction, leading Alan Turing to design a 'Universal Machine', which led to the invention of the ubiquitous stored-program computer and the abstract business-modelling methods that underlie the Internet.

In turn, through a process of ontogenetic noogenesis—the mental evolution of the individual—the Internet shows us how to bring universal order to our thoughts, healing our fragmented, split minds. Thereby a Universal Human is emerging, rising above the level of our machines, eventually fulfilling our ultimate destiny as a superintelligent, superconscious species. But first we need to make a radical change to the concept of Universe—the Ultimate Universal—as it is understood today, free of any identification

with our own particular, unique perspectives. By realizing that we are not our bodies, minds, or souls—that in Reality we are Wholeness—we realize that we cannot become *Homo universalis*, we can only be *Homo universalis*, living at the end of time in the Eternal Now.

Human vis-à-vis machine intelligence

I have been inspired to write this essay by the release of *The Imitation Game*, a biopic about Alan Turing, which was nominated for eight Oscars in 2015, winning the award for Best Adapted Screenplay by Graham Moore, adapted from Andrew Hodges' biography *Alan Turing: The Enigma*. This movie thus brought the rather esoteric subjects of computer science, mathematical logic, and artificial intelligence to the notice of the general public, albeit it in a simplified, inaccurate manner. Turing invented a 'Universal Machine' through a brilliant exercise of imagination in 1936, giving us the opportunity to explore the relationship between the Universal Machine and the Universal Human, a term that Barbara uses, much inspired by the works of Pierre Teilhard de Chardin, the French mystic and scientist, who used the term more as an adjective than as a noun.

Turing's friend Joan Clarke mentioned the Universal Machine in the movie, saying to Turing, "You theorized a machine that could solve any problem. It didn't just do one thing, it did everything. It was not just programmable; it was reprogrammable. Is that your idea behind Christopher?" Turing then confusingly blurred the distinctions between the hypothetical Universal Machine, only existing as a mathematical construct, today called a Turing Machine; Christopher, Turing's name for the bombe, a machine for decoding the German Enigma machine; and the digital, stored-program computer, first coming into operation at the end of the 1940s at the universities of Manchester and Cambridge in England, designed by John von Neumann in 1945.

But it is not only the Universal Machine that can solve problems. Turing, himself, liked solving problems, regarding decoding Enigma as the most difficult puzzle in the world. As he told Alastair Denniston, the first head of the Government Code and Cypher School (GC&CS) where he worked, "I like solving problems, commander, and Enigma is the most difficult problem in the world." At which Commander Denniston replied, "Enigma is not difficult; it is impossible."

But Turing did not think so. By improving a device designed by Marian Rejewski at the Polish Cypher Bureau in the 1930s,[3] Turing thought he could build a machine that would break Enigma's coding system. However, Denniston was somewhat more sceptical, asking Turing in the movie, "Why are you building a machine?" Turing replied, "Enigma is an extremely well-designed machine. Our problem is that we are only using men to try to beat it. What if only a machine can defeat another machine?" This exchange raises a couple of fundamental questions: What problems can be better solved by humans or machines and how can they best cooperate, free of misunderstandings of their similarities and differences?

These questions lead to the title of the movie, which was partially explained when Robert Nock, a fictional detective, was interviewing Turing following his arrest for 'gross indecency', having had sexual contact with a man, then a criminal offence in England. Inspector Nock asked Turing, "Could machines ever think as human beings do?" To which Turing replied, "Of course machines can't think as people do. A machine is different from a person. They think differently. Just because something thinks differently from you, does that mean it is not thinking?" This explanation is somewhat simpler than that in his 1950 paper, in which he claimed that machines would be able to think in some sense of the words by 2000,[4] which in the event, did not happen.

Then, giving a simple explanation of the imitation game, itself, Turing said, "It's a game, a test of sorts for determining whether something is a machine or a human being. There is a judge and a subject. The judge asks questions and depending on the subject's answers determines who he is talking with or what he is talking with." "Would you like to play?" Turing asked the detective, inviting him to ask a question.

An inverted imitation game

For myself, I began wondering about the similarities and differences between humans and computers when I wrote my first program in September 1964, soon after graduating in mathematics, to calculate the roots of a quadratic equation. All I knew at the time is that computers are very good at arithmetic but rather poor at pattern recognition, while with humans the situation is the other way round. But why is this? During my first sixteen years in the data-processing industry, I was unable to answer this question. As I did not understand myself, what it truly means to be human being, I was quite unable to understand what humans had invented in the middle of the century, when I was six years of age.

I am not alone in my ignorance. On 23rd January 2015, the Internet Movie Database (IMDB) listed 270 movies tagged with the keyword 'artificial intelligence', curiously *The Imitation Game* not being one of them. Clearly the subject is of much interest to the general public. However, from the few such movies I have been able to watch, it seems that the directors, producers, and scriptwriters of these movies are just as ignorant as people in general. While many intuitively sense that they are not robots, able to feel and act spontaneously, not mechanistically, few have yet been able to identity the human qualities that distinguish humans from the other animals and machines, like computers.

In my case, it was not until the winter of 1980, when developing an innovative marketing programme for decision support systems for IBM in London, that I began to give my full attention to answering the question, "Can machines think?" To answer this question, I asked another: "Could computers program themselves without human intervention?" There are mechanisms in some computer languages, such as Kenneth Iverson's A Programming Language (APL), that appear to allow them to do so.[5] But does this mean that machines could create something quite new, that had never existed before?

Ada Lovelace, the daughter of Lord Byron and his wife Anne, a poet and mathematician,[6] respectively, did not think so. In a brilliant memoir on Charles Babbage's Analytical Engine, the first design for a general-purpose computer, she wrote in 1843, disparaged by Turing:

> 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.[7]

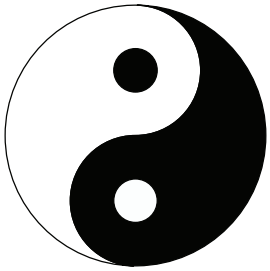
Many intuitively feel the inherent truth of Ada Lovelace's words, especially those actively engaged in a spiritual quest. However, it is much more difficult to convince sceptical computer scientists seeking to create machines with artificial intelligence exceeding any level of intelligence we humans might aspire to. So, following a life-changing epiphany in the spring of 1980, I had no choice but to set out to discover what it truly means to stretch out to my fullest potential as an intelligent human being

Turing's notion of an imitation game is perhaps the simplest way of explaining what happened to me. Rather than trying to program a computer with artificial intelligence, attempting to imitate human cognitive activities, such as calculating, reasoning, and thinking, I have reversed this experiment, using Self-reflective *human* Intelligence to imitate a computer.

