# NEOHUMANIST Review

Issue 4 • March 2025

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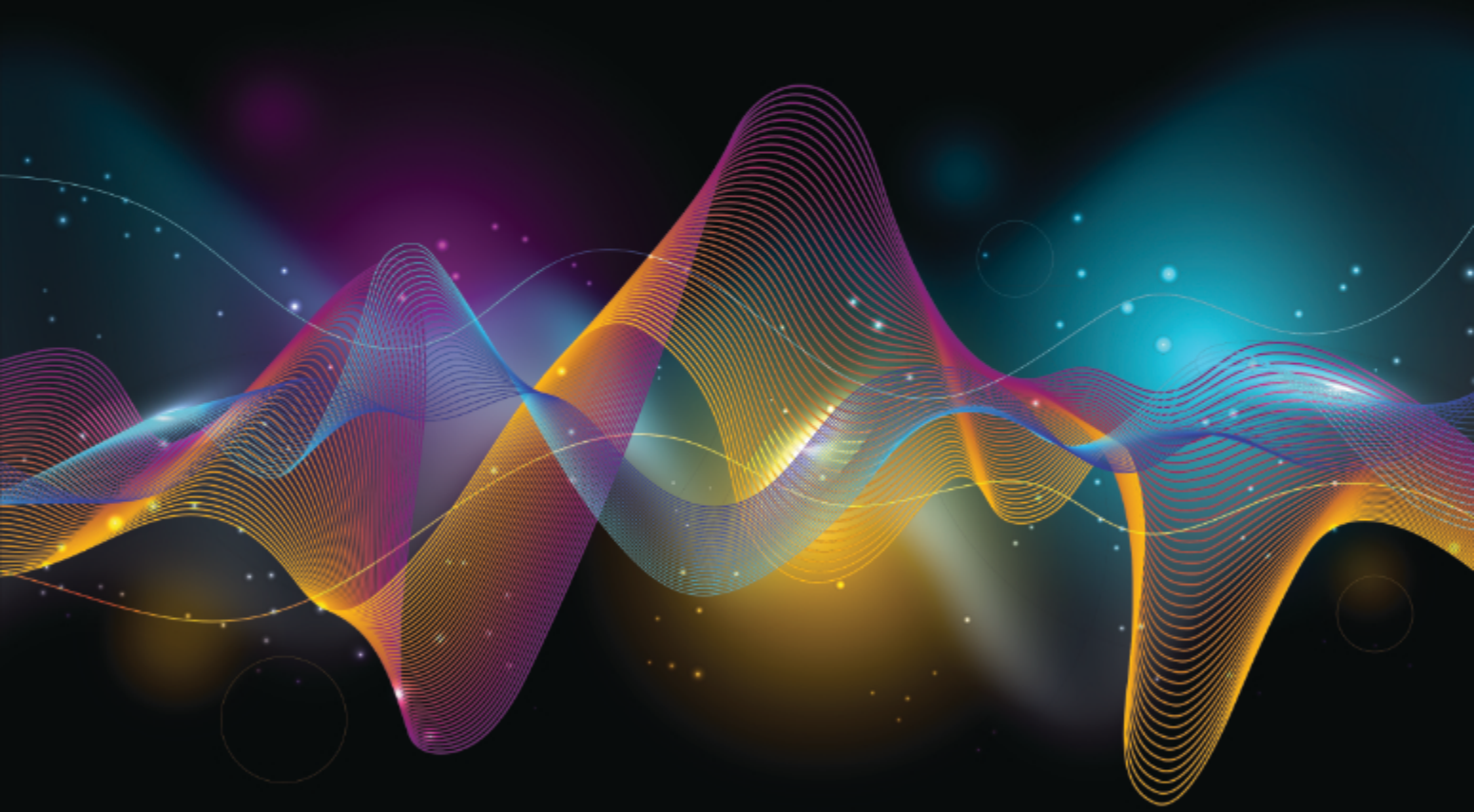

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# NEOHUMANIST Review

March 2025, Issue 4

# NEOHUMANIST Review

*Liberating human intellect from the shackles of dogmas that limit our evolution*

## MISSION STATEMENT

The Neohumanist Review journal is to explore a new paradigm on how the global human society can reorganize, from the local to the worldwide level, to promote the integral well-being and flourishing of all human and non-human beings. This journal invites multiple disciplines to address the most vexing planetary issues, such as social and economic inequality, ecological collapse, war and peace, mass migration, and technological transformations, from the joint perspective of art, science, philosophy, and spirituality.



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# From the Editor-In-Chief

As we enter what promises to be a momentous second half of the present decade, we at Neohumanist Review are pleased to offer another collection of up-to-date cutting edge articles of both general and particular interest.

Our fourth issue kicks off with three profound articles each addressing what we envision as the fullness of science; the rational potential to comprehend the wholeness of existence. Frank van den Bovenkamp takes the lead by inviting us to join an exploration of sound and colour, revealing profound links between perception and the mechanisms of creation. "The term 'Universe'," he writes, "conveys an inherent unity—a single, indivisible whole. The forces shaping the vast cosmos and the atom's inner realms are interconnected, springing from a shared source. Yet energy alone cannot explain the harmony and beauty of creation; a guiding principle must imbue it with purpose and order."

Suresh Emre argues that no single theory can achieve the unification of physical forces, let alone the unification of biological and mental phenomena with physics. In order to have wider and deeper scientific coverage, we need a conceptual framework that can integrate multiple perspectives. Drawing on breakthroughs in fields including complexity science, quantum mechanics, and formal logic, Aaron Frank takes this synthetical view further by integrating the spiritual worldview of yoga and Shrii P.R. Sarkar's neohumanism, offering an understanding of nature as a dynamic, living system which will come to redefine our relationship to concepts of 'truth'.

The shared conclusion of the above three writers is that rather than a single universal truth, many truths exist and must be situated in their appropriate context.

In a landmark essay, Shrii Prabhat Ranjan Sarkar echoes the findings and sentiments of the above scientists, finding that "the language of the 'inner voice' is always one and indivisible; only in the outer manifestation do we get so many languages."

Clinical psychologist Guldeniz Yucelen bridges psychology science with socioeconomic realities in the first installment of her two-part series on inferiority complex and psycho-economic exploitation. By surveying past and current causes and symptoms of disruptive socioeconomic dynamics, she finds they "shatter our birth right to feel safe and secure; to be treated equally in society; knowingly or unknowingly we develop self-demeaning, self-sabotaging ways of being in the world, such as appeasing others who have more power or status or making ourselves physically smaller, desperately believing or hoping it may help us feel safe and protect us."

In an overture to linking up India's spiritual culture with that of China's, Hao V. Zhuang draws up a powerful perspective on a shared subtle legacy of those two mighty civilizations. Perhaps it is what our decade needs the most, proper reminding of our common sublime humanity.

In response to an earlier article on climate change (M. Towsey, NR2) Roar Bjonnes rethinks climate change by way of offering a holistic, systemic approach to economic and environmental solutions.

The issue is rounded off by two reviews of Kathleen Kesson's fresh work on neohumanist education, *Becoming One With the World*. "We long for something different, and this book has it in itself to be a companion to teachers in their journey, if they so choose, to be part of making this difference," Shakil Ahmed writes. A compelling call for walking all that talk, then!

# Towards a Deeper Understanding in Physics

*Suresh Emre*

**Abstract**: With expanded scientific coverage, specialization became a necessity for the professional physicist, amplified by the "publish or perish" culture in academia. Overspecialization lessens the chances of seeing connections between different areas of physics. Still, finding connections is key to a deeper understanding. This is relevant for theories that try to unify electromagnetism, nuclear forces and gravity. No single theory can achieve the unification of physical forces let alone unify biological and mental phenomena with physics. In order to have wider and deeper scientific coverage we need a conceptual framework that can integrate multiple perspectives. A perspective can be a theory, a model, an equation, a language or even a methodology. In this article, I discuss the scope of such a framework and various approaches that would be relevant in its construction. We should be on the lookout for abstract generative constructs that may have more explanatory power.

## 1. Introduction

We have built a civilization based on the manipulation of electrons, but we don't know what an electron is. Nobel laureate Frank Wilczek's essay titled "*What is an electron?*"[1] emphasizes this fact. Albert Einstein succinctly stated the importance of this subject by saying "*You know, it would be sufficient to really understand the electron."* as quoted by Hans G. Dehmelt in his 1989 Nobel lecture. [2]

Gravity is another mystery. We operate airplanes and rockets, we send spacecraft to inter-planetary journeys, but we don't really understand gravity. We have theories of gravitation such as the Newton's theory and the Einstein's theory. With these theories we can predict the motion of objects with precision, but we still don't know what gravity is. According to Einstein's theory the mass curves the surrounding space-time. The smaller objects are attracted

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*Greater understanding of physics requires relating physics to life, mind and consciousness.*

towards the more massive object because of the curvature of space-time. Why does the mass cause a distortion in the surrounding space-time? We don't know.

What is the nature of space and time? What is dark matter? What is dark energy? What is charge? Why are there exactly 3 generations of fermions? There are million other questions like this, of course. There will always be new questions. While we are searching for answers to the new questions, we have to revisit and try to improve our answers to the old questions.

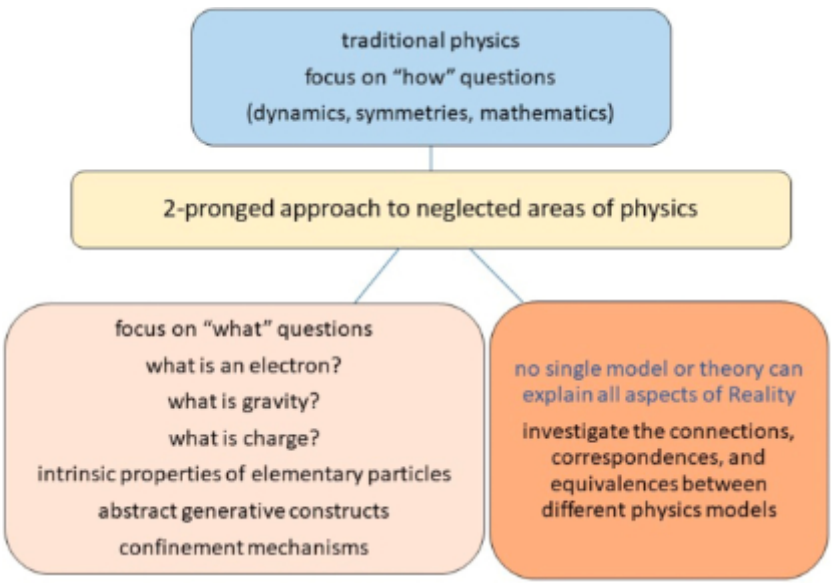
We have descriptions of relationships between various observables expressed in the form of mathematical equations. We call these equations physical laws. In addition to relationships, our equations also address dynamics by predicting how the observables change in time and space. This is great progress, but unfortunately, this is not true understanding. A deeper understanding will develop when we know more about the essence of those observables, not just their equations of motion.

In physics, an observable is any physical property that can be measured. Electric charge, quantum spin, invariant mass, position, momentum, angular momentum, energy are observables. The term "essence" refers a more fundamental construct that can explain several observables at once. If there is such a fundamental construct it could explain electric charge, quantum spin and invariant mass of an elementary particle at the same time. There are mathematically sophisticated theories such as the Quantum Field Theory and the String Theory that propose fundamental constructs such as quantum fields and strings; and other theories that propose information/computation as the basis. We should be on the lookout for abstract generative constructs that may have more explanatory power.

The other promising avenue is the construction of a conceptual framework that can integrate multiple perspectives of physical reality. No single model or theory can explain all aspects of physical phenomena. No matter how sophisticated the symbology is, no text, no picture, no diagram, no mathematics can represent the truth fully. Besides, the representation (text, picture, diagram, symbol, mathematics) requires interpreting minds and agreements among those interpreters on the meanings of the symbols. Therefore, a single theory of everything is not possible. Integrating different physics models in a conceptual framework will be more productive.

In more practical terms, my proposal is a two-pronged approach: 1) focus on the "what" questions, particularly on the "what is an electron?" and "what is gravity?" questions. This will lead to a deeper understanding of the invariants (intrinsic properties of elementary particles) and 2) develop a much better understanding of connections, correspondences, and equivalences between different physics models.

Greater understanding of physics also requires relating physics to life, mind and consciousness. I will expand on this in Section 17.



## 2. A Few Comments On "Understanding"

Large Language Models (LLM) can process information, summarize known facts and mimic human conversation but they do not understand what they are saying. Human understanding encompasses internal as well as external processes. This is the distinction between subjective (intuitive) and objective (mechanical) understanding. LLMs exhibit mechanical understanding only. Human beings too develop mechanical understanding first. Insights come later.

The term "insight" refers to the intuitive understanding which involves a mental process that relies on the accumulated personal knowledge on the subject matter. The mind connects the dots and sees a mental picture. This is primarily an internal process aided by external factors. For example, in physics we learn the mathematics of the physical laws (equations and their solutions in various potentials) first. This is mechanical understanding. We then hear commentaries about those equations from our teachers, philosophers, forums, blogs and even LLMs. The peripheral information in the form of commentaries help us internalize those equations.

The conceptual framework integrating multiple perspectives will externalize some of the internal processes of understanding. The "framework" will help us connect the dots.

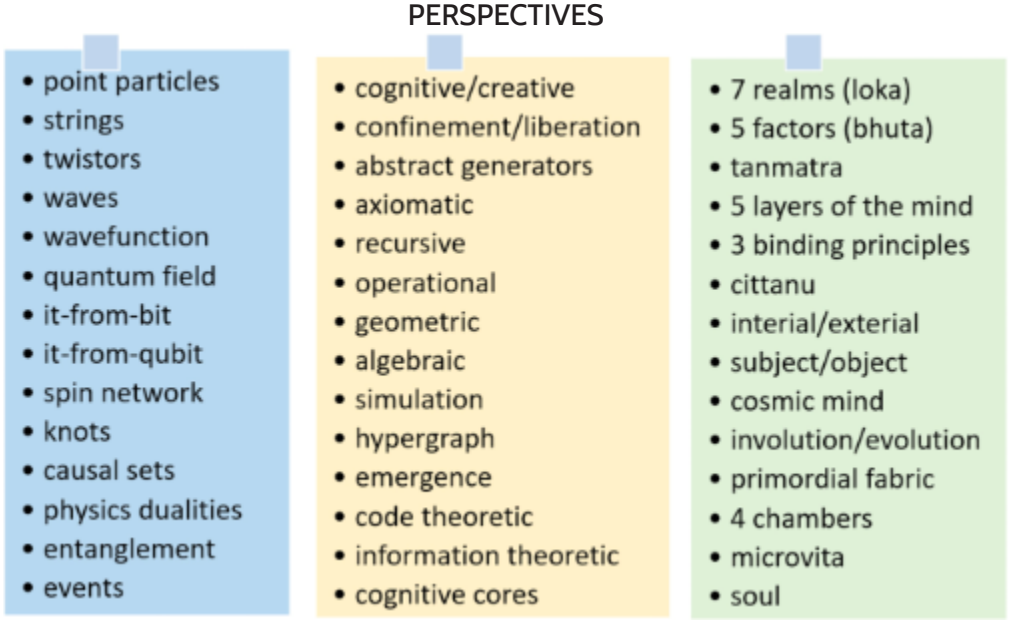
## 3. Connections

If one of the requirements of deep understanding is to have multiple perspectives. The corollary is to know the connections between the perspectives. Each perspective by itself is not going to be satisfactory. The collection of these perspectives as a whole must provide higher explanatory power. This is only possible when we understand the connections.