In effect, I have been led to conduct a thought experiment, in which I imagine that I am a computer that turns itself off and on again so that it has no programs within it, not even a bootstrap program to load the operating system. By starting with a *tabula rasa* 'blank slate', this computer then has the task of

integrating all knowledge in all cultures and disciplines at all times into a coherent whole. This is a problem that has puzzled human beings for hundreds and thousands of years, apparently far more difficult that decoding the Enigma machine. Albert Einstein spent the last thirty years trying to solve this problem, which he called the 'Unified Field Theory'. And Stephen Hawking has spent nearly fifty years searching for the Grand Design of the Universe, in what he calls the 'Theory of Everything', the title of a movie nominated for five Oscars in 2015, winning one, for Eddie Redmayne's brilliant portrayal of Stephen Hawking, suffering from a debilitating physical illness.

Yet developing a coherent body of knowledge that corresponds to all our experiences, from the mystical to the mundane, is not actually impossible. It only appears that it is because of the way that we have been conditioned by the cultures we live in, being taught that we are separate from God, Nature, and all other beings. Our mechanistic conditioning as a civilization was graphically dramatized in the movie *The Matrix*, which won four technical Oscars in 2000. As the film depicts, if we are to rise above the level of our machines, reaching our fullest potential as a species, we first need to be deprogrammed and deconditioned from everything that human beings have learnt about God, the Universe, and humanity during the past 5,000 years and more.



But it is vitally important not to make the prevailing mechanistic civilization our enemy, as *The Matrix* did. For that defeats the object of the exercise. We cannot bring about World Peace by fighting for it. World Peace can only exist when everybody is at Peace, living in union with the Essence of the Divine, which is Love. For such a utopian society to emerge, all we need to do is make one simple change in the way we think and behave: from either-or, egoic thinking into a both-and, holistic way of life, somewhat like the Taoists, symbolized in the classic *T'ai-chi-t'u* symbol, or 'Diagram of the Supreme Ultimate'.

This radical transformation of consciousness is outlined in the first essay of a trilogy of essays published in the spring of 2015, titled 'The Cosmic Equation: The Union of All Opposites', inspired by *The Theory of Everything*. As mentioned in that essay, Stephen told his wife Jane Wilde, when he first met her, and his professors, that he was seeking a simple, elegant equation that could explain everything. That essay introduces this paradoxical equation, as a mathematical expression of the fundamental design principle of the Universe, which I call the Principle of Unity: *Wholeness is the union of all opposites*:

$$W = A \cup {\sim}A$$

However, as this experiment in learning has led me to bring the Divine and the creative power of Life into science and business, changing the meanings of the words *God* and *Universe* as they are generally understood by Christians and physicists today, I have, of necessity, needed to spend the second half of my life in almost complete solitude, working on a project that many consider to be impossible, hubristic, preposterous, and grandiose. As Jane Clarke and Alan Turing said to each other in *The Imitation Game*, "Sometimes it is the people who no one imagines anything of who do the things that no one can imagine."

So while it is not normal for someone to abandon their family, business career, and home, as I did in 1980 in order to unify what Teilhard called 'spiritualized human energy'[8] with the four forces recognized by the physicists, I feel utterly normal, no different from anyone else. I can best demonstrate this by living it in action, which I am planning to do as the founder for the Alliance for Mystical Pragmatics, with the

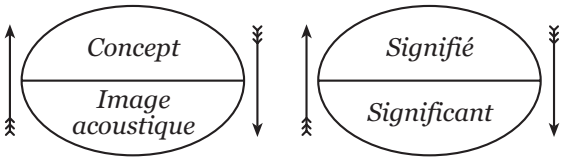
motto 'Harmonizing Evolutionary Convergence'. In the meantime, I have written a trilogy of essays for the general reader, demonstrating how simple the Theory of Everything actually is.

Universals and particulars

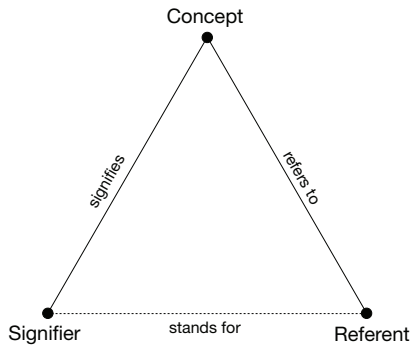
What then are universals and particulars? Well, in the sense being used in this essay, they are concepts or mental images, the one being abstract and the other concrete or specific. For instance, in our lifetimes we may eat many different apples, each of which is represented as a particular concept in the mind. All these experiences lead to the abstract concept of apple, as a universal, which does not match any particular observation in what people call the 'real world'.

This seems reasonably straightforward. We are quite used to talking with universals in our daily lives. For instance, most are familiar with the tree of life, because Carl Linnæus published his seminal *Systema Naturæ* in 1735, which categorized the animals, plants, and minerals known at his time in a hierarchical structure of broader and narrower terms. For instance, human, primate, mammal, vertebrate, and animal is a series of terms of ever-increasing abstraction. Such concepts are constituents of our conceptual models or worldviews, which we use for navigation on our journeys through life, like maps of territories on Earth.

It is of the utmost importance here to distinguish concepts, as inner mental images, and words, sounds, and other external symbols or signs that denote them. This is a distinction that Ferdinand de Saussure made in *Cours de linguistique générale*, which his students published posthumously in 1915. In this seminal book of structural semiology, as semiotics 'science of signs' was known in Europe at the time, de Saussure said: "I propose to retain the word *sign* [*signe*] to designate the whole and to replace concept and sound-image respectively by *signified* [*signifié*] and *signifier* [*signifiant*]," illustrated in this diagram.[9]



Charles Sanders Peirce went even further in his semiotic studies. In an unpublished fragment from about 1897, he wrote, "A sign … addresses somebody, that is, creates in the mind of that person an equivalent sign, or perhaps a more developed sign. That sign which it creates I call the *interpretant* of the first sign. The sign stands for something, its *object*."[10] This triadic approach to semiotics is illustrated in what J. F. Sowa of IBM calls the 'meaning triangle' in *Conceptual Structures*.[11]



What this diagram illustrates is that there is an indirect relationship between language and the territory that language describes, not generally recognized by modern academic philosophers, focusing more attention on language than on the conceptual structures underlying language. Even psychologists are unaccustomed to this distinction, for, as the entry for 'concept' in *The Oxford Companion to the Mind* states, "In psychology, concepts of mind must be invented or discovered, much as in physics, for we cannot see at all clearly into our own minds by introspection."[12]

We can thus see why the Western mind has had great difficulty with universals and particulars during the past two or three thousand years. They can only really be understood by introspection, through self-inquiry, an approach to learning that is discouraged by science and religion, alike. It has thus been left to

philosophers to try to make sense of these experiences, a mantle that has fallen on psychologists or cognitive scientists during the last hundred years or so, still, nevertheless, being wary of self-inquiry.

Plato was the first to distinguish universals and particulars, implicitly described in *The Republic*, an early attempt to define the characteristics a utopian society. From a cognitive perspective, Plato made a clear distinction between two levels of reality: that which is accessible to the physical senses and that which is beyond the senses, where he thought true knowledge resides. This knowledge takes the form of Forms, the English translation of Greek *eidos* and *idea*, words that Plato seems to have used interchangeably.[13]

Plato also distinguished Forms and particulars by saying that the former have presence (*parousia*, from *para* 'beside, near' and *ousia* 'being, essence'), while the latter 'share in' or 'partake of' the form, from the Greek *metechein*,[14] which could also mean 'enjoy with others'. For Plato, *ousia* meant 'that which constitutes the nature of something'. As he said, those who only see instances of universals are dreaming, while those who see both the essence of beauty, for instance, and the particular things that share in it are very much awake.[15] This is as important today as it was in Plato's time, the key to making sense of the world we live in.

However, Plato did not consider Forms to be concepts, as pictures in the mind. Rather, they are eternal, existing independently of our minds. So Plato could not fully accept Heraclitus' philosophy that all is flux, encapsulated in the famous saying, "You cannot step twice into the same river." Universals, in Plato's conception, do not evolve. As the concepts of universal and particular are central to conscious evolution and as Plato's influence is vast, his conservatism has placed a brake on the evolution of our species. As Alfred North Whitehead famously said in *Process and Reality*, "The safest general characterization of the European philosophical tradition is that it consists of a series of footnotes to Plato,"[16] it is crystal clear that we urgently need to rebuild the whole of Western philosophy, dissolving what Bertrand Russell called the 'No-Man's Land' between science and theology.[17]

Pure mathematics

We can clearly see the limitations of Plato's thought from the way that mathematics has evolved since the ancient Greeks, who regarded mathematics as the science of space and number, the principal concepts in geometry and arithmetic, respectively. For instance, the concept of number has become ever more abstract, as numbers that once seemed strange were assimilated into mathematics. So we have seen the concept of number progressing from positive and negative integer, through rational and real, including transcendental, to complex.

However, in 1844, George Boole wrote a path-breaking paper[18] that helped free mathematics from the tyranny of number systems, regarding the essence of mathematics as "the study of form and structure rather than content, and that 'pure mathematics' is concerned with the laws of combination of 'operators' in their widest sense." For instance, he noted that the commutative and distributive laws of arithmetic could equally apply to differential operators and geometric transformations.[19] So pure mathematics became the science of patterns and relationships.

Generalizing mathematics in this way led Boole to begin the unification of mathematics and logic, as the science of reason, in 1853, with the publication of *The Laws of Thought*, intended to explore "the nature and constitution of the human mind".[20] Mathematical logic led to the invention of the electronic computer, able to extend the range of the human mind, taking human evolution in a radically new direction. For 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, telephone, and aeroplane, 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.

However, contrary to Boole's hopes, linear mathematical logic has not helped us directly to understand ourselves, for the computer is a sequential, mechanical device, albeit with many parallel threads in modern software systems running on multi-headed, collaborative computers, such as the Internet, as a whole. In contrast, we humans think nonlinearly, a learning process that becomes fully conscious when we realize that the most abstract universal enables us to view the Cosmos holographically, rather like fractals, possessing the property of self-similarity.

Regarding pure mathematics, itself, the eminent mathematician G. H. Hardy wrote in *A Mathematician's Apology* in 1940, "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".[21]

In the words of Whitehead, the co-author with Bertrand Russell of *Principia Mathematica*, "The science of Pure Mathematics … may claim to be the most original creation of the human spirit," one possible rival being music. As he said, it is the task of mathematics to discover a "pattern of relationships among general abstract conditions". 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."[22] As Hardy said, "a property common to too many objects can hardly be very exciting."[23]

Once again, we see the limits of the human mind, sometimes not able to see what is staring at us in the face, not able to foresee where evolution is taking us all. For buried deep in the foundations of mathematics are many paradoxes, a relationship encapsulated in the Cosmic Equation and the Principle of Unity, showing that there is a primary-secondary relationship between the Formless Absolute and the relativistic world of form and many other pairs of opposites.

This irrefutable, universal truth naturally lies at the heart of this essay, one particular pair of opposites being universals and particulars. This fundamental design principle of the Universe is thus a pattern of unlimited generalization, which is exciting, powerful, and elegantly simple, able to solve all problems on Earth, including that of the death of our bodies, Western civilization and the global economy, and eventually *Homo sapiens sapiens*.