In physics terminology the "connections" are also known as "correspondences" or "dualities". One famous example of correspondence is the "equivalence principle" in the context of gravity. Einstein noticed that it is impossible to distinguish gravity from acceleration. Starting from this empirical fact Einstein was able to construct his theory of gravity, which later proved to be more accurate than Newton's theory of gravity. Here, there are two perspectives, and they are equivalent: (1) gravitation can be seen as acceleration in flat space or (2) as curvature in curved space-time.

Sometimes it is possible to find a transformation that maintains the form of the equation while the physical quantities are exchanged by their duals. We can think of this as switching the perspective. For example, the laws of electromagnetism are summarized in the form of Maxwell's equations. If one ignores the sources, or adds magnetic sources, Maxwell's equations are invariant under the switch: $\mathbf{E} \rightarrow \mathbf{B}$, $\mathbf{B} \rightarrow -\mathbf{E}$ where $\mathbf{E}$ and $\mathbf{B}$ are the electric field and the magnetic field, respectively. Such a transformation means that we are switching the electric charge with its dual (magnetic charge).

The magnetic charge has not been observed so far but this technique may still be useful. If it is difficult to solve the equation for a particular physical quantity, we may switch to the dual perspective and solve the same equation for the dual quantity and then convert the solution back to the original perspective. This may make the calculation easier and increase understanding as well.



*"The term insight refers to the intuitive understanding which involves a mental process. The mind connects the dots and sees a mental picture. This is primarily an internal process aided by external factors."*

Michael Atiyah's review article[3] on the dualities in mathematics and physics is very educational.

Discovering connections between different branches of physics improves our understanding as well. Discovery of the Brout-Englert-Higgs mechanism[4] of particle physics was based on the discoveries in superconductivity research in condensed matter physics.

The mental activity of finding connections is very different from the mathematical or the algorithmic thinking. Finding connections is also very different from answering "how," "why", "what" questions. As scientists develop their intuitive faculty, more connections will be found.

## 4. Emergence

The integrating framework will hopefully establish the connections between the laws of the microscopic world and the laws of the macroscopic world. The integrating framework will also provide a better understanding of emergence.

For a comprehensive but dense philosophical examination of emergence, the SAP (Stanford Encyclopedia of Philosophy) article titled "Emergent Properties"[5] can be studied. A more readable review of emergence is in IEP (Internet Encyclopedia of Philosophy)[6]. Interestingly, neither article mentions the work of Roger Penrose[7] and Howard H. Pattee[8], whose ideas have been very helpful for a clear understanding of the closure problem of emergence.

Examples of weak emergence in physics are described in Phillip W. Anderson's classic article "More is Different"[9]. Other examples of emergence can be found on the website of the Dutch Institute for Emergent Phenomena[10]. More examples can be found in the publications of the Santa Fe Institute which has been very effective promoting emergence as a unifying theme[11].

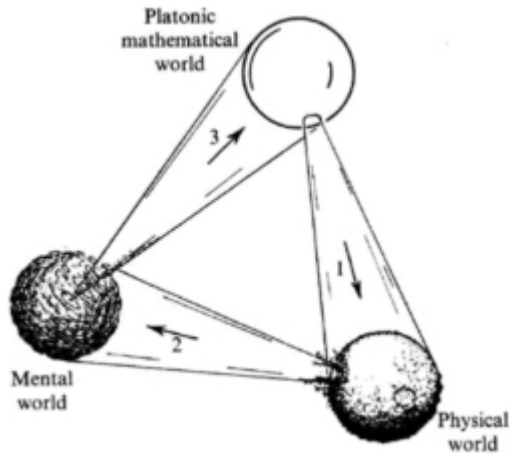
In weak emergence, as demonstrated in condensed matter physics, the models developed specifically for the emergent level have more explanatory and predictive power. Here, there is no claim about the ontological distinction of the emergent level but there is an admission of explanatory weakness of the models of the base level. The explanatory weakness is assumed to be due to lack of computational power or lack of information about the initial conditions. The explanatory weakness is sometimes attributed to an undiscovered law of nature.

In the strong version of emergence, the emergent realm is ontologically distinct. Therefore a new theory is needed to explain the emergent behaviors. Organic life is emergent. If you are arguing for strong emergence, you are claiming that organic life

is ontologically distinct, therefore subject to different laws of nature. If you are arguing for weak emergence, you are expressing your hope that biology can be reduced to physics someday.

## 5. Closure Problem of Strong Emergence

> *"Platonic-mathematical, physical, and mental – has its own kind of reality, and where each is (deeply and mysteriously) founded in the one that precedes it (the worlds being taken cyclically)"7.*




*3 worlds and 3 mysteries of Roger Penrose7*

Individual minds emerge from the physical realm but they cannot be completely explained by physical processes. This is the closure problem of strong emergence.

The biological world (organic life) is not shown in Penrose's picture. The biological world is assumed to be part of the physical world. Penrose is discussing a cyclical relationship among the three worlds. That's why he uses the term "preceding" instead of "lower" when he refers to three worlds.

The reader might also be interested in the debates[12] of Mark Alford, Max Tegmark, and Piet Hut. Their debate was inspired by the "3 worlds and 3 mysteries" of Penrose.

Howard H. Pattee[8] argued that the closure problem can be solved by proper theory construction in the domain of biology. His proposal is to treat rate-independent memory structures and rate-dependent dynamical laws as distinct categories and study their interactions. This is known as semiotic closure. Pattee originally referred to semiotic closure as "semantic closure." The term "semantic" connotes with "meaning". The concept of semantic/semiotic closure applies to systems that enclose their own meaning. If the system contains the definition of itself, in other words, if there is self-reference then the system can replicate itself. This opens the gates of biological evolution. Pattee's solution was inspired by the discovery of the DNA structure and its function, which is an example of how a system can enclose its meaning within itself.

Semiotic closure insists on the causal closure of the physical. Semiotic closure cannot be achieved if there is strong emergence. The underlying assumption of semiotic closure is the belief that Nature records the code (laws) of the emergent behavior on a physical substrate. By proper theory construction the "code" can be deciphered and its activation logic detailing how this code gets realized in space-time-matter can be explained. As long as the code (laws) of the emergent level is implemented on a physical substrate, the causal closure of the physical is achieved. This seems to be a good argument in the biological world. But, can we generalize this? Does Nature always record the code of emergent behaviors on a physical substrate? My answer is no…not always.

Many mathematicians and physicists sense that there is an abstract realm. They have clues that the physical realm emerged from the abstract realm. Roger Penrose, Max Tegmark and many others call the abstract realm the Platonic mathematical world. In the Eastern philosophies we find very sophisticated discussions of the abstract realm and its various subtlety levels. The abstract realm is currently a complete unknown to science. Regardless, if science discovers someday that the physical world emerged from the abstract realm, then scientists will no longer be able to claim that the individual mind is an epiphenomenon of the physical brain.

Here's why. Not all aspects of the emergent realm can be explained by the characteristics of the preceding realm. Some aspects of the emergent realm may be expressions of the prior realms in the progression. The individual mind emerges from the physical realm but it cannot be completely explained by the physical processes because the physical realm itself emerged from an abstract realm in the first place. The individual mind must have some elements exhibiting the characteristics of the abstract realm. Therefore, the individual mind is not entirely physical.

## 6. Symmetries

There must be thousands of articles and books about the importance of symmetries in the description of physical reality. I recommend the PNAS article[13] written by David J. Gross for an overview of the role of symmetry in fundamental physics.

Discovering the symmetries or arguing that a particular symmetry appears to be broken now but it was in play in an earlier epoch was a successful

method in physics. The low-hanging fruits were picked by this method. The high-hanging fruits will require other methods.

Another point often ignored: let's assume we eventually find a symmetry group large enough and capable enough to cover all elementary particles. We then have to explain why and how this wonderful symmetry was broken to produce the differences observed in elementary particles.

## 7. New solutions of the physics equations

Discovering the laws of physics and writing them down as mathematical equations is one thing and finding the solutions of those equations is another. It took Einstein a decade to formulate the law of gravitation in terms of an equation. It took a century and hundreds of physicists to find all the mathematical solutions of that equation in different physical settings. The same goes for the Dirac equation. It took Dirac only a year to come up with his famous equation for the relativistic motion of an electron. People are still applying the Dirac equation and finding solutions in the presence of various external fields. Finding solutions can be more difficult than formulating a law of physics in terms of an equation. Every new solution improves our understanding. For example, the specific solution of Einstein's General Relativity equation pointing to gravitational waves. The eventual detection of them on Earth showed us that space-time is a physical entity. That's a dramatic improvement of our understanding.

## 8. Geometric approach

There are many physicists who believe in the idea of explaining all physics using geometric concepts. Einstein was a true believer in geometric thinking and he influenced many others. Theories of physics with geometric interpretation are easier to internalize because humans are primarily visual thinkers. Geometric explanations allow us to visualize the forces.

Among the geometric concepts used in physics, curvature concept is the most popular. Einstein's equation for gravity is an example of a theory that uses the curvature concept.

In the geometrical approach to fundamental physics, the primary strategy is to extend the definition of space-time. If the space-time has additional spatial dimensions at the microscopic scale, then certain characteristics of elementary particles might be explained by this microscopic structure. That's the idea. Two problems: 1) So far there is no experimental evidence for this hypothesis. 2) Even if we find evidence for extra spatial dimensions, it will be very difficult to determine the shape and size of these manifolds.

## 9. Algebraic approach

Algebraic approach to physics differs from the geometric approach by its emphasis on quaternions, biquaternions, and octonions. Algebraic theories of physics are less popular because they are less visual

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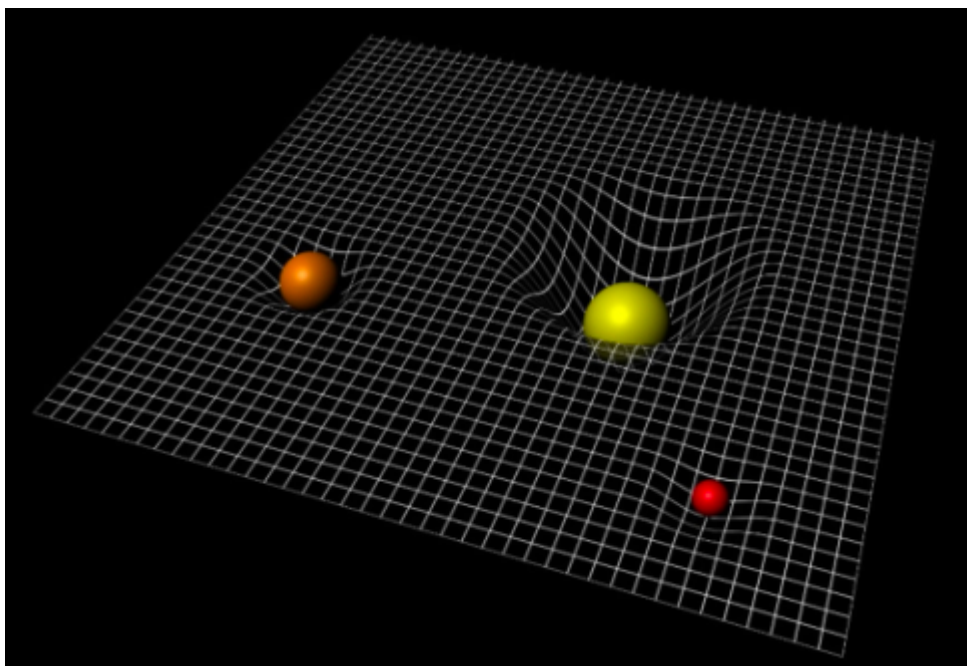

*Symbolic representation of space-time curvature (European Space Agency)*

# Systems Thinking and Embracing the Plurality of Truths

*Aaron Frank*

**Abstract**: Through uncovering and manipulating the patterns of nature, reductionist approaches have been remarkably effective in a variety of domains within science and engineering. Due to its success, the mechanistic sensibilities of this paradigm have extended beyond practical application and increasingly shape the cognitive frames which inform our ideas of truth about reality itself. By conflating predictive power with metaphysical 'truth,' this paradigm proposes a view of existence as being a static and rigid machine of cause and effect which overlooks the inherent nonlinear and chaotic movements of nature. Drawing on breakthroughs in fields including complexity science, quantum mechanics, and formal logic, this essay integrates the spiritual worldview of yoga and P.R. Sarkar's Neohumanism to offer an understanding of nature as a dynamic, living system which will come to redefine our relationship to concepts of 'truth'. Rather than a single universal truth, many truths exist and must be situated in their appropriate context.

At the annual TED Conference in 2022, surrounded by an audience of high-profile scientists, entrepreneurs, and intellectuals, Elon Musk was asked by his interviewer to describe the motivation fueling his activities. The response, perhaps surprising in the context of a discussion about space rockets and electric cars, was a philosophical self-assessment of his innate desire to understand the foundational truth of reality:

"Whatever condition I had, I was just absolutely obsessed with truth. So, the obsession with truth is why I studied physics, because physics attempts to understand the truth of the universe. Physics is just, 'what are the provable truths of the universe', and truths that have predictive power," he told his audience (TED, 2022).

This description provides insight to Musk's metaphysical worldview and relationship to 'truth'. By proposing that physics is the discipline best situated to uncover it, Musk is giving expression to

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*"Reductionist physics in the context of Elon Musk's views of 'truth' is far more about finding useful tools to control nature than it is about defining fundamental 'truth'."*

an entirely common epistemic approach to 'truth-seeking' grounded in a materialist/reductionist paradigm which has operated as the dominant modality of western culture since at least the sixteenth century (Lent, 2017).

The rationale for viewing truth through the lens of physics and predictive power typically goes as follows:

Because nature operates according to consistent and discoverable laws, these laws must exist in the fundamental structure of reality itself. Therefore, there are external and mind-independent objective truths such as mathematical statements, which are universal in nature and therefore do not exist as a result of being perceived by the human mind. These truths, which exist irrespective of a subjective knower, indicate that math itself is discovered and not invented. In this view, the work of physics is to develop models that align with some fundamental truth about the nature of reality, and the success of a model is a test of how closely we're able to reflect something intrinsically 'true'. Therefore, reality must be objectively 'real', separate from the observer, independent of mind or perception, and can provide feedback to the observer in the form of predictive success.