Scientific method

As we all implicitly, even unknowingly, form universals from particulars and particulars from universals in our daily lives, it is not surprising that this natural cognitive process plays a central role in scientific method. As Albert Einstein wrote in an essay on 'Physics and Reality' in 1936, "The whole of science is nothing more than a refinement of everyday thinking."[24]

However, it was not until the early 1600s that evolution became sufficiently conscious of itself to notice that creating generalizations from specific situations is central to human learning and scientific method. Until that time, Aristotle's deductive syllogism had formed the basis of human reasoning. In Aristotle's own words, one example of a syllogism is the universal one, mnemonically known as *Barbara* in the Middle Ages, "If A is predicated of all B, and B of all C, A must necessarily be predicated of all C."[25] As A, B, and C are universals, one particular instance of a syllogism is: "If 'All humans are mortal' and 'All

Greeks are human,' then 'All Greeks are mortal.' " And as the particular Socrates was a Greek, we can also deduce, 'Socrates is mortal'.

The great turning point in Western reason came in 1620, when Francis Bacon, then the Lord Chancellor of England, published the first parts of his magnum opus titled *Instauratio Magna*, the *Great Renewal*, Part Two being titled *Novum Organum* or *Directions for the Interpretation of Nature*, indicating that it was intended as an extension of Aristotle's *Organon* or *Instrument for Rational Thinking*, in which he defined the syllogism.

In the Preface to the *Great Instauration*, Bacon wrote, "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." And in the Plan of Work, he wrote, "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."[26]

So what is scientific induction? Well, in a standard textbook for undergraduates, A. F. Chalmers defined induction as follows: "If a large number of As have been observed under a wide variety of conditions, and if all those observed As without exception possessed the property B, then all As have the property B." Here, As are particulars, having the universal property or attribute B, a principle that lies at the heart of scientific inductive method. For instance, Johannes Kepler proved in 1609, "planets move in ellipses around their sun." This is an example of a *universal statement*, lying at the heart of scientific knowledge, showing the relationships between two or more universals.[27]

However, in 1739, the Scottish philosopher David Hume set a cat among the pigeons, pointing out that there are two serious weaknesses in the inductive method, logical and psychological. First, we cannot assume that "the course of nature continues always uniformly the same," that instances in the future, of which we have no experience, will resemble those from past experience. Yet, we make such assumptions because of habit,[28] not able to see the big picture. For instance, physicists estimate that the Sun, which was formed about 4.5 billion years ago, is destined to turn into a red giant and white dwarf in some five to six billion years time.[29] So sometime soon on the Cosmic timescale, there will be no one around to observe the planets circling the Sun, for both the Sun and the Earth will have disappeared.

As Karl Popper put it, scientific induction is based on " 'custom or habit'; that is, because we are conditioned, by *repetitions* and by the mechanism of the association of ideas; a mechanism without which, Hume says, we could hardly survive."[30] Such habitual behaviour is widespread in the species, for, as Rupert Sheldrake points out in *The Presence of the Past,* once a specific behaviour pattern is formed in evolution, it tends to repeat itself through habit.[31]

Since Hume, there have been many attempts to rescue scientific induction, not the least Popper's proposal that scientific facts cannot be absolutely verified; they can only be falsified by specific observations that contradict the general principles held at any one time. However, as Chalmers points out, even this approach is flawed because observation statements are theory dependent.[32] It is not possible to observe anything without some preconceptions of what is being observed.

Chalmers' solution to this problem is to view the universal statements constituting scientific knowledge as a structure, along the lines of Thomas S. Kuhn's *The Structure of Scientific Revolutions* and Imre Lakatos's 'Falsification and the Methodology of Scientific Research Programmes'. The former is most famous for the observation that occasionally science takes a radical change of direction, which he called a *paradigm change* or *paradigm shift*, using these terms twenty-three and six times, respectively.[33] And at the heart of Lakatos's scientific method is the notion of a *hard core* that can never be changed.[34]

"Any scientist who modifies the hard core has opted out of that particular research programme,"[35] typically being ostracized by her or his colleagues. In effect, science is thus as much a subjective, social activity—like any other human enterprise, such as politics—as an objective, rational process.

Materialistic, mechanistic science has a hard core, which Chalmers expressed in these words: "I accept, and presuppose throughout this book, that a single, unique, physical world exists independently of observers."[36] Einstein held a similar view, strangely known as logical positivism. In 1931, when commemorating the centenary of James Clerk Maxwell's birth, he wrote, "The belief in an external world independent of the perceiving subject is the basis of all natural science."[37]

Yet, as an increasing number of people know today, our minds create our reality and govern our behaviour. Clearly, we need to break up the hard core at the foundation of science if are to learn how to resolve the great global crisis that humanity faces today. Such rigid assumptions at the core of human learning and scientific method cannot help evolution become fully conscious of itself. A radically new, liberated approach is required if we are to collectively become and hence be *Homo universalis*. A Great Renewal is urgently needed, far, far greater than that which Francis Bacon introduced, once again taking evolution in a radically new direction—towards its glorious culmination.

Business modelling methods

If we are to collectively evolve into *Homo universalis*, evolution needs to carry the process of conceptual abstraction to its utmost level of generalization, much like the Internet. For all cultures, disciplines, and industries use essentially the same programming languages and modelling methods to develop their management information systems and operational websites. Otherwise, the transcultural, trans-disciplinary, and transindustrial Internet would not exist. It would be like a Tower of Babel, with multitudes of different languages unable to communicate with each other.

There is nothing new here, for Aristotle said at the beginning of Book IV in *Metaphysics*,

> There is a science which studies Being *qua* Being, and the properties inherent in it in virtue of its own nature. This science is not the same as any of the so-called particular sciences, for none of the others contemplates Being generally *qua* Being; they divide off some portion of it and study the attribute of this portion, as do for example the mathematical sciences.[38]

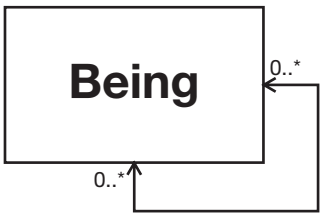
We can thus regard the concept of **being** as the most abstract and egalitarian of concepts, representing everything that exists in reality or imagination. As we human beings are all beings, we see that none of us is special. As universal individuals, concepts formed from a lifelong stream of particular instances, we are all subclasses of **Being**, which is the superclass of all concepts in the hierarchy of generalization, broader than the concepts of animal and living being in the tree of life, and, of course, *Homo sapiens sapiens*.