In this worldview, something is "true" to the extent that it helps us predict future outcomes. Truth is also universal, singular, and the scientific journey of progress is a climb up a fixed hierarchy of discovering truer and truer models (Eriksen, 2024). It is also common within this framing to view this as a project of learning to "command nature" (Eriksen, 2024).

When intellectuals describe truth in this way, what they are describing is a machine. Prediction works because reality is presumed to be a fixed, rigid, and stable system of cause and effect.

In many respects, this reductionist approach is certainly useful. Discovering the consistent rule-

based principles guiding nature has allowed us to improve society within areas including engineering, agriculture, medicine, astronomy, and computing. Not satisfied to allow useful models to be considered merely 'useful' however, their ability to 'command nature' has persuaded many intellectuals that they are also a proxy for the fundamental truth of reality. As a result, reductionism, with its mechanistic sensibilities, has not only come to dominate our scientific methodologies but also our conceptual frames for understanding existence itself.

As cognitive historian Jeremy Lent demonstrates in his work, "the cognitive frames through which different cultures perceive reality have a tremendous impact on guiding their historical direction" (Lent, 2017). Lent's argument builds on philosopher Stephen Pepper's concept of "root metaphors", foundational assumptions about the nature of reality which operate as hidden assertions underpinning a culture's knowledge system (Pepper, 1935). Those concepts of truths then inform answers to questions pertaining to 'the meaning of existence, 'our purpose,' and 'how we should conduct ourselves in the world.' The structures of thinking guided by a society's root metaphors will shape their cultural values and how they make socio-political choices within their environment.

Therefore, it's worth taking Elon Musk's machine-centric views of 'truth' quite seriously. More than 200 million people follow his account on X and given his ventures in space technology and social media, it's difficult to point toward an individual more influential in shaping our collective cognitive frames and subsequently steering the direction of human activity on earth and in our solar system.

His worldview builds on a variety of conceptual premises that often go unquestioned. They postulate a metaphysics, a term I use to refer to a system of thought regarding the fundamental nature of reality, defined by assumptions situated within a context of scientific materialism, ontological reductionism, and philosophical realism.

As this essay explores, some of the most important discoveries of the last century in fields including environmental science, quantum mechanics, and formal logic are piecing together a view of reality suggesting a metaphysics quite different from today's dominant worldview. From Kurt Gödels' incompleteness theorems to Edward Lorenz's discovery of deterministic chaos, western science is uncovering a nature governed by fundamental limits to the "universality" of our models, non-linearity and unpredictable change, and one where the relationship between parts is far more revealing than any one isolated piece of nature.

And we're uncovering a universe filled with a plurality of truths, each suited to its appropriate context.

## Scientific Materialism

At the core of Musk's worldview, as is true for many influential thinkers today, is the idea that all phenomena in the universe, including consciousness, can be explained within a materialist paradigm. It's certainly not a new idea that physical matter is the fundamental substrate of reality (Stoljar, 2024), or that consciousness somehow emerges from complex biochemical activity in the brain. Many scientists simply take the fact that the universe is composed of matter, at a foundational level, as self-evident.

Elon Musk has repeatedly stressed his desire to build rockets that can take us to Mars in order to 'maximize the probable lifespan of consciousness' (Musk, 2024), an indication of his foundational materialism. In this understanding, human bodies are consciousness producing machines and so some number of them must be relocated to Mars, now a celestial safety deposit box, in order to preserve the existence of it in our universe.

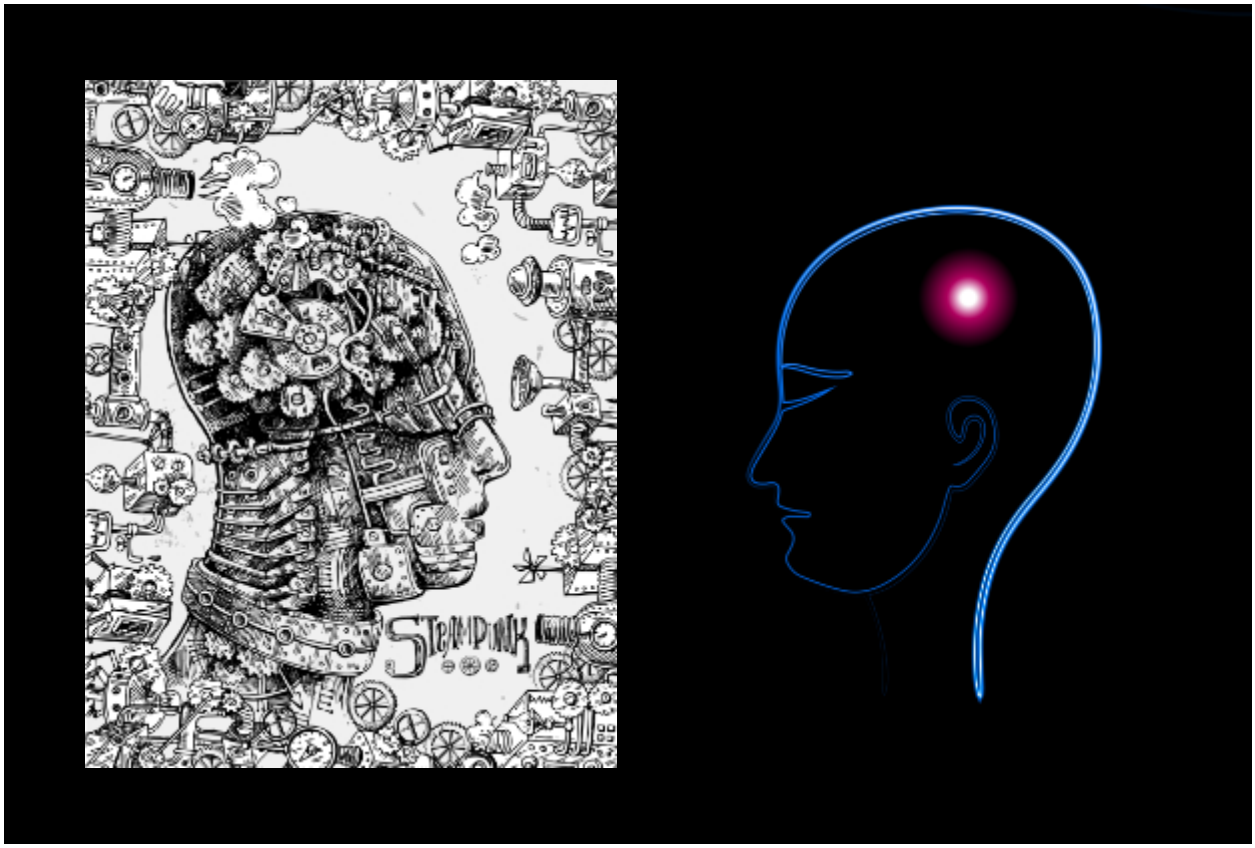
Materialism as a paradigm for explaining fundamental reality, however, is certainly reaching its limitations even within physics itself. Nima Arkani-Hamed, a theoretical physicist at the Institute for Advanced Study in Princeton has argued that "spacetime is doomed" (Arkani-Hamed, 2017) meaning that spacetime does not appear to be fundamental reality but rather an emergent phenomenon built on something deeper. Arkani-Hamed's idea is supported by his work introducing 'the amplituhedron' (Arkani-Hamed, 2017), a geometric structure that simplifies calculations of particle interactions which doesn't rely on spacetime or locality (the assumption that particles only affect those close to them), both of which are core assumptions in traditional physics.

By showing that physics can be formulated without reference to spacetime, it both challenges the deeply held view that spacetime is the arena in which all phenomena occur and suggests that spacetime emerges from something more fundamental and may not be the ground from which our conscious experience emerges.

At a minimum, Arkani-Hamed's work suggests we'll need to reconfigure many of the core assumptions that govern our dominant views of reality and the metaphysics they inform.

## Reductionism

Since materialists correctly point out that physical reality is guided by a collection of consistent rules, they conflate the usefulness in discovering these principles as being answers to fundamental questions of truth. The pursuit of a 'theory of everything',




*"Showing that physics can be formulated without reference to spacetime, challenges the deeply held view that spacetime is the arena in which all phenomena occur, and suggests that spacetime emerges from something more fundamental and may not be the ground from which our conscious experience emerges."*

which we now know doesn't exist (Bischoff, 2024), is fueled by the alluring promise of perfect knowledge and the total control of nature.

To achieve this, a given system must be 'reduced' to some defined set of fundamental components to analyze and measure its behavior. In this paradigm, truth can only be known about that which is quantified, modeled, and predicted or can be formalized within a symbolic system like math or language. While reductionism as a methodology is certainly a useful tool, it fails as an ontology for accessing 'truth' in several significant ways.

Humanities scholar and AI researcher Alix Rübsaam, points out that reductionism assumes that objects can be demarcated into symbols in a universally defined or singular way; a mode of thinking which has only accelerated in the age of digital computation. Rübsaam points out that the process of formalizing the world into datasets ready for analysis is always a culturally embedded practice which can vary greatly. It is therefore a subjective process contingent on a perceiver making choices how to structure their taxonomies and modes of analysis (Rübsaam, 2020). This challenges the views of universality which pervade reductionist ontologies.

Complex Systems scientist, Carlos Gershenson has pointed out that "reductionism is contingent on separation and so ignores interactions between parts. If interactions are relevant, then reductionism fails as a tool for studying, analyzing, and understanding that phenomena or system" (Gershonsen, 2011).

And finally, even within physics, reductionism makes frequent use of approximation. Certainly useful as a tool due to the complexity of the real-world, by simplifying the problem physicists can obtain approximate solutions that capture the essential behavior of a system. One example is the 'ideal gas law', an equation used to assume certain properties that no gas actually possesses in the real world. The equation allows for the study of their behavior since the behavior of real gases are described closely by the equation (Britannica, 2024). Here, reductionism is obscuring fundamental truths about the properties of a gas, a feature and not a bug of the methodology, in order to be useful. As we'll explore, classical Newtonian mechanics is built entirely on this approach because real numbers with infinite precision cannot be collected experimentally in the real world (Volovich, 2011).

Reductionist physics in the context of Elon Musk's views of 'truth', therefore, is far more about finding useful tools to control nature than it is about defining fundamental 'truth'.

## Philosophical Realism

Central to Musk's metaphysics, rooted in philosophical realism, is the idea that an objective reality exists independently from a perceiver. In this view, a separation is assumed to exist between a subjective knower and the objective known. The idea that the truth of reality is mind or perception independent, however, establishes exactly the type of subject/object duality being increasingly undermined by recent developments in fields like quantum mechanics.

While realism is complex territory within philosophy and selectively applied by philosophers depending on the subject matter (Miller, 2024), technologist intellectuals like Musk tend to default to realist views when discussing 'truth' and predictive power.

The discoveries of quantum mechanics during the 20th century raise serious doubt that there is a separation between the observer and the observed, a core assertion of realist thought. One of the implications of quantum mechanics is that 'a quantum system behaves differently when we observe it than how it behaves when we are not observing it.' (Richheimer, 2021). Though still debated with many finding ways of preserving materialist interpretations, Stanford trained scientist Steven Richheimer points out that the implications seem to be that an independent objective reality doesn't exist. "Somehow observation is fundamental to how reality manifests" (Richheimer, 2021), which compromises the mind-independence and subject/object duality held by realism. Later, this essay will address the apparent mind-independence and objectivity of math.

Rübsaam points out that the philosophical context underpinning reductionist approaches to science in the last few centuries, especially in the west, often held that if a perceiving subject is merely 'reasonable', which is a culturally embedded concept defined and socially reinforced by those in positions of authority, then reality can simply be perceived 'as it really is' and is therefore objective (Rübsaam, 2020). This sleight of hand, often invisible to realist thinking, turn a perceiving subject assumed to be free from foundational assumptions underpinning their methodology of inquiry, into a neutral observer of an objective reality.

Even within formal logic and mathematics, the idea of being an assumption-free neutral observer fell apart with the discovery of Kurt Gödel's Incompleteness Theorems, discussed later, which points out that "what mathematicians can prove depends on their starting assumptions, not on any fundamental ground truth from which all answers spring" (Wolchover, 2020).

*Much like our universe itself, complex systems are adaptive in that they can respond dynamically to changes in their environment, are self-organizing, and function without regard to an external control.*

Therefore, any formal model of reality is built on some foundational assumptions which themselves cannot be proved from within that model. Making choices about assumptions is necessarily the starting point, therefore scientific, mathematical, or philosophical inquiry into the nature of reality must involve an inseparable link between a subject making choices of the method and structure of inquiry and the object being analyzed.

The view of seeing nature as a machine, while useful, has extended far beyond its appropriate domain and is fueling a global culture built on the principles of separation and unconscious linear machine-like repetition. If culture shapes our values, and those values shape history (Lent, 2017), we're embedded in a society whose metaphysics tells us we, as conscious subjects, are separated from some fundamental source of reality, which is one that could be described as a static, rigid, and lifeless machine.

This, in turn, is driving catastrophic outcomes on our planet.

These views need revision to account for a new and rapidly emerging paradigm of complexity science and systems thinking. This emerging modality suggests that reality may in fact hold the intrinsic qualities of being dynamic, interconnected, and in some sense even 'alive'.

## The Emerging Paradigm of Complex Systems

To understand what complexity science is, it's helpful to visit its origin in the lab of MIT meteorologist Edward Lorenz in 1961, as recounted in James Gleick's Chaos. Fueled by the deterministic promise of Newton's laws, Lorenz hoped to use the data-processing horsepower offered by computers, then a breakthrough technology, to reveal the rule-based activities of weather much like astronomers had uncovered the movement of our planets.

At first, Lorenz's results looked promising. Though computational limits forced him to shape his model into a relatively simple collection of rules, Lorenz mesmerized his colleagues who would gather around the printout of his god-like prediction machine. Over time, familiar patterns emerged which mimicked the behavior of observable weather in the world. The assumption then, was that the difference in forecasting weather from predicting the movement of our planets, was simply one of data processing workload. Once computers became capable of handling the increased number of calculations involved in meteorology, forecasting would surely become as exact as planning the movements of the cosmos.

That dream collapsed entirely by accident one morning in the winter of 1961.

Hoping to view one of his models through an extended amount of time inside a graphical interface he was developing, Lorenz decided to re-run a simulation he'd previously conducted. To lighten his workload, he gave the second simulation's computer its initial conditions from a printout of the first simulation taken at the midway point of its analysis. The second run should have matched the output of the first, yet when Lorenz returned to his office and discovered a model which had quickly and wildly diverged, his first instinct was to assume the computer had malfunctioned.

When Lorenz discovered the true culprit of the discrepancy, however, the insight would, in the words of the committee that would later award him the Kyoto Prize in basic sciences, "[bring] about one of the most dramatic changes in mankind's view of nature since Sir Isaac Newton." (Chang, 2008).

The computer that ran his models stored data out to six decimal places, but to save space on his printed results, it was shortened to only three. So, an initial condition in the first simulation of .506127 became .506 in the second. Lorenz had assumed that the rounded off numbers, reflecting a difference of one part in a thousand, was inconsequential (Gleick, 1987).

His discovery laid bare the idea, core to understanding complex systems, that predicting the future outcome of systems like weather are tremendously sensitive to their initial conditions. Though the system may be deterministic, perfect prediction is an impossibility. Lorenz's discovery pointed out that scientists 'marching under Newton's banner' of mechanistic determinism, "always made one small compromise, a compromise so small working scientists often forgot it was there lurking in a corner of their philosophies like an unpaid bill. Measurements can never be perfect." (Gleick, 1987).

*Continued on page 58*

# The Sounds and Colours of Creation

*Frank van den Bovenkamp*

**Abstract**: The term "Universe" conveys an inherent unity—a single, indivisible whole. The forces shaping the vast cosmos and the atom's inner realms are interconnected, springing from a shared source. Yet energy alone cannot explain the harmony and beauty of creation; a guiding principle must imbue it with purpose and order.

Through the exploration of sound and colour, this essay reveals profound links between perception and the mechanisms of creation. Bridging quantum physics, cosmology, and philosophy, it draws upon diverse perspectives, including foundational ideas of Shrii P.R. Sarkar and key Western thinkers, to deepen our understanding of the Universe's creative forces.

Practical experiments invite readers to experience these principles firsthand, from recreating the sound AUM with precise acoustic ratios to uncovering the geometric origins of primary colours. Together, these insights and experiences open a tangible window into the deeper harmonies of creation.

## 1. From Sound and Light to Vowels and colours

We hear sounds—particularly vowels in this context—and see colours. Yet we do not hear or see the sequence of troughs and crests that constitute a wave. Instead, our senses "wrap up" or integrate these waves into singular perceptions. What we perceive as sound or light is thus an inference, a unified experience derived from the underlying waveforms.

In physics, every wave or interaction is associated with a certain **"action"**, a concept as fundamental as it is powerful (Baez, J. C. & Muniain, J. P., 1994). While action is somewhat analogous to energy—both are inferred from their effects and cannot be directly measured—action occupies a distinct role. Unlike energy, which is conserved, the action of a physical wave or process remains stationary. This property of stationarity allows physicists not only to predict the evolution of a process over time but also to derive the conservation laws governing that process. In this sense, action can be seen as even more fundamental than energy.

The way conscious perception integrates a wave into a singular experience is strikingly reminiscent of the role of action in physics. This resemblance potentially blurs the boundaries between physics, cognitive science, and metaphysics, suggesting that perception, often dismissed as a purely subjective, biological phenomenon, might hold the key to deeper understanding the organizing principles of creation itself.

It is thus believed that, beyond their measurable properties, sound and light possess a profound vibrational structure, carrying deeper significance. This section will focus on the internal structure of vowels and colours—an aspect that is both deeply familiar in everyday life and well-studied in research. While action reveals the organizing principles behind physical processes, the hidden structures in

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vowels and colours hint that perception may not be merely a subjective experience but involves a subtle, physical process, grounded in the same organizing principles. In the following sections, we will explore how this structure connects to foundational principles in physics and quantum mechanics.

Sounds become particularly significant when they not only convey information but also possess an inherent structure. This is especially apparent in the context of the acoustic roots. Consider vowels, the most articulate sounds in human speech. Vowels such as /a:/ in "spa" or /o:/ in "more" arise from resonances in the nasal and oral cavities, known as **formants**. Each vowel is characterized by two key formants, F1 and F2, which have specific frequencies and ratios. These formant combinations give each vowel its distinct identity. While this formant structure has profound implications in linguistics and metaphysical contexts, it has yet to find a role in physics. We might pause to marvel at evolution's ingenuity in crafting such a versatile vocal apparatus, capable of producing this intricate structure.

When it comes to light and colour, the analogy to vowels or textures in sound is less obvious—or is it? While light presents a continuous wavelength spectrum spanning approximately one octave, a discernible structure emerges in the **primary colours** (e.g., the colours of the rainbow or those used in practical colour mixing). Like vowels in sound, primary colours lack fundamental significance in physics. Their positions in the spectrum are universally recognized, yet unlike formants, they cannot be directly detected. Despite this, the primary colours are thought to reflect something deeper about the fabric of creation.

The question often arises: are the primary colours directly determined by the retina's colour-sensitive cones? While humans possess three types of cones broadly responsive to red, green, and blue tones, their sensitivity curves overlap significantly and do not peak precisely at those colours. Rather than being tuned to specific primary colours, the cones evolved to collectively perceive the full spectrum as "white," providing a basis for colour perception.

## 2. The Spherical Nature of Sound and Light

The unity implied by the term "Universe" calls for a framework that seamlessly bridges the vast scales of creation—from the cosmic expanse to the subatomic realm—while avoiding the complexities and

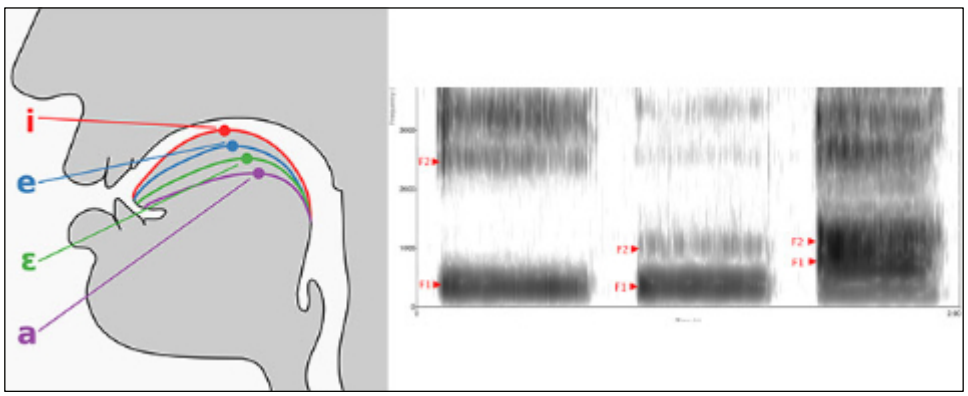



*Figure 1. Idealized tongue positions for cardinal front vowels with the highest point indicated; Spectrogram of vowels [i, u, ɑ]. Images source: en.wikipedia.org/wiki/Vowel.*

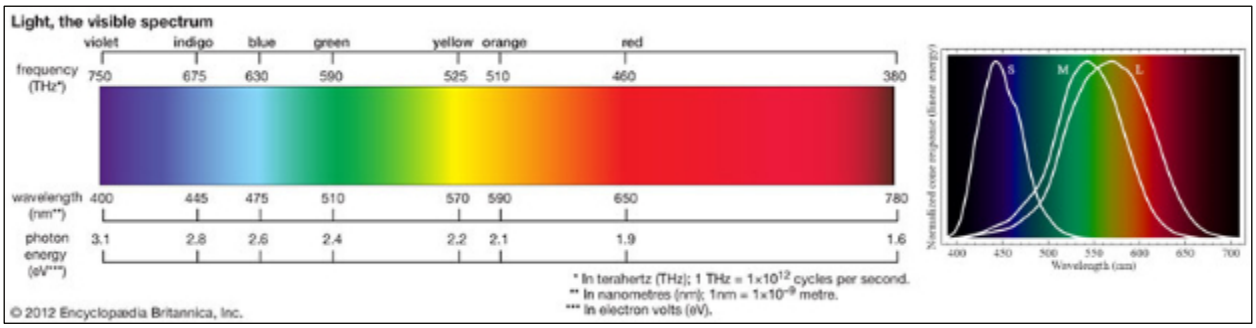



*Figure 2. The visible spectrum, indicating primary colours (source: E. Britannica); Normalized responsivity spectra of human cone cells, S, M, and L types (source: en.wikipedia.org/wiki/Cone_cell).*

instabilities of higher-dimensional constructs. Such a framework can be found in the simplicity of a **2D manifold**, specifically a sphere, whose geometric properties are entirely intrinsic, as demonstrated by the Theorema Egregium (Stewart, I., 1987). Unlike many higher-dimensional spaces, the 2-sphere exists as a self-contained entity that embodies both stability and connectivity. Its curvature, an intrinsic measure of how the surface bends and relates to itself, directly encodes physical dynamics such as motion or wave propagation, without requiring an external framework. This intrinsic geometry allows waves and interactions to arise naturally from the properties of the sphere itself. The concept of action, which integrates energy and geometry, directly links this manifold to the physical evolution of the universe, providing a powerful lens through which to understand creation.

The spherical ontology of sound and light reflects this intrinsic geometry in different ways. Sound, for example, typically spreads in all directions, forming a spherical wavefront emanating from a source and enveloping a volume of space. The "sound sphere" refers to this wavefront's two-dimensional surface, which is significant in the context of creation.

A common point of confusion is how a sphere can be considered two-dimensional. The distinction lies in focusing on its surface, which requires only two coordinates to define any point. To illustrate, an ant crawling on a balloon has two degrees of freedom—it can move in any direction across the surface, but not inside or away from it.

In the case of light, its "spherical nature" does not arise from its propagation but from its polarization. Polarization refers to the oscillatory direction of a light wave, which can vary continuously, including "left-handed" and "right-handed" helices relative to the direction of motion. These polarization states represent degrees of freedom, and their totality can be mapped onto a sphere known as the Poincaré sphere (Hecht, E., 2017). Importantly, while polarization introduces

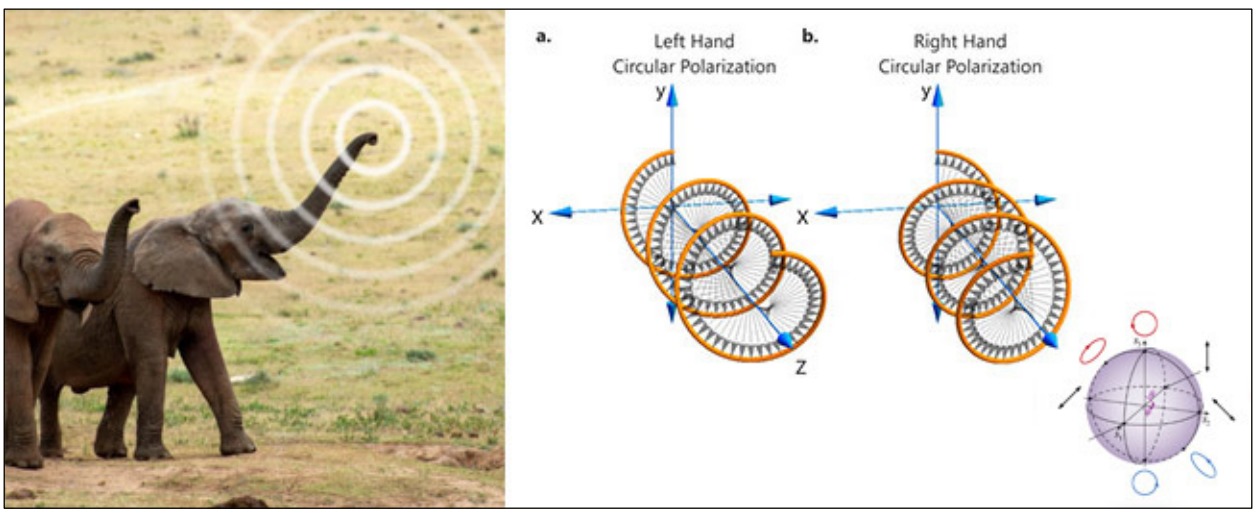



*Figure 3. Spherical Degrees of Freedom in Sound and Light. Sound and light both exhibit spherical characteristics: directly for sound through its spreading wave front, and indirectly for light, as seen in the intrinsic geometry of its polarization.*

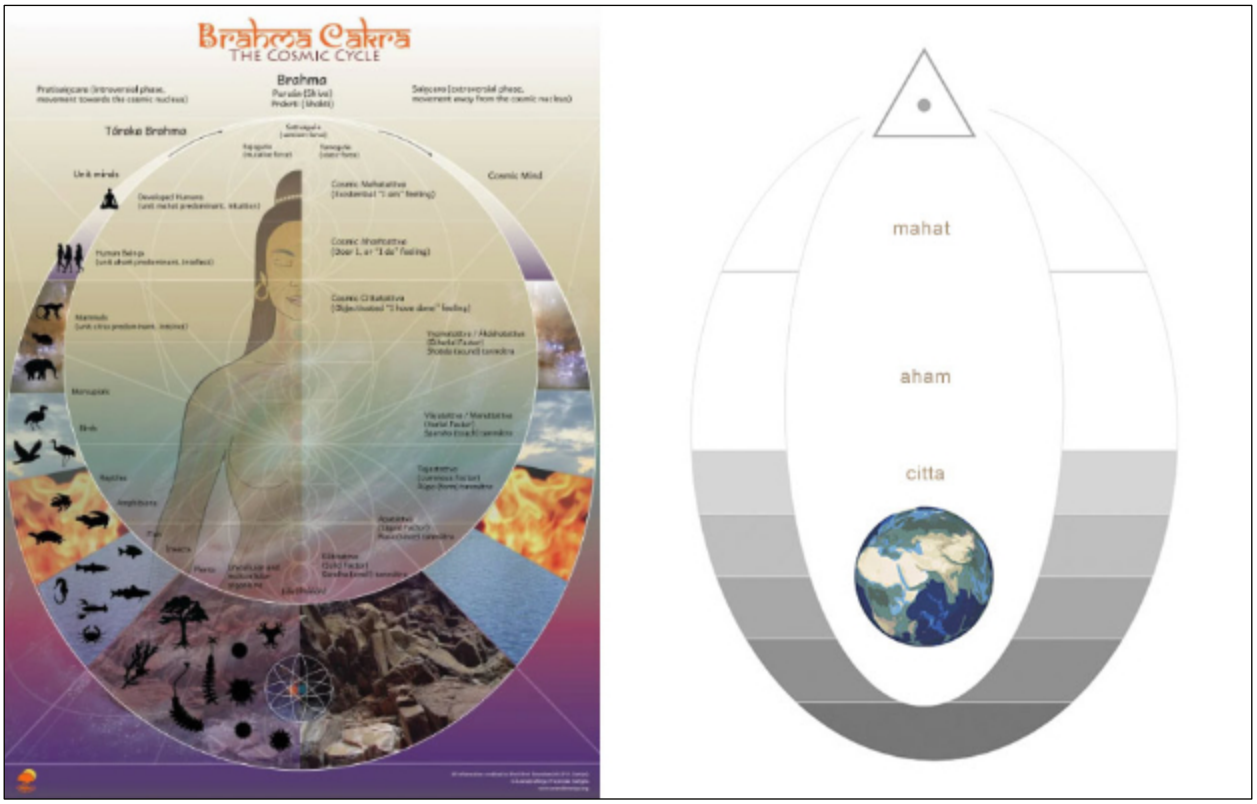
additional degrees of freedom, it does not alter the fundamental Planck-Einstein relation E=hf. This subtle invariance reflects the underlying constancy in the action, even as the polarization state varies. While the Poincaré sphere is not a physical object, it is intrinsic to the very nature of light and reflects its deeper geometric structure. Like the spherical nature of sound, this reveals a shared framework that hints at a unified approach to understanding physical reality.