The notion of a superclass lies at the heart of object-oriented modelling and programming methods, which originated in the Norwegian Computing Centre in the mid 1960s in SIMULA (SIMUlation LAnguage), designed and implemented by Kristen Nygaard, Ole-Johan Dahl, and Bjørn Myhrhaug. SIMULA is a computer language intended to simulate real-world systems, such as traffic patterns in towns and cities.[39] The principal concepts in such object-oriented methods are class and object, corresponding to Plato's universals and particulars, respectively.

At the design stage of information systems development, the focus is primarily on universals in the form of class models of the relationships between the various classes of data and their behaviour. The superclass of all classes in business is **Object**, which we can generalize into **Being**, capitalized and emboldened to denote that it is a class. Now as more and more people are becoming aware today, no beings are ever separate from any other in the Universe. All beings are related and connected to all other

beings, including themselves, in zero to many different ways, some of which can be classified and some of which defy categorization and must remain a mystery.

This notion of relationship is a generalization of that of field in physics, such as gravitational and electromagnetic fields. However, there are many other types of field between forms, such as morphogenetic fields, which Rupert Sheldrake introduced in *A New Science of Life* in 1981.[40] We can thus draw a complete map of the Universe with just one class and relationship, the most abstract class model we can draw in the notation of the Unified Modeling Language, developed by Grady Booch, James R. Rumbaugh, and Ivar Jacobson of Rational Software in the 1990s, now a subsidiary of IBM.



This diagram is a depiction of what Ervin Laszlo has called the Cosmic Internet, showing that we are all connected, at the heart of the Akashic Paradigm,[41] using the word *Akasha* to refer to the Universal Quantum Field.[42] 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."[43]

Akasha, from Sanskrit *Ākāśha*, corresponds to Greek *aither* 'pure, fresh air', in Latin *æther*, "the pure essence where the gods lived and which they breathed". So to Indians and Greeks alike, the mysterious Æther was the fifth element, the other elements being fire, air, earth, and water, of course. The Æther was thus the *quintessence*, from the Latin translation of *pempta* 'fifth' and *ousia* 'being, essence', "thought to be the substance of the heavenly bodies and latent in all things".[44]

Now, we have seen that for Plato *ousia* meant 'that which constitutes the nature of something', the essence of his immortal forms, which he called *parousia* 'presence'. But while the essences or souls of universals, denoting beings in the relativistic world of form, are not immortal, *Parousia* 'Presence', with a capital *P*, is ever-lasting, denoting the Essence of the Universe, which is Love or Presence, from Latin *præesse* 'to be present', literally 'before being, prior to existence'. And God is Love, as John said in his first epistle.[45] So God, as Love, is Parousia, the Akasha, Æther, and quintessence underlying the Cosmos.

We can see why the conditioned Western mind has great difficulty in recognizing that all these words refer to the one Ultimate Reality from Aristotle's *Metaphysics*. A few paragraphs after introducing the concept of being, he said, "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."[46] This statement is known as the Law of Contradiction, lying at the heart of Western reason. Driving a deep divide between opposites has sent humanity into an evolutionary cul-de-sac, a major inhibitor to World Peace. In contrast, Heraclitus' Hidden Harmony recognizes that Wholeness can only be realized when we unify all opposites in Nonduality, even those that are paradoxical and self-contradictory.

While this picture is of the utmost abstraction, far beneath our everyday conceptions, object-oriented modelling methods first became noticeable to the general public in the desktop metaphor of the Apple Macintosh in 1984. As programming techniques, they also explain why the Internet and apps on mobile devices have been expanding at hyperexponential rates of acceleration. For gone was the need to reinvent the wheel, to create bricks, doors, and windows to build a house afresh each time. Class libraries, encapsulating basic building blocks, became available to software developers, enabling information systems to evolve much, much faster than before.

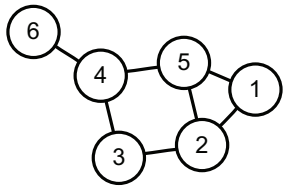
However, object-oriented modelling methods are not the only way of depicting relationships between classes, as universals. In 1970, Ted Codd of IBM introduced the relational model of data, following the

invention of direct-access storage devices, such as disks, in the 1950s, liberating mathematical logic of its linearity, which had dominated the science of reason for over 2,300 years. The relational model, which has evolved from Aristotle's *Prior Analytics* through the mathematical theory of relations and first-order predicate logic, is a nondeductive logic, necessary to design integrated databases that unify hierarchical and nonhierarchical structures. In practical terms, you cannot order a book or airline ticket on the Web without invoking the relational model behind the scenes.

In the relational model, universals and particulars are called entity types and entities, respectively, the latter having attributes, such as size and colour for a class **T-shirt**. This entity-attribute relationship corresponds to Aristotle's notions of subject and predicate.[47] Unifying Plato and Aristotle's philosophies, we can thus build a complete map of the Totality of Existence with the concepts of **class**, **entity** (as **instance** of class), and **attribute**. All this information and knowledge can be arranged in tables, called relations in mathematics, such as this familiar telephone directory:

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

Such tables or relations of the particular instances of universal classes do not exist in isolation. All classes of being have relationships with all other classes, as we have seen. We can simply depict these relationships in a semantic network or mathematical graph, the latter arising from Leonhard Euler's utterly abstract way of drawing maps. In 1736, inspired by a map of Königsberg, the capital of East Prussia, he realized that the bridges in the city could be represented as arcs between land masses, viewed as nodes.[48] Generalizing this construct, business modellers and computer programmers draw class models consisting simply of nodes and the relationships between them, a structure that is universal, applicable to both the Universal Machine and Universal Human.



Generalizing even further, nodes are themselves graphs or structures, consisting of meaningful relationships between forms in countless levels of detail and specificity. These nonlinear, holographic, fractal-like modelling methods thus enable us to overcome the constraints of deductive and inductive reasoning, which have limited Western thought for hundreds and thousands of years. By looking at the Universe in terms of **structure**, **form**, **relationship**, and **meaning**—as information systems architects look at business—we can build a coherent body of knowledge that corresponds to all our experiences, from the mystical to the mundane.