In summary, sound and light, beyond their perceptual qualities, share a profound inner structure that often escapes the traditional scope of physics. Both possess a spherical attribute, albeit in different ways—sound through its propagation, and light through its polarization. Together, these insights pave the way for a deeper and more unified understanding of sound and light, as suggested by P.R. Sarkar: *"Every vibration in this universe has colour and sound. Every vibration also represents a particular idea, and hence each idea has a vibrational sound and vibrational colour."* (Sarkar, 1985). This spherical framework not only clarifies their unique properties but also strengthens the bridge between perception and physical principles—a theme we will continue to explore in the chapters ahead.

## 3. A Review of the Cycle of Creation

The idea that "everything moves in cycles" is a familiar refrain, yet it encompasses more than physical repetitions or biological rhythms. At its heart, it suggests a universal pattern underlying the entire cosmos—a cyclical process that governs creation and dissolution, movement and stillness. One profound articulation of this idea is found in the concept of the **Cycle of Creation** or *"Brahma Cakra"* (Sarkar, 1961). Often depicted as a cycle of cosmic and biological evolution, its deeper significance lies in its ability to unify the external and internal dimensions of existence, centering on what is known as the **Cosmic Nucleus**.

The Cycle of Creation does not describe creation as a linear sequence of "things" appearing in space and time—whether planets, stars, or living organisms. Instead, as illustrated in Figure 4b, it portrays a cyclical interaction of forces: the **binding tendencies** of the creative principle (Prakrti) acting on pure consciousness (Purusa). This interplay manifests as the externalized forms we perceive and eventually dissolves back into its source. In this framework, all creation can be seen as emerging from and returning to the Cosmic Nucleus, yet never truly existing apart from it. This dynamic of




*Figures 4a, 4b. The Cycle of Creation or Brahma Cakra – artistic vs. philosophical depiction (Artistic source unknown).*

*The Cycle of Creation offers a timeless model of creation's dynamics, where the forces shaping the cosmos also govern the subtleties of perception.*

simultaneous divergence and convergence offers a profound lens to understand creation—not as a discrete sequence but as an ongoing, unified process.

Central to the philosophy is the Cosmic Nucleus, the immutable center from which all creation emerges and into which it ultimately dissolves. While creation thus appears as an outward progression from the Nucleus, it simultaneously remains fundamentally bound to the Nucleus, cycling around it. The solution to this apparent paradox lies in the principle of "one-acting-as-two"—a dynamic where differentiation arises without breaking the unity of existence. This principle, illustrated in Figure 5, reflects the characteristic bearing or "svabhava" of the Cosmic Entity—a dynamic flow where unity is preserved even as multiplicity emerges. The Nucleus sustains both the unity of creation and the apparent multiplicity of its externalized forms, ensuring the balance between the indivisible whole and its manifold expressions.

Although we live in a three-dimensional world, these cycles are two-dimensional in nature. This distinction reflects their role as functional diagrams rather than physical or geometric models, much like the Cycle of Creation itself. Nevertheless, the combined "inner" and "outer" cycles can be visualized in three-dimensional form as a (1, 2) torus knot. This mathematical figure, notable in both mathematics and physics, captures the interplay of two distinct yet interdependent cycles. While not a literal representation, it serves as a functional depiction of the dynamics described in the Cycle of Creation.

Within this context, the sensory dimensions of creation—what we perceive as sound and light—are elevated from physical phenomena to metaphysical principles. These are described as tanmatras, meaning "subtle essences," inseparable from the elementary factors that form them. From this perspective, there are no "thing" in the conventional sense—only dynamic patterns of interaction, perceived as physical objects in physical space. The Cosmic Nucleus becomes the continual source of these perceptions, uniting the external and internal realms within the cycle of creation.

By integrating these perspectives, Cycle of Creation offers a timeless model of creation's dynamics, where the forces shaping the cosmos also govern the subtleties of perception. This understanding not only bridges the physical and metaphysical but also aligns with earlier discussions of action, sound, and light. Through these connections, it anticipates deeper scientific insights into the relational structures underlying quantum phenomena and the vibrational unity at the heart of existence.

## 4. The "Spinor" in Quantum Physics: "Spin" Doesn't Mean That Something Is Spinning

This chapter delves into technical aspects of quantum spin and its reinterpretation, while providing broader insights into how spin may relate to earlier discussions on sound, light, and the action principle.

To begin, the term "spin" in elementary particle physics is often misleading. Despite its name, it does not imply that particles are physically "spinning around." Rather, spin represents an intrinsic property—quantized angular momentum—that defies classical intuition. This oversimplification has led to confusion, obscuring spin's deeper significance.

In conventional quantum mechanics, spin is represented through the SU(2) unitary group and its associated spinors—a higher-dimensional framework that, while mathematically robust, can

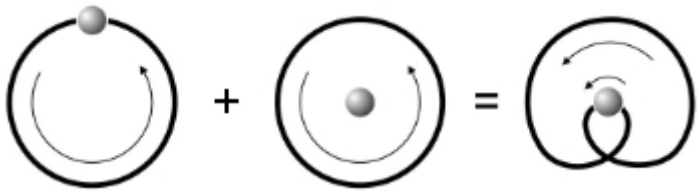


*Figure 5. The progression of microcosms through and around the Cosmic Nucleus, in one continuous cycle: a depiction of the svabhava, the immutable one-acting-as-two.*

obscure deeper physical interpretations. The use of complex numbers in SU(2) extends the parameter space beyond physical three-dimensional space, resulting in a mathematical **"double cover"** of the SO(3) rotation group. This higher-dimensional approach inherently diverts attention from more physically intuitive solutions and lacks direct physical observability. This is compounded by the problematic nature of higher-dimensional field theories, which often require renormalization due to inherent instabilities.

Contrasting sharply with P.R. Sarkar's philosophical concept of **"one-acting-as-two"**, which suggests inherent asymmetry, the SU(2) framework imposes a "one-becomes-two" scenario—creating a fictitious or counterfeit symmetry that lacks physical grounding. By revisiting the 2-sphere topology introduced earlier, we find a more grounded alternative. The 2-sphere, whose curvature encodes physical dynamics intrinsically, offers a natural framework for interpreting spin. Here, the genuine physical "double cover" lies within the dimension of action ([kg·m²/s]), where spin manifests as a spherical dynamic akin to a scalar ("acoustic") pressure wave carrying quantized momentum.

Under specific gauge interactions, this "spherical momentum" transforms into angular momentum, preserving the action's invariance and reflecting a deeper physical reality. This perspective resolves the mathematical ambiguities of SU(2) by rooting spin in a physically consistent framework, avoiding the instabilities of higher-dimensional field theories.

By viewing the spinor action as a relational framework, Lorentz invariance emerges naturally as a core symmetry. This suggests that the spinor isn't merely a mathematical tool but a foundational dynamic that orchestrates emergent space and time. The 2-sphere topology underlies this interpretation, stabilizing spin as an intrinsic aspect of physical and metaphysical dynamics.

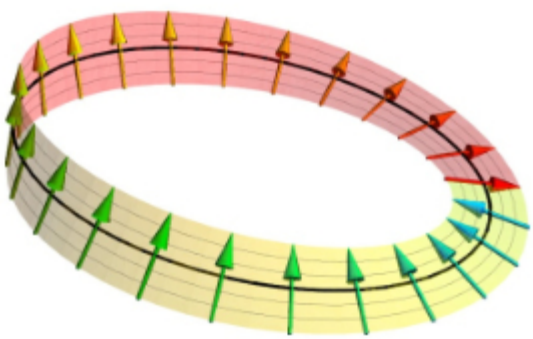


*Figure 6. A spinor visualized as a vector tracing a Möbius band, demonstrating the intrinsic double-cover property: a 360° rotation reverses its sign, revealing a fundamental asymmetry in its structure and a deeper connection to the origins of spin. (Image source: https://en.wikipedia.org/wiki/Spinor).*

It has been demonstrated that the "spin" of elementary particles can be interpreted as a spherical phenomenon, similar to what is found for sound and light, and, by implication, for the philosophical cycles of the Cosmic Nucleus. All are, in their respective contexts, expressions of the "double cover" and thus of the **svabhava**, the self-flow of consciousness (Sarkar, 1961). This reinterpretation also sets the stage for exploring how scalar fields and neutrino dynamics relate to this unified framework.

## 5. Neutrinos, Microvita, and the Macrocosmic Order

Neutrinos, with their subtle and elusive nature, appear to contribute to cycles of creation and cosmic evolution.

Stars, as immense nuclear furnaces, generate a subtle, outwardly undulating matter field, akin to an acoustic, stationary wave, extending far into the interstellar medium. This field shapes cosmic structures and guides cycles of creation, while the macrocosm, in turn, influences the stars, shaping their evolutionary trajectories.

The distinction between three neutrino types (flavor eigenstates) often seems more driven by the lepton involved in their creation or detection, plus their alignment with the Standard Model's family tree, than by deeper physical principles. While flavor oscillations, under the assumption $\Delta m^2_{32} \approx \Delta m^2_{31}$, appear consistent even over long ranges, it remains uncertain whether this distinction holds universally. Detecting a neutrino from an unknown origin effectively amounts to observing a traveling, **triadic mass-eigenstate**, rather than identifying its original flavor. Thus, the only consistently defining properties of a neutrino are its spin and its complete absence of electromagnetic and strong interactions.

This highlights neutrinos' unique elusiveness—both physically and conceptually. Their internal mass-eigenstates are inferred but cannot be directly measured. Nonetheless, flavor oscillations confirm that neutrinos must have mass, though the mechanism generating this mass remains speculative. Absolute values of their masses are largely unknown, but the mass differences, typically expressed as $\Delta m^2_{ij}$ to describe flavor oscillations, are reliably established.

Neutrinos, with their minuscule masses, travel at near-light speeds, leaving a probabilistic "trail" of flavor eigenstates. Emitted in vast quantities by stars

*Continued on page 64*

# Change: One Heart At a Time

## *Part I*

*Dr. Guldeniz Yucelen*

### Introduction

Mere survival becomes our priority when we no longer can meet our basic needs; when we live in a society where everyone is expected to fend for themselves against all others. Social inequalities and deep-rooted societal dynamics, institutionalized to protect the status quo of power and privilege, create the illusion that people are not equally deserving of basic needs and rights.

Society is divided into haves and have-nots, as well as many other arbitrary groups under the name of religion or race, which we now know are only social constructs (Cooper, Kaufman, & Ward, 2003; Cavalli-Sforza, Menozzi, & Alberto Piazza, 1994, as cited in DiAngelo, 2018). The World Inequality Report, coordinated by Thomas Piketty and others (WIR 2022), notes that "Disparities today are about the same as they were in the early 20th century ... The poorest half of the global population owns just €2,900 (in purchasing power parity) per adult, while the top 10 percent owns roughly 190 times as much. Income inequalities are not much better. The richest 10 percent today snap up 52 percent of all income. The poorest half get just 8.5 percent."

A 2020 UN report (UN 2020) concluded that "High or growing inequality not only harms people living in poverty and other disadvantaged groups. It affects the well-being of society at large." Recent figures (Fleck 2024) place South Africa, Brazil and the USA top in the socio-economic inequalities category with India, Mexico, Germany, the UK, China and France following thick and fast. Latin America and much of Eastern Europe and Asia have seen the largest increases in widening socioeconomic disparities in recent years.

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These universal disruptive socioeconomic dynamics shatter our birth right to feel safe and secure; to be treated equally in society. Knowingly or unknowingly, we develop self-demeaning, self-sabotaging ways of being in the world, such as appeasing others who have more power or status or making ourselves physically smaller, desperately believing or hoping it may help us feel safe and protect us. We may also internalize a sense of inferiority and superiority, depending on our social location.

Part I of this article will look at how sense of inferiority and sense of superiority, flip sides of a

*"Studies consistently find a significant relationship between self-esteem and socioeconomic status."*

coin, are ingrained in socioeconomic inequalities and how they are perpetuated by various methods of psycho-economic exploitation. The second part, in Neohumanist Review 5, September 2025, will focus on how we can break out of these powerful tendencies, of which we may even be unaware, at the individual level. We will also explore the methods used by some innovative and impactful community programs that not only support development needs of disadvantaged people, but also help community members access their own strengths, confidence and resilience, breaking the cycle of despair and sense of inferiority.

## The Sense of Being Inferior

Concepts of inferiority, superiority, and of psychic complexes in general have been brought forward by yogic and other psycho-philosophic literature since antiquity, such as in the ancient aphorisms on yogic science by Patanjali (Patanjali 2009). Carl Jung, in his *The Psychology of Kundalini Yoga* (Jung 1932), offered: "When conscious life loses its meaning and promise, it's as if panic took over…". Writing on yoga and mental health, Camila Ferreira Vorkapic explains:

> *"One of the goals of the psychological processes of yoga is the removal of conditioning (basic processes formed by associations), habits (higher forms of learning), dogmas (cognitive processes), turning the individual into a more adaptive one, and open to new experiences. Most individuals live an automatic life with stereotyped answers to different situations and people. But a nonrigid and clear mind has great power of perception and decision. On the other hand, a conditioned mind is able to respond according to its own unreal interpretation of the world. Most conditionings are the habits of thought and action deeply rooted in the mind or fundamental processes of associations."* (Vorkapic, 2016)

Modern ideas of specific inferiority and superiority complexes, and of their social ramifications were first introduced in 1907 by Alfred Adler, a medical doctor and psychoanalyst who founded Individual Psychotherapy (Adler, 1917).

Adler emphasized the uniqueness of each person, the importance of interpersonal connections, and the inseparable relationship between the psyche's well-being and that of the larger society (Adler, 1938, as cited in McCluskey, 2022). Moreover, according to Adler, society was responsible for providing the necessary conditions to promote the mental wellbeing of all.

Since the early twentieth century, the field of mental health and psychotherapy has advanced tremendously. It is outside the scope of this article to provide a detailed history of the developments in the field of psychotherapy; however I will take the liberty to divide the therapeutic approaches into two broad groups according to where they fall with regards to the following dimensions: holistic versus categorical view mental health; honoring the inherent wisdom of the person versus pathologizing the individual; and mental health as the sole responsibility of the individual (or the family) versus mental health as the individual and societal responsibility.

For instance, humanistic psychology and Sensorimotor Psychotherapy, offer a holistic view of individuals, emphasizing the uniqueness of each person with their inherent wisdom and capabilities, acknowledging the cultural, socioeconomic, and psycho-spiritual contexts. This broad group is a strength-based approach to human psychology that recognize the wisdom and capacity of the individual, and view psychotherapy as a collaborative work between the provider and the client to work through what gets in the way of utilizing their potential. The second group, such as behavioral therapy, offers a reductionistic approach to human psychology often rely on symptom identification, categorization, use of predetermined and manualized treatment protocols, and often view mental health issues and treatment as the responsibility of the individual or the family. The latter is a hierarchical approach geared toward controlling and dictating the treatment process, often involves a disregard for the person's inherent wisdom, knowledge, culture and experience. The latter is also reductionistic and excludes important aspects of human existence, such as creativity, consciousness, culture, and spirituality.

I believe these two broad categories mirror socioeconomic dynamics in the society, again broadly speaking, those that aim to support individuals to reach their potentials versus those that work towards controlling and conquering, as well as protecting power and privilege in the society.

Along with modern society's increased fascination with self image and identity, starting in 1970s, selfhood formed one of the most popular topics of study in social sciences and many therapeutic approaches were developed to promote self-esteem and other related concepts. Roy F. Baumeister, a social psychologist, approached this trend from a novel perspective, exploring the burden of society's concern with self-fulfillment and personal identity (Baumeister, 1991). His findings indicated that the demands of creating and maintaining a positive self-image has become such a burdensome and overwhelming task that people have been turning to escapist practices such as drug and alcohol use, suicide, or eating disorders. However, the overriding motive in these practices was not self-destruction or even relief from stress, but a cost of overemphasis on self, and a need to forget who we are. Baumeister also explained that this inflated self-aggrandizement has made it difficult to engage in spirituality which requires submersion of self.

Many ancient spiritual practices, such as Tantra, Buddhism and Sufism, emphasized the need to move towards selflessness as a central prerequisite to spirituality. Although this will be further elaborated in the second part of this article, I would like to quote Sarkar's playful description of how ego gets in the way of realizing the Supreme Consciousness:

> *"There is a heavenly shower of grace. But suppose that you are holding an umbrella over your head. Will you be drenched by that shower? Oh, no. They who want to enjoy this shower of grace must remove this umbrella of ego over their heads, and they will be drenched by the divine shower."* (Sarkar, 1968, n.p.)

## Comparing Oneself

Sense of inferiority and sense of superiority involves comparison. We need to be inferior or superior then someone else. Thus, these cannot be an individual's problem in a vacuum. Baumeister described the burden of selfhood as "People have idealized how they would like to be and evaluate their activities by discrepancy between what they are and what they would like to be," (Baumeister, 1991, p. 8).

Social media has added to this burden by offering countless possibilities to compare ourselves not only with our own idealizations, but also with others' unrealistic and fabricated self-images and identities. According to the U.S. Surgeon General's 2023 Advisory some of the potential pros of social media for the youth are keeping in touch with existing friends and classmates; connecting with others or networks of shared interests; providing a place for creativity and self-expression; and civic and community engagement (U.S. Department of Health and Human Services, 2023).

Particularly of significance for marginalized young people, such as LGBTQ youth, social media may promote mental health by facilitating identity development and accessing social support. The potential cons, on the other, forms a long and

*"Decades of research findings support the view that inferiority and superiority complex are tightly intertwined with past and present racism, oppression, and discrimination."*

concerning list, including increased levels of depression, anxiety, stress or isolation; body dissatisfaction; disordered eating behaviors; social comparison; low self-esteem; high self-criticism, often related to increased risk for comparing self to false realities on social media. Just like any other advancement in human history, social media offers opportunities for progress, as well as risks of harm.

## Socio-Economic Ramifications

Regarding the relationship between poverty and mental health, studies consistently find a significant relationship between self-esteem and socioeconomic status, with a higher correlation during young adulthood until middle age (Twenge and Campbell, 2002). The association between poverty and low self-esteem in children is weaker compared to that of adult population, which is explained by the mediating effect of family, school and community involvement (Doi, et al., 2019, Twenge and Campbell, 2002).

All these studies focus on identifying ways to mitigate the impact of poverty on self-esteem; however, none of them mention better distribution of wealth and fair access to academic opportunities and resources as an option. Living in an affluent town means your child will get a better education and have access to more and better resources, including counseling and special education services, compared to the children living in the next town with lower income (Mills, Braga 2015). Lower levels of socioeconomic status have been found (APA 2010) to be associated with higher levels of emotional and behavioral difficulties, including social problems, delinquent behavior symptoms and attention deficit/hyperactivity disorder among adolescents; higher rates of depression, anxiety, attempted suicide, cigarette dependence, illicit drug use and episodic heavy drinking among adolescents; higher levels of aggression, hostility, perceived threat, and discrimination for youth; higher incidence of Alzheimer's disease later in life, and elevated rates of morbidity and mortality from chronic diseases later in life. Numerous physical health, education, and family wellbeing factors are similarly impacted.

Under capitalism, this all result in what Shrii Prabhat Ranjan Sarkar has termed as psycho-economic exploitation. Shrii Sarkar explains that capitalist exploitation morphed into different forms in different periods, to name a few feudalism, imperialism, colonialism, and multinational corporations. He writes:

> *"Psycho-economic exploitation is the latest form of dangerous and all-devouring exploitation. It is a special form of type of exploitation which first weakens and paralyses people psychologically in various ways, and then exploits them economically. Some of the methods of psycho-economic exploitation include, first, the suppression of the indigenous language and culture of local people; secondly, the extensive propagation of pseudo-culture, exemplified by pornographic literature which debases people's mind and particularly undermines the vitality of the youth; thirdly, the imposition of numerous restrictions on women, forcing them to be economically dependent on men; fourthly an unpsychological education system with frequent political interference by vested interests;… the balkanization of society into numerous castes and groups; …placing the control of different mass media, such as newspapers, radio and television, in the hands of capitalists." (Sarkar, 1992, p.77)*

Sarkar also urges the intellectuals and educated people, to utilize their acquired knowledge for the collective welfare. He states, "Casting aside all their inertia and prejudices, intellectuals will have to mix with the common people and engage themselves in their welfare. They will have to assist the common people in their development and extend their support to all anti-exploitation movements." (p.77)

## Racism

Discrimination is widespread and getting worse around the world (WJP 2024). According to the World Justice Project, "70% of countries have seen discrimination worsen between 2021 and 2022. Since 2015, discrimination has increased in three-fourths of countries." Sociologist and race theorist Howard Winant writes: "Pick any relevant sociological indicator—life expectancy, infant mortality, literacy, access to health care, income level—and apply it in virtually any setting, global, regional, or local, and the results will be the same: the worldwide correlation of wealth and well-being with white skin and European descent, and of poverty and immiseration with dark skin and 'otherness'." (Winant, 2002)

Decades of research findings support the view that inferiority and superiority complex are tightly intertwined with past and present racism, oppression, and discrimination. Psychologists Kenneth B. Clark and Mamie Phipps Clark (1949) were the first to study the psychological effects of segregation on black children in an experimental study referred to as the "Doll Study." Their results indicated that prejudice, discrimination and segregation caused black children to develop a sense of inferiority and self-hatred.

The Clarks' groundbreaking study was followed by many others, looking at the intersection of racism and mental health. The term "internalized racism" was coined by Robin Nicole Johnson to describe how members of racially subordinated groups can consciously and unconsciously accept the dominant culture's view of their inferior status and hold associated negative self-evaluations (Johnson, 2008, as cited in Williams & Etkins, 2021). Today, results of hundreds of research studies show a clear correlation between racism, including institutionalized racism, on mental health outcomes (Paradies et al., 2015; Williams & Etkins, 2021); health outcomes (Paradies et al., 2015); disparities in health care services (Amster, 2022); and disparities in educational opportunities (The Anne E. Casey Foundation, 2023).

So, why don't we rectify these detrimental factors? In whose interest is it to maintain and perpetuate inequalities? In her must-read book, "White Fragility", Robin DiAngelo explains:

> *"White people in North America live in a society that is deeply separate and unequal by race, and white people are the beneficiaries of that separation and inequality…at the same time that we come to feel entitled to and deserving of our advantage… socialized into a deeply internalized sense of superiority that we either are unaware of or can never admit to ourselves, we become highly fragile in conversations about race…Though white fragility is triggered by discomfort and anxiety, it is born of superiority and entitlement. White fragility is not weakness per se…In fact, it is a powerful means of white racial control and the protection of white advantage." (DiAngelo, 2018, p. 37-38)*

Unfortunately, racism is not left behind in history. Racism or "white supremacy" a term that does not refer to individual white people, with specific intentions and actions, but describes a predominant political, economic, and social system of power and control that is based on the assumed superiority of people defined and perceived as white (DiAngelo, 2018). It is important to note that DiAngelo's book looks at United States, Canada, and Europe; however, DiAngelo notes that these patterns have been observed in other parts of the world, particularly in white settler societies, such as Australia, New Zealand, and South Africa.

Race is a social construct with no genetic or biological basis (Cavalli-Sforza, Menozzi, & Alberto

Piazza, 1994, as cited in DiAngelo, 2018). We all evolved from the same gene pool and the observable physical characteristics we use to define race, such as hair texture and eye colour, emerged as adaptations to geography (Cooper, Kaufman, & Ward, 2003). Michael Eric Dyson states, "Whiteness…is not a biologically heritable characteristic that has roots in…genes or chromosomes. But it is real, in the sense that societies and rights and goods and resources and privileges have been built on its foundation." (DiAngelo, 2018, Foreword, p. 24). As Ta-Nehisi Coates put it, "But race is the child of racism, not the father." (Coates, 2015, p.17). In other words, unequal treatment came first, the concept of race was invented to justify unequal treatment.

In 2021, the American Psychological Association (APA) apologized for contributing to systemic racism, acknowledging their complacency in "contributing to systemic inequities, and hurt many through racism, racial discrimination, and denigration of people of colour, thereby falling short on its mission to benefit society and improve lives…upholding the myth of White superiority." (APA, 2021). Yet, APA's dictionary has not included "internalized racism," an important concept widely used in research studies over the past sixteen years. The definitions of "inferiority complex" and "self-esteem" for instance focus on the individual shortcomings or pathology, and fail to mention the role of social inequalities or systemic racism, despite the clear, evidence-based adverse impact:

> **Inferiority complex** *"a basic feeling of inadequacy and insecurity, deriving from actual or imagined physical or psychological deficiency, that may result in behavioral expression ranging from the withdrawal of immobilizing timidity to the overcompensation of excessive competition and aggression."*
>
> **Self-esteem** *"The degree to which the qualities and characteristics contained in one's self-concept are perceived to be positive. It reflects a person's physical self-image, view of their accomplishments and capabilities, and values and perceived success in living up to them, as well as the ways in which others view and respond to that person. The more positive the cumulative perception of these qualities and characteristics, the higher one's self-esteem. A reasonably high degree of self-esteem is considered an important ingredient of mental health, whereas low self-esteem and feelings of worthlessness are common depressive symptoms."*

Actions speak louder than words. While APA's apology is significant, APA and many other institutions have much work to do to eradicate the systems of structural power that prioritizes, privileges and elevates white people as a group. For instance, if we look at the racial breakdown of who controls our institutions in 2016-2017, we see these telling numbers:

1. Ten richest Americans: 100 percent white (seven of whom are among the ten richest in the world)
2. US Congress: 90 percent white
3. US governors: 96 percent white
4. Top military advisers: 100 percent white
5. President and vice president: 100 percent white
6. US House Freedom Caucus: 99 percent white
7. Current US presidential cabinet: 91 percent white
8. People who decide which TV shows we see: 93 percent white
9. People who decide which books we read: 90 percent white
10. People who decide which news is covered: 85 percent white
11. People who decide which music is produced: 95 percent white
12. People who directed the one hundred top-grossing films of all time, worldwide: 95 percent white
13. Teachers: 82 percent white
14. Full-time college professors: 84 percent white
15. Owners of men's professional football teams: 97 percent white (Houyoun, in DiAngelo).

It may be pointed out here, that the people other than those classified as white, including Hispanic or Latino, make up less than 40 percent of the population of the USA.

As James Baldwin puts it, "I can't believe what you say, because I see what you do." (J. Baldwin, The Nation)

## Conclusion

In this article, we looked at the current societal dynamics that perpetuate mental complexes. As Feldenkreis puts it, "You can't do what you want, until you know what you are doing." (P. Ogden, personal communication, November 2021). The second part of this article, in the following issue of the present journal, will focus on what each of us can do to identify sense of inferiority and superiority or entitlement within ourselves and how we can heal from these complexes with psychological and yogic practices. We will also discuss ways to help others to do the same, exploring the wisdoms and insights from a few community-based programs that have been successful in this endeavour. So that we can unite our potentials towards a brighter future.

*The article with its complete references is available at the journal web pages theneohumanist.com.*

# A Linguistic Survey of the World

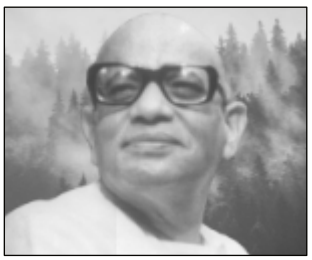
*Shrii Prabhat Ranjan Sarkar*

Between the points of no magnitude there is a flow of cognition. In that fluidal flow of cognition, bubbles are created. These bubbles are the bubbles of ideas. In the Cosmic emanation of the Supreme, when these bubbles touch the unit "I"-feeling, then unit ideas are created as a result of close proximity to the Cosmic Ocean. These are the reflections or refractions of Cosmic ideas. When these ideas concern the unit, the unit "I" tries to express them through its own psycho-physical structure. It endeavours to express its unit desires and longings according to the capacity of the vocal cord and its hormone secretions. These reflections or refractions of ideas are expressed either within or without. The expression within is called "inner voice" and the expression without is called "outer voice." These expressions within and without are collectively called language.

According to structural, environmental, climatic and racial differences, languages are expressed in different forms, thus we get different languages. So far as the refraction of the bubbles is concerned, the language of the universe is the same, was the same and will remain the same forever. The language of the "inner voice" is always one and indivisible. Only in the outer manifestation do we get so many languages. In the expressed world linguistic differences have a little value, but in the inner world they have no meaning, no import and no value.

In the entire world there are different linguistic groups. These groups may be divided according to the following criteria:

1. Those languages in which the verbal form changes according to changes in the number and gender of its subject, like French and Saṁskrta (Sanskrit).
2. Those languages in which the verbal form changes according to the number and not the gender of the subject, as in English. For instance, we say "Henry is coming" and "Henriette is also coming" but "Henry and Henriette are coming". Here the gender of the subject does not affect the verb, but the number certainly does.
3. Those languages in which the verb changes according to the gender and not the number, like Maithili and Bhojpuri. In Bhojpuri the verb is not fully expressed. For example, in the case of "you" masculine it is "tu gaila" but in the case of "you" feminine it is "tu gailii".



*Shrii Prabhat Ranjan Sarkar (1922-1990)*

There are some languages where the use of the "be" verb is avoided, as in Bengali. For example, "He is a good boy" is *Se bhála chele* in Bengali. Here the Bengali equivalent of "is" in English is not mentioned.