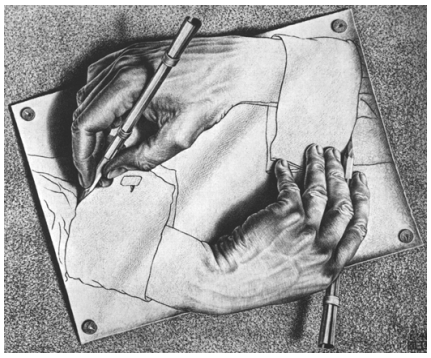
A thought experiment

However, there are two more steps that we need to take. To understand this, we can first regard the conceptual models or mental images through which we view the world as maps, rather like the maps that we draw of regions on Earth and of the Earth, as a whole. However, for our maps of the Universe to be complete, it is vitally important that we include the conceptual models of every human being who has

ever lived in the territory being mapped. We can do this when we recognize that **Being** is all-inclusive, denoting everyone's theories, opinions, points of view, beliefs, ideas, concepts, values, principles, propositions, theorems, etc., in all cultures and disciplines at all times, past, present, and future.

In other words, we need to abandon Alfred Korzybski's 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."[49] For as Teilhard said when introducing the concept of human energy, challenging the hard core at the centre of scientific methodology and its worldview, "For investigators of nature, it seemed indisputably established that things are projected for us just as they are on a screen where we can look at them without being mixed up in them."[50] In other words, as quantum physicists discovered in the last century, the observer and observed cannot be separated, a principle that brought David Bohm and J. Krishnamurti together around 1960.[51]

Now, we are not just engaged in a phylogenetic process, mapping the evolution of universals during the past few thousand years in human consciousness. Ontogenetically, we also need to include both our own maps and mapmaking thought processes in the territory being mapped. Thinking in this healthy way is rather like a TV camera filming itself filming, illustrated by Escher's famous lithograph 'Drawing Hands'.[52] It is in this wholesome manner that evolution can become fully conscious of itself, going even further than Julian Huxley foresaw. In his foreword to the first English translation of Teilhard's *Le Phénomène Humain*, he wrote, "in modern scientific man, evolution was at last becoming conscious of itself—a phrase which I found delighted Père Teilhard."[53]



But how can we objectively map our own thought processes? If we do so with a preconceived set of beliefs and assumptions, built up from our cultural conditioning and personal experiences, any generalized observation statement we might make would be of doubtful validity. If we are to avoid suffering from self-delusion, we need to find a quite new way for evolution to become fully conscious of itself. Or rather, evolution has to show us the way, for we are not actually in control of our lives, even though we like to think that we are. We all seem to be the products of some 13.8 billion years of evolution since the most recent big bang.[54] If all these aeons of development had not taken place, none of us would be where we are today.

In my case, as mentioned in Section 'An inverted imitation game', to discover what it truly means to be a human being, in contrast to a machine, I have been led to reverse Turing's imitation game by imagining that I am a computer that has the task of creating the Theory of Everything from a blank slate, rather than trying to program a computer with artificial intelligence.

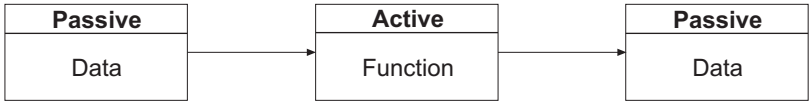
In terms of my own direct experience, this felt as if a big bang erupted in my consciousness at 11:30 on 27th April 1980, when I discovered that the mental energies of scientists and technologists are the cause of the exponential rate of evolutionary change we observe and experience in the world today. Discovering that there are nonphysical energies at work in the Universe, as well as the four physical forces recognized by physicists, was mind-shattering, giving me no choice but to dedicate the rest of my life to their unification, no matter what sacrifices I needed to make as a human being, endeavouring to live sanely in a society that is going increasingly mad, as Erich Fromm, in particular, pointed out in a brilliant series of books, from *The Fear of Freedom*, through *The Sane Society* and *The Art of Loving*, to *To Have or To Be?*

And as J. Krishnamurti so wisely said, "It is no measure of health to be well-adjusted to a profoundly sick society."[55]

Accordingly, creating a cosmology of cosmologies that unifies these psychospiritual energies with material ones has led me to create a brand-new Universe, new, at least, in terms of Western civilization. Such an experience is absolutely essential for evolution to reach its Omega Point, as Teilhard prophesied. As Alpha and Omega are one by the Principle of Unity, it is only possible to reach evolution's glorious culmination by starting afresh at the very beginning, at the Divine Origin of the Universe.

Creating universal order

But how could I begin an experiment in learning without any preconceptions? Well, once again we can turn to our computers for inspiration. In essence, a computer is a machine for processing data, illustrated in this input-process-output diagram, where data takes two forms, active and passive:



For instance, the input to a program performing weather forecasts consists of many hundreds of thousands of measurements, current and historical. In this way, meaningless data is converted into meaningful information and knowledge. Here, as is quite common in the data-processing industry, I use *data* as an uncountable noun, more like sand than pebbles, the plural of the Latin *datum* 'that which is given', from the Latin *dare* 'to offer, give'. As Sherman C. Blumenthal pointed out in 1969 in *Management Information Systems*, "A **datum** is an uninterpreted raw statement of fact" and "**Information** is data recorded, classified, organized, related, or interpreted within context to convey meaning."[56]

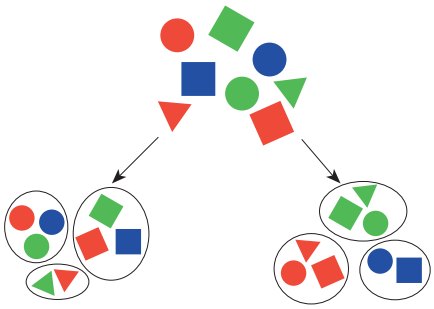
However, it is vitally important to note that input data is both 'raw' data and the program instructions that humans write as strings of characters to tell the computer how to function. In this case, the output from a program that converts these strings into machine instructions might be a file with the suffix .app or .exe in Mac OS X and Microsoft Windows, respectively. Indeed, the data in the main memory of a stored-program computer itself can be both numerals, for instance, and the executable programs in the machine language of the computer, which I call passive and active, respectively. So, like the Universal Machine, in modern digital computers, it is theoretically possible for programs to reprogram themselves in mid-flight, so to speak.