## The Languages of India

In the ancient past, in the hoary past, India was inhabited by the Austrico-Negroid-Mongoloid races. The northwest was thickly populated. The Caucasian people came to India from the central portion of South Russia, so we can say that central southern Russian Aryan blood was incorporated into the body of India. There was less Aryan blending in

*In the expressed world linguistic differences have a little value, but in the inner world they have no meaning, no import and no value.*

the south and east of India, and more in the north and west of India. The Aryans who came to India spoke a distorted Vedic language which was blended with the Austrico-Negroid-Mongoloid tongues and was thereby changed. The Austrico-Negroid-Mongoloid languages were also blended with the Vedic language, so they have a large percentage of Vedic vocabulary. Even languages of non-Vedic origin have a large number of Saṁskrta words, like Malayalam for instance, which is an Austrico-Negroid language containing 75% Saṁskrta and Vedic vocabulary. Bengali is an Austrico-Negroid-Mongoloid language, but it contains 92% Saṁskrta vocabulary. Punjabi is a direct descendent of the Vedic language – it contains 80% Tadbhava Vedic or distorted Vedic. Due to the close proximity of the Punjab with Persia and Turkey, Persian and Turkish vocabulary are also included in Punjabi. There was a blending in the cultural history of these countries, and a similar blending also took place in the linguistic structure.

Saṁskrta has four zonal intonations: a) Gaoŕiiya; b) Káshiká; c) Maharastra; and d) Dakśini. In a particular language there are different intonations which even vary district-wise. The languages of Bihar and some of the languages of Uttar Pradesh do not have any position in their region. Bhojpurii was spoken in Deoria and Gorakhpur and known as Tarai Bhojpurii. There is a variation between lower Gangetic Bhojpurii, which is the Bhojpurii of Bhojpur, and upper Gangetic Bhojpurii, which is spoken in the east of Gopiganj. Bhojpurii is spoken to the east of Gopiganj, and Bagheli is spoken to the west. Dogrii, which was a flourishing language 500 years ago, could not be revived due to the silent opposition of the Kashmiri Brahmins. At that time Urdu was influential in Kashmir.

During the Sanskritic age, like today, languages were not given their proper status. Saṁskrta was called *bhášá* and the peoples' language was called *bhákha* to give it a lower status. Saṁskrta was compared with well water and the peoples' language with flowing water (*bahatá niira*). "Vernacular" means "the language of the slaves". You should do something for the recognition of peoples' languages.

There are certain similarities in the languages derived from one source, for example, Mágadhii Prákrta. Eastern Demi-Mágadhii Prákrta is like Bengali (and Maethilii, etc.) because these languages use *má* and *ca* in the present tense – *ámi yácchi* in Bengali and *ahán jáechi* in Maithili – *la* in past tense – *se gela* in Bengali and same *gaeli* in Maithili – and *ba* in future tense – *ámi jába* in Bengali, *hama jáiba* in Maithili and *mu jibi* in Oriya. Western Demi-Mágadhii Prákrta, which includes Magahi, Bhojpuri, Nagpuria, Chattisgarhi, etc. is different. In the present tense *ca* is not used – *Ham já rahalbani*, etc. – in the past tense *la* is used – *gel, geli*, etc. – and in the future tense *ba* is used. So Western Demi-Mágadhii Prákrta differs from Eastern Demi-Mágadhii Prákrta only in the present tense. These specialities have to be studied carefully if one wants to acquire knowledge of intonation and philology.

The average longevity of a script is 2000 years and the average longevity of a language is 1000 years. After this period they undergo metamorphosis. Vedic and Saṁskrta are not the same languages. The language of the Aryans is Vedic Saṁskrta, or rather Rgvedic Saṁskrta. Saṁskrta is of Indian origin. *Aham*, *ávam* and *vayaṁ* in Saṁskrta are *mam*, *asmákam* and *nah* respectively in Vedic. *Mam*, *asmákam* and *nah* in Saṁskrta are *me*, *no* and *nah* in Vedic. The translation of, "This is my house" into Saṁskrta is, *Idaṁ asmákaṁ grham asti*. In Vedic it is, *Yetad nah dhama*. "That is my house" is *Tad asmakaṁ grham asti* in Saṁskrta, *Tad nah dham* in Vedic Saṁskrta and *'tad nas dham* in Russian. Russian has a close proximity with the Vedic language. Due to spatial, temporal and personal factors some changes took place in the Vedic language. The five languages of South India abound in Vedic Saṁskrta, even though they were not of Saṁskrta origin.

South Indian languages are of Austrico-Negroid origin, but the scripts are of the Indo-Aryan group (that is, *ka, kha, ga, gha*, etc.) Examples are Telegu and

> *All the languages of this universe are mine. Suppression of the mother tongue is suppression of human sentiment and suppression of human expression.*

Kannada, which contain about 80% Saṁskrta words. Although ethnically Tibetans are Mongoloids of Indo-Tibetan origin, their script is Indo-Aryan. That is, the same script is used in Kinnaur and Ladakh. Multáni is a blending of Punjabi and Sindhi which evolved about 3000 years ago; Pahari Punjabi, which uses *da, dii,* and *de* in the possessive case; and Marwari, which uses *rá, rii* and *re*.

The seven peoples' languages of India are known as Prákrta. In eastern India the spoken language was Mágadhii Prákrta. (In the past India was comprised of several countries and Magadh was one of them). The speciality of Mágadhii Prákrta is that in pronunciation instead of three sa – that is, *sha, sa and śa* – only one sa – that is, *sa* – is pronounced. In central northern India the peoples' language was Shaorasenii Prákrta. Shúrasena was the country between the Gaungá and the Yamuna – it was known as Brahmavarta in ancient times. During the time of the Mahabharata it was called Shúrasena, and Mathura was the capital. During the Pathan and Mughal periods, it was called Doáb or "the land between two rivers." To the west of the Shaorasenii area, Paesháchii Prákrta was spoken, and to the west of the Paesháchii area, Páshchátya Prákrta was spoken. In Sind and Baluchistan, Saendhavii was the language of the people. In the west of Madhya Pradesh, Rajasthan and Gujarat, it was Málavii Prákrta. In Maharastra, Goa and parts of Karnataka, Maharáśtrii Prákrta was spoken. The Prákrta languages were "petticoat languages," that is, they were the languages of the kitchen. The Prákrta languages underwent further transmutation. From Mágadhii Prákrta came Eastern Demi-Mágadhii and Western Demi-Mágadhii. From Western Demi-Mágadhii Chattisgarhii, Nagpuria, Bhojpurii and Magahii evolved, and from Eastern Demi-Mágadhii Asamia, Bengali, Angika, Maithili and Oriya evolved. All these nine languages come from Mágadhii Prákrta. Buddha spoke in Pali, that is, Mágadhii Prákrta. Palli means "village" and "Páli" means "language of the village". From Shaorasenii came Avadhii, Bundelii, Baghelii, Vrajabháśá and Hariyánavii. From Hariyánavii (which had Persian and Turkish vocabulary) came Urdu, the language of people who wear vardii, or military dress. From Paesháchii Prákrta came Multáni, Eastern Punjabi, Western Punjabi, Paharii (Sirmaurii – a dialect of Nahan) and Dogrii. From Páshchátya came Pashto, Afghani, Peshavari, Kashmiri, Tazaki, Kurdish and the languages of South Russia. From Saendhavii Prákrta came Sindhi, Kacchi, Bahici and Brulii. The last two are Dravidian and not Indo-Aryan languages. Several languages emerged from Málavii Prákrta in the east and were spoken in Bhopal, Vidisha and nearby places, Gujarati and Kathiavari or Saurashtri. To the western side Marwarii, Mewarii, Harautii, Dhudhárii and Mewati were spoken. From Maháráśtrii Prákrta came Varadi, spoken in Vidarbha, and Debastha Merathi, spoken in Pune and Konkon. In Paesháchii Prákrta the use of modified consonant sounds is rare. In Páshchátya, such sounds are occasionally found as in *padam pośa*.[1] Kulu is a blending of Paharii Punjabi and eastern Dogrii.

I once said that all the languages of this universe are mine, but you know only five, seven or ten of them. Suppression of the mother tongue is suppression of human sentiment and suppression of human expression. Such a thing is not only bad, it is nasty!

## Other Languages of the World

The languages of the entire world have been divided into several categories. Some of these languages maintain a parallelism with racial and ethnological factors, but this is not always the case.

Racial factors in Assam, Bengal, Bihar, Uttar Pradesh, east of Allahabad, east Madhya Pradesh, south Maharastra, Andhra and South India are not Aryan. In Maharastra there is some influence of the Mediterranean Aryans, but in Bengal there is the blending of Caucasian blood of the Mediterranean sub-race with the Austrico-Negroid-Mongoloid races.

The languages of Assam, Bengal and Orissa all abound in Saṁskrta vocabulary. The base is not Aryan – the language is Saṁskrta. Bengali is 92% Saṁskrta, Oriya 90% and Malayalam 72%, though the Malayalese do not belong to the Aryan group. Vedic Saṁskrta is of non-Indian origin, while Saṁskrta is of Indian origin. An illiterate woman of Bengal may say *biná*, *tele* and *reṇdhechi* (from *randhana*) – all three are Saṁskrta words. Saṁskrta is not a

[1] Padam pośa is a form of *padma puśpa*, "lotus flower", in which the dma of padma has become dam.


foreign language in India, but the Vedic language is different. It is a foreign language.

Tibetans are members of the Mongoloid race. The Nipponese sub-group of Japan and all the people in China except those in Tibet, Outer Mongolia and Korea belong to the same race. The Indo-Tibeto-Mongoloids or the people of Bhutan, Sikkim, north of Nepal, north of Udayan (Garhwalii and Kumayunii), Kinnari in Himachal Pradesh and Ladakh near Jammu and Kashmir are also of the same origin – the Mongoloid race. Indo-Tibetans have a large physical structure and a tall body. The Chinese have a small figure like the Filipinos, Indonesians, Malays, Vietnamese and Thais living in the southern portion of Thailand. The Burmese people are different. They have no single language, just like India. India is a multilingual, multi-national country and so is Burma. Amongst the languages of Burma, Burmese is the most important language. The people of Mizoram, Manipur, Naga hills, and some portion of Meghalaya belong to the Indo-Burmese sub-group of the Mongoloid race. They vary from each other linguistically.

The languages of Burma are different from those of China – they do not follow the Chinese pictorial script. They use letters like *ka, kha, ga*, etc. The people there utter the mantra *Oṇḿ mańi padme hum*.

Japan follows the pictorial script of China. Ethnologically and racially the people have maintained a parallelism with China, like the people of Outer Mongolia and Korea. In Bhasa Malaya Samskrta vocabulary is used. The Thai language contains 80% Samskrta vocabulary, while Bengali contains 92% and Oriya 90%. Malayalam, which contains 72% Samskrta vocabulary, stands fourth. The Malayali people do not belong to the Indo-Aryan stock. The forefathers of the Nayars and the Nambooderies of Kerala were Bengalees. The Gaur Saraswat Brahmans of Maharastra, (like the Senoi, Pai, Patil, etc.) eat fish like the Brahmans of Bengal.

The Malaysian and Indonesian languages have a high percentage of Samskrta vocabulary. Although the percentage is less than in the Indian languages, it does not come under 40%. Burmese has 40% to 50% Samskrta, while Chinese has between 2% and 3%.

Chinese has three dialects, but Mandarin is the standard Chinese. In the Philippines words like rája and guru are used. In Thai, a road is called *rájapatha* and a government hospital is called "Rájánukúla Hospital." There is a hotel in Thailand called the "Apsará Hotel." *Apsará* is Samskrta for "angel". The Indonesian airline is called "Garuda Airways". *Garuda* is Samskrta for a mythological bird. Indonesia is a Muslim country, but since it has been influenced by both the *Mahábhárata* and the *Rámáyańa*, an Indonesian king named his son "Sukarno". He selected the name "Sukarno" after Karna in the Mahábhárata. According to his understanding, Karna was a great warrior who had certain imperfections. The king wanted his son to emulate Karna's good attributes but avoid his defects. *Sukarno* means "good Karna." Sukarno married a Japanese girl who was given the name Ratnásańii Devii after marriage. Sukarno's first daughter was called Meghavarná Sukarna Putrii because she was born on a rainy night.

Dravidian influence is evident in the southern portion of Bengal, whereas Mongolian influence is evident in the northern portion. But, in general we can say that Bengali contains a greater percentage of Samskrta words than any other language in the world. Amongst the Caucasian languages, certain languages like Russian, Polish, Czech and Slovak languages have been greatly influenced by Vedic vocabulary.

The Mediterranean countries of Europe have a Latin origin. Original Latin underwent some changes after a thousand years and developed two branches – Occidental Demi-Latin and Oriental Demi-Latin. From Occidental Demi-Latin came Basque, Spanish and Portuguese, and from Oriental Demi-Latin came Italian and French. Other languages greatly influenced by Latin and Vedic were the languages spoken by the Alpine and Nordic people. Polish and Slovak are of Alpine origin, and they were also greatly influenced by Latin and Vedic. They contain a certain percentage of the Scandinavian languages which are of the Anglo-Saxon group. This group includes the countries of Norway, Sweden, Finland, Denmark and Iceland. Modern English is a blending of Anglo-Saxon, Normandy French, which was spoken in the northern portion of France, and Latin. French evolved from Oriental Demi-Latin.

To know English properly, people must acquire good knowledge of Latin and Anglo-Saxon terms. Distance is measured by feet, but in Samśkrta it is measured by *gája*, a longer unit of measurement. Gája means "elephant". In ancient times the measurement was done by hand. Some ten thousand years ago the measurement unit was from the end of the elbow to the tip of the middle finger. In Latin foot is called *pedas*, and from this came "pedal". "Pedal" is also used in the sense of "to bicycle". "Pedal" is the adjective of pedas. The Samśkrta word *naktram* is "nocturnal" in Latin. In English there are two adjectives derived from the Latin words for "blood'. One, with a positive sense, is "sanguine". The other, with a negative sense, is "sanguinary", meaning "bloody".

English vocabulary abounds in Nordic, Alpine and original Normandic words. English is a blended language and it has two sets of pronunciation – the Latinic style of pronunciation and the Nordic or Anglo-Saxon style of pronunciation. For example, The English word "knife" came from the French word *kanif*. In English "knife" is pronounced correctly when the "k" is silent. "Education" in Latinic style is pronounced "education" and in Anglo-Saxon style "ejucation". In the same way, "guardian" is pronounced differently.

In Africa, languages differ according to climatic conditions and river basins. Several Negroid tongues originated in the south of the Sahara, and altogether there are twenty-seven dialects. In the north of the Sahara the original language was Egyptian. When the Arabs conquered Egypt, the language was influenced by Arabic, and dialects and sub-dialects developed. From Morocco to Iran and from Lebanon to Yemen Arabic is spoken. The Persian and Afghani languages are very close to Rgvedic Samśkrta. For example, *asti* is Samśkrta and *astá* is Persian; *bhrátara* is Samśkrta and *biradar* is Persian. Persian is the grandchild of Rgvedic Samśkrta.

Later Hebrew and old or later Arabic came from old Hebrew. Later Hebrew died out when the Jews had to leave the Middle East and settle in Europe and the United States of America. A new language, Yiddish, emerged, but now it is virtually extinct. Hebrew became the official language of Israel when the Jews resettled in the Middle East. Hebrew has close proximity with Arabic. For example, the Arabic words "Ibrahim", "Yusuf", "Yacub" and "Daub" are "Abraham", "Joseph", "Jacob" and "David" respectively in Hebrew. Both are Semitic languages and both are written from right to left.

This is a linguistic survey of the entire world.

*From "A Scriptological and Linguistic Survey of the World", given in Kolkata on 20. February 1989. Published in* Discourses on Neohumanist Education *and in* Prout in a Nutshell Volume 4 Part 17*, both by Ananda Marga Publications.*

# The RIVER SCHOOL

Neohumanist Education For Life

~ Established 1995 ~

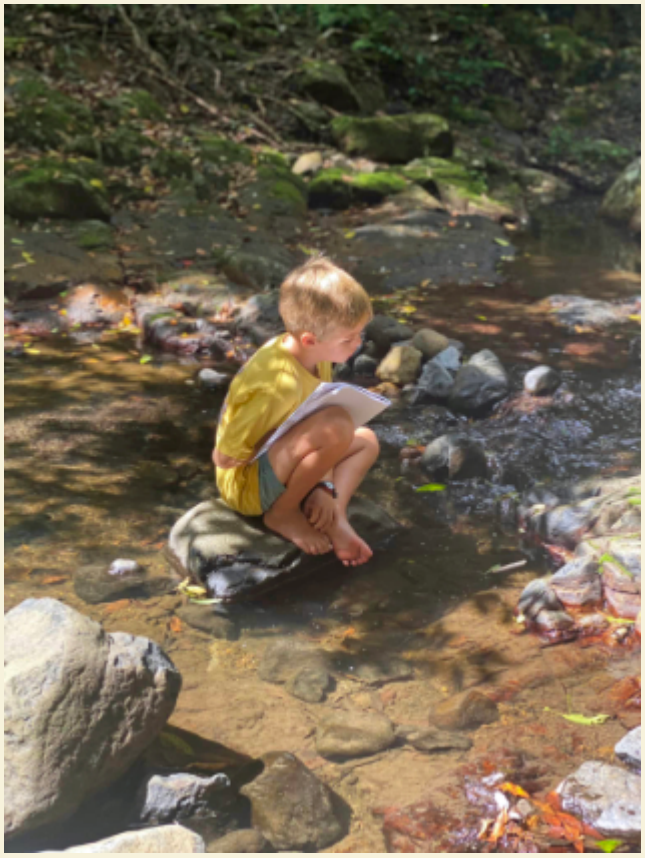
*The River School is a vibrant community of learning for students from Pre-Kindy to Year 6 in the beautiful township of Maleny in South East Queensland, Australia. At The River School, childhood is nurtured through mutual love and respect for all. It is a place where children feel safe, happy and free to learn, ensuring a great foundation that will last them a lifetime.*

The River School's Neohumanist philosophy of love, respect and kindness to all, ensures the Australian Curriculum is delivered within a meaningful framework that nurtures each child's development to their highest potential

We employ the latest research to ensure our academic programs are engaging and reach a standard of excellence. Our Spelling program endorses scientifically proven reading, and spelling methods and we offer a full Arts program across all year levels, including access to specialist Art and Music classes.

At The River School we recognise that our responsibility as educators goes far beyond the teaching of academic subjects. Our Neohumanist philosophies value and encourage the development of all facets of the children in our care, including spiritual, physical, emotional and social development.

Emphasis on Restorative Practice assists children understand the value of conflict resolution through placing positive relationships at the heart of all we do and say.



- *A learning environment that nurtures the mind, body and spirit*
- *A learning environment that puts the heart at the centre of all we do*
- *Immersion in the natural environment with creek and nature time*
- *A Creek Kindy program for students aged 4-5*
- *Scientifically backed English programs, InitiaLit, MiniLit and Spell It*
- *Rich Arts & Music Program*

*The River School welcomes you to learn more about a journey that fosters connection, and a child's sense of responsibility as a global citizen.*

*Email: admin@riverschool.com.au*
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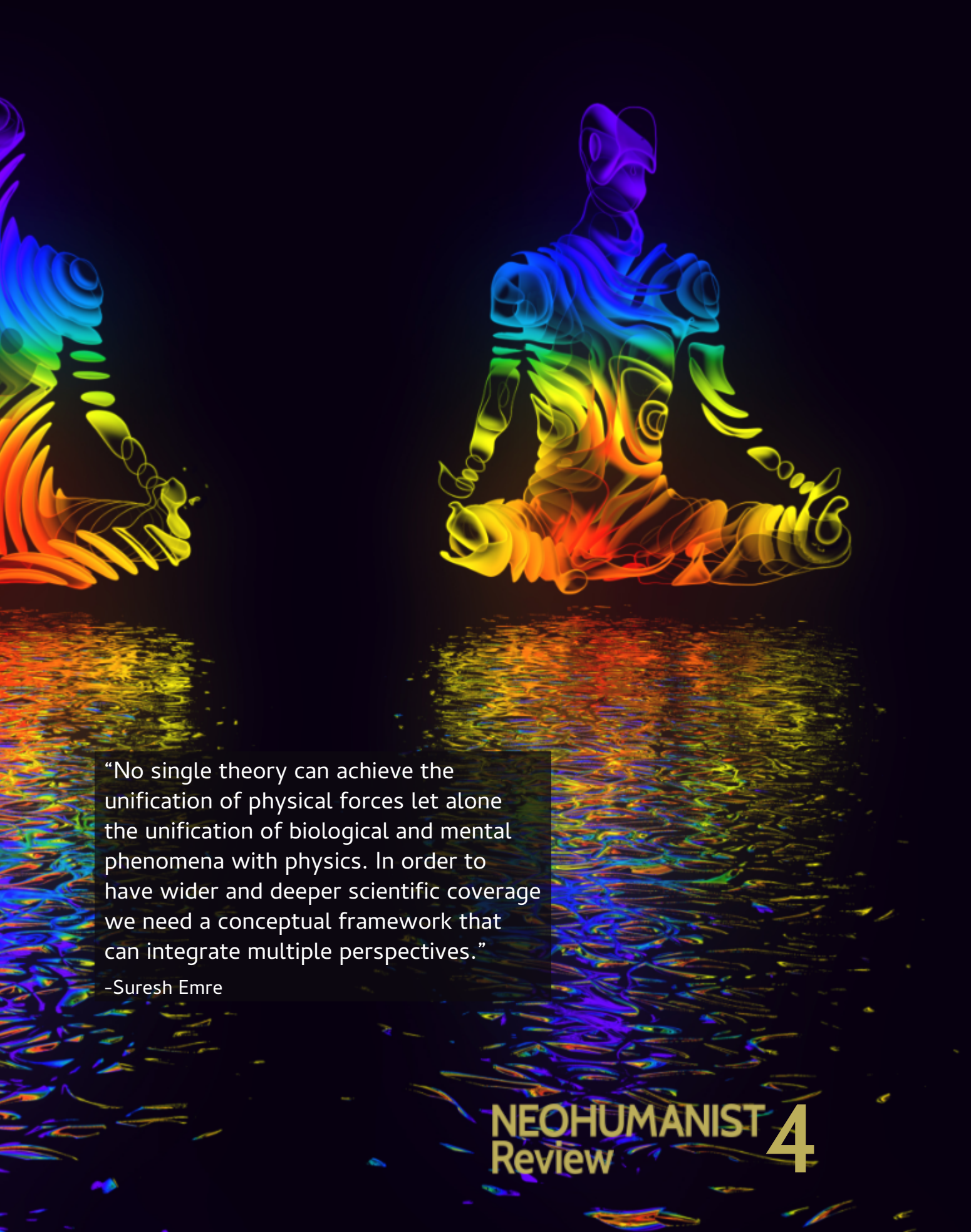
“The spiritual worldview of yoga and neohumanism offer an understanding of nature as a dynamic, living system which will redefine our relationship to concepts of 'truth’. Rather than a single universal truth, many truths exist and must be situated in their appropriate context.”
-Aaron Frank



"No single theory can achieve the unification of physical forces let alone the unification of biological and mental phenomena with physics. In order to have wider and deeper scientific coverage we need a conceptual framework that can integrate multiple perspectives."

-Suresh Emre

# Tao and Tantra; A New Translation and Interpretation of I-Jing

*Hao Vijinana Zhuang*

In 1979, when Shrii Shrii Anandamurtiji visited Taiwan to bless his devotees, he gave a discourse on "Accoustic Roots" in which he revealed something unknown to the world: the relationship between Tantra and Tao. He said:

"The root *tan* means "to expand", and *tra* means "liberator". The science that liberates you from all bondages, physical, mental and spiritual, is *Tantra*; the science that expands your mind and spirit and thus liberates you is Tantra. The metamorphosed form of Tantra about seven thousand years ago became *taota* and after further distortion, further metamorphosis, it became *taoa* in modern Chinese. The Sanskrit *dhyána* became *c'han* in Chinese, *chen* in Korean and *zen* in Japanese."

In another discourse on "The Three Species of Man", he further said:

"In the southern Himalayas, the practice taught by Shiva is known as *Viira'ca'ra*. North of Himalayas in Tibet, China, Siberia etc, the practice taught by Shiva was known as *Ciinaca'ra*, that is the Chinese style…It is an established historical fact that two great lands of ancient civilization, India and China, were united by the same spiritual link. "

Do we have any direct evidence that Shiva's tantric culture spread to China?

We can cite several likely evidences that might support the proposition that it is the case.

1. Swastika: This spiritual symbol commonly used in India is an ancient one. The author had seen such a symbol in the palace Museum in Taipei on a colour vase, dated at about 4500 years ago. It is quite probable that some follower of Shiva brought it to China.

*Hao Vijinana Zhuang is a spiritual philosopher, researcher of Chinese Tantra and neohumanist educator living and working in Taiwan.*

It can also be hypothesized that the *Tai-Ji* diagram is a metamorphosed form of Swastika, a dynamic circle form of the original dynamic square one.

2. If Shiva came to China or his spiritual practice came to China, then there must be some mention of him in the oral or written tradition of China. It has been surmised that the first of the three ancient emperors of China, Fu-Shi was none else but Shiva. Shiva > Va Shi > Fu Hsi. Fu Hsi has been incorporated in the text of *I-Jing* for over 2000 years. Fu Hsi is a culture hero in Chinese mythology, credited along with his wife Nu Wa with creating humanity and the invention of music, hunting, fishing, domestication and cooking. It is said, that in

the ancient times, when Fu-Shi reigned over the world, he observed the phenomena with the virtues of Divine and Bright and categorizes the natures of all beings. Fu-Hsi is also the one who invented the system of Palace and Chamber i.e., marriage. It is also said that Fu Shi invented the Chin and Se, the two classical musical instruments of China. In all these ways, the contributions of Fu Hsi resemble those of Shiva.

3. The third evidence concerns the style of living. Shiva's vehicle of transportation is the yak Nandi. He usually sits on the tiger's skin for meditation. The mode of transportation of Fu His is bluish-bull, and in the paintings, he is depicted as wearing tiger's skin.

4. The fourth evidence is the wife of Shiva, known as Tara in China. The wife of Fu Hsi is Nu Wa. It has been suggested that the feminine form of Shiva, Shivanii > Vanii> Wa Nii> Nii Wa> Nu Wa.

If Fu Hsi of China is the same historical figure as Shiva of India, then I Jing may be considered a scripture of Ciinaca'ra. It may require further research and study.

*Illustration:* Fu Hsi and Nu Wa. *There is significant concurrence with similar symbolic portrayal of the conscious and creative principles (he and she, respectively) as well as the concept of subtle inter-twining energy channels of Tantra found in India.*
*Hanging scroll, colour on silk, mid 8th century (Tang Dynasty), unearthed at the Astana Graves, Turpan, in Xinjiang, China.*
*Source: Wikipedia*

# *Rethinking Climate Change:* A Holistic Approach to Economic and Environmental Solutions

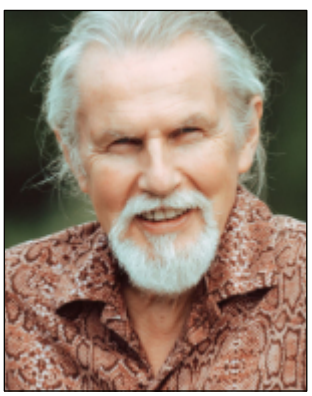
*Roar Bjonnes*

In the article Climate Change… from the Deep Past to the 22nd Century (*Neohumanist Review 2*) author Michael Towsey shares in detail why climate change is nothing new on our planet, that it has happened in the past, has always been challenging, even cataclysmic, but that these events also lead to flourishing evolutionary changes.

In the past, cosmic shifts, sometimes spanning millions of years in the making, have been the main causes of ice ages, droughts, and floods, but also new animal species, even new humanoids. But this time, here in the relatively stable Anthropocene, human-made inventions are the main causes of climate change. To understand climate change on an evolutionary scale, Towsey uses the whole parts model.

"From a systems perspective," he writes, "ecosystems, social and economic systems can be understood as wholes composed of parts (plants, animals, humans, as the case may be). The important insight is that the whole and its parts cannot be understood in isolation—they are interrelated and interdependent. Living systems cycle through four stages: growth → maturity → breakdown → reorganization."

Seen from this macro perspective, we are instructed to see climate change as part of an evolutionary cycle inviting us to adapt to change. According to this model, we have, in fact, reached the maturity stage of our civilization. We are looking at a period of breakdown, and we need to plan for the next stage, for reorganization.



*Roar Bjonnes is an author and co-founder of Systems Change Alliance, an organization advocating for and researching systems change. Bjonnes has written extensively on topics related to new economics, sustainability, environmental conservation, holistic health, and yoga. He is the author of five books, including Growing a New Economy: Beyond Crisis Capitalism and Environmental Destruction and Principles of a Balanced Economy, both based on P. R. Sarkar's Prout economics.*

This is a new way of looking at not only climate reality but also on human history. For centuries, since the great enlightenment ideas and scientific concepts of Copernicus, Bacon, and Descartes, we have operated as if the universe was a predictive machine consisting of neat little parts, easy to manipulate and predict. We have thought of progress, mainly material, as moving in a straight line—from poverty to riches, from primitive to more sophisticated civilizations.

Now, however, we are entering an unpredictable phase of human evolution, and the mechanistic worldview is becoming outdated. A new worldview is needed. New solutions are needed. Systems science has promoted this new worldview of not only parts but also of wholes. A dynamic new vision of reality in which there is both growth and maturity, but also an acknowledgement of eventual breakdown and reorganization.

While Towsey's article focused mainly on the underlying causes of climate change, this article will look at how the new systems worldview emerging within the sciences and among economists