So what does this mean for a Universal Human? Could a computer program create a function from scratch, without a human being telling it what to do? Well, we can best answer this question by regarding all beings in the Totality of Existence as meaningless data patterns, prior to interpretation by an intelligent, knowing being, like Plato's notion of *parousia*, applied to particulars. In turn, these patterns of data emerge from the Datum of the Universe, that which is given prior to existence, which is Presence or *Parousia*. As such, these concepts cannot be formed through discursive reason. They are implicit axioms for all our learning, revealed when we imagine that we are a computer that switches itself off and on again so that it has no programs within it to tell it how to function.

Having established that meaningless data patterns in the relativistic world of form emerge from the Formless Datum of the Universe, how can we, as human beings, interpret all this meaninglessness as meaningful knowledge and information? How can we bring universal order to all our thoughts, creating a coherent body of knowledge that corresponds to all our experiences? Well, as the computer I am

imagining myself to be has no bootstrap program to load the operating system, I clearly need some bootstrap, primal concepts to get started. The first of these are the concepts of **Datum**, **data**, and **being**.

The next, the basic primal concept of interpretation, comes from developments in the 1960s, when a group of mathematicians in the USA and UK introduced the 'new maths' into primary and elementary schools, attended by five to eight year-olds. For thousands of years, we human beings had been using numbers without understanding how the concept of number is formed. This situation began to change at the end of the nineteenth century, when Georg Cantor developed the mathematical theory of sets, defined in this way: "By a set we mean the joining into a single whole of objects which are clearly distinguishable by our intuition or thought."[57] In other words, it is not possible to form the concept of three until the concept of **set** is formed, a fundamental primal concept.



The pairs of concepts of set and number and semantics and mathematics are thus two of many examples of ubiquitous primary-secondary relationships. Recognizing such relationships, mathematicians introduced the abstract concept of set into schools, so that children could intelligently and consciously learn how to form concepts, like distinguishing colours, shapes, and numbers in this illustration. This is the essence of scientific induction, forming universals from particular instances.

This transcultural, transdisciplinary interpretative process is central to pattern recognition, conscious evolution, and all our learning. As the authors of *The 'New' Maths* pointed out, the new maths was intended to bring meaning to mathematics and hence to all other disciplines.[58] But it seems that the new maths was abandoned because children were not developing the numeracy skills required by business and science,[59] inhibiting evolution from becoming fully conscious of itself within us human beings.

To form concepts in this consistent, egalitarian manner, we use David Bohm's very general way of perceiving order in quantum physics: "*to give attention to similar differences and different similarities*", a notion of order that the artist Charles Biederman gave him.[60] This is the key to the process of interpretation, giving meaning to the meaningless data patterns of experience. In other words, we carefully examine the similarities and the differences in the data patterns of our experience, putting our interpretations into various sets as appropriate. By bringing all our thoughts to universal order, we can thus develop the Theory of Everything, the glorious culmination of all evolutionary processes on our beautiful planet Earth.

This tells us that the Grand Design of the Universe can be expressed in one simple sentence, a natural concomitant of the Principle of Unity: *The underlying structure of the Universe is an infinitely dimensional network of meaningful hierarchical relationships*. Nothing more is needed once we learn to view the Cosmos simply in terms of structure, form, relationship, and meaning, creating all concepts in exactly the same manner, including paradoxes, encapsulated in the Cosmic Equation.

For the world we live in is essentially paradoxical. So if we do not include paradoxes in our maps, they will lead us seriously astray, living our lives on shifting sands. For the Cosmic Equation is the keystone that keeps the entire Cosmos from falling apart into disarray. It is the binding energy that maintains the Cosmos in constant movement, arising from Stillness at the Divine heart of the Universe.

A deep understanding of the concept of set helps us to understand why it is absolutely essential to include paradoxes in our self-reflective maps of the Universe, rather then rejecting them, as has been done since the ancient Greeks, at least.

To give a simple example, we can imagine the largest possible set—the infinite set of all sets—as a representation of all concepts that are constituents in the Theory of Everything. However, Cantor showed that the set of all subsets of a particular set, called the power set, is larger than the set itself. This principle applies to infinite sets as well as finite ones. So the largest possible set is both the largest set, by definition, and not the largest, because its power set is larger. In turn, the power set of the power set of the infinite set is larger than the power set of the infinite set. As this is a series that can continue indefinitely, there are an infinite number of infinite cardinals, not just the one, usually denoted by the symbol ∞.

Around the turn of the nineteenth and twentieth centuries, Bertrand Russell was much disturbed by Cantor's proof that there is no largest transfinite cardinal, at first denying this. He thereby spent twenty futile years with A. N. Whitehead, searching for a way to eliminate paradoxes from the foundations of mathematics. All to no avail, for as he wrote in 'Reflections on my Eightieth Birthday' in 1952, "I wanted certainty in the kind of way in which people want religious faith … and after some twenty years of arduous toil, I came to the conclusion that there was nothing more that I could do in the way of making mathematical knowledge indubitable."[61] As logicians and mathematicians have discovered, such as Kurt Gödel and Alan Turing, the more they have dived into the foundations of mathematics, the more paradoxes that have been discovered.

Treating paradoxes in a consistent fashion is but one example of the egalitarian way of bringing universal order to all our thoughts. There are many other examples if we are to make sense of our lives at these rapidly changing times. It is of the utmost importance to interpret all data patterns in exactly the same way, without making any of them special, such as mass, space, and time. Mathematicians treat these concepts in precisely the same way as all other quantitative values in their functions, as we see in these equations: $F = ma$, $s = vt$, and $V = iR$, which I learned at school in the 1950s. We also use exactly the same form of equation when we go shopping, for the cost of five kilograms of potatoes is the quantity multiplied by the price per kilogram in monetary terms.

Software developers and information systems architects go even further in their functions and models, treating both qualitative and quantitative domains of values for all classes of being in exactly the same manner. This happens because all knowledge and information can be expressed in terms of class, entity, and attribute, following Plato and Aristotle, as we see in Section 'Business modelling methods'.

Yet, scientists in general ignore the fundamental principles that govern the organization and management of businesses in human society. Rather, they believe that the universe primarily consists of mass, space, and time, telling their colleagues and the general public that human behaviour can only be understood in terms of the laws of physics, denying the existence of psychospiritual human energy. As Stephen Hawking said in his best-selling *A Brief History of Time*, perhaps with tongue in cheek, "we have, as yet, had little success in predicting human behaviour from mathematical equations!"[62]

The Ultimate Universal

This problem with the concept of Universe is not new. We humans have been living in delusion ever since the Babylonians living in Mesopotamia began mapping the skies some four or five thousands of years ago. In contrast, at about the same time, Rishis in the Indus Valley discovered a quite different universe by looking inwards, into inner space rather than outer space.

So could the evolution of universals that we have been tracing in this essay lead us to form the concept of Universe, as the Ultimate Universal, which corresponds to *all* our experiences, not just those that we

see, hear, taste, smell, and touch through our five senses? Could we include our innermost feelings in such an all-encompassing cosmology?

Well, before we can do this, we need to recognize that the Supreme Being is another candidate for the position of Ultimate Universal. The Absolute has been given many different names over the years. For instance, Jews, Christians, Muslims, Hindus, Chinese Huayan Buddhists, and Taoists call the Absolute *Yahweh*, *God*, *Allah*, *Brahman*, *Li*, and *Tao*, respectively. We can regard all these views as particular instances of the Ultimate Universal.

We thus have two candidates for the position of Ultimate Universal: God, as Supreme Being, and universe, as Ultimate Reality, which are the incompatible contextual concepts for religion and science, respectively. Must we choose between them, in an either-or war? Must we forever live with split minds, not only suffering from delusion, but also from schizophrenia, detached from Reality, from Greek *skhistos* 'split, divided', cognate with *science*, and *phren* 'mind'.

What then is God and what is the Universe? No one has ever seen either God or the Universe, as we might see a rose, for instance. So what are they? Well, the concept of the universe is essentially a composite one, built up by aggregating and projecting the concepts of our day-to-day experience, most commonly focusing attention on what we can sense with our five senses, leaving our thoughts, feelings, and emotions out of the overall picture. On the other hand, the concept of God has arisen in human consciousness because many have sensed an immanent, transcendent Presence (literally 'prior to existence'), which cannot really be understood even in terms of feelings, never mind the physical senses.

For myself, I found a way of reconciling these conflict-ridden views of the Ultimate Universal in October 1983 by applying David Bohm's method of creating universal order in all our thoughts. In conformity with the egalitarianism of this coherent system of thought, we can form the concept of the Absolute in exactly the same way as we form concepts in the relativistic world of form: by carefully observing the similarities and differences in the data patterns of our experience. And as we see in Section 'Creating universal order', these data patterns arise from the Datum of the Universe, an understanding that arises not from discursive reasoning but from direct, mystical experience of the Divine.

But now we can use a coherent system of thought to confirm conceptually what our deepest, innermost experiences tell us. To do this, in conformity with the Cosmic Equation and the Principle of Unity, we need to look at the Absolute in terms of two pairs of opposites: conceptually and experientially and as both a unity and an aggregate, which cannot be avoided when we approach Ultimate Reality from the relativistic world of form. Viewing the Absolute conceptually as a unity, we can see that it differs from all its parts, for all these parts are limited in some way. In contrast, the Datum cannot be defined, for to do so would be to give it boundaries, to say what it is and what it is not. This is obvious from the word *define*, which comes from the Latin *dēfīnīre* 'to limit' or 'to end'. The Absolute is thus indefinable and unanalysable, qualities that are Transcendent with respect to a knowing being.

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

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

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

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

	Oneness	**Wholeness**
Conceptual	Transcendent	Immanent
Experiential	Immanent	Transcendent

Having formed the concept of the Formless Absolute in exactly the same way as concepts that represent beings in the relativistic world of form, we can see why the Universal Human can solve the ultimate problem of human learning, while the Universal Machine cannot. Computer programs exist solely as symbols in computers, as zeroes and ones, while we humans are never separate from the creative power of the Divine for an instant.

In my experience, there is nothing more beautiful in life, impossible to describe. I feel as if I am standing on the summit of the mountain of all knowledge, with a Holoramic 'Whole-seeing' perspective of the Cosmos, from Greek *ὁlos* 'whole' and *ὁrāma* 'sight, view', cognate with *panoramic* 'all-seeing'. The clouds that so often envelop mountain peaks have dissolved, revealing the most exquisite and spectacular *Weltanschauung* possible, awesomely breathtaking. The Coherent Light of Consciousness is radiating brilliantly, enabling me to use Self-reflective Intelligence to view the Totality of Existence holographically, like a laser.

Yet the picture that emerges through the culmination of the evolution of universals has no form in itself. It is utterly Formless. So while this process of reasoning has led me to realize that Wholeness is the union of all opposites, this is actually a delusion. In Reality, there are no opposites in Wholeness, such as form and Formlessness, for Wholeness transcends the categorizing mind. This means that I am not a human being having a Divine experience. Rather, I am a Divine, Cosmic being having a human experience. In other words, as soon as *Homo universalis* seems to emerge in conscious experience as a separate being, it disappears.

The True Nature of every human being who has ever lived or who will live is Wholeness, even though we don't always know this. We can see this most clearly in the beautiful Sanskrit word *Satchidananda* 'Bliss of Absolute Truth and Consciousness', from *Sat* 'Absolute, eternal, unchanging Being, Truth', *Chit* 'Absolute Consciousness', and *Ananda* 'Bliss, Absolute joy'. I don't know any better way of denoting the Ultimate Universal that arises from the consummation of the sacred marriage of science and spirituality, mathematics and mysticism, reason and religion, and East and West.

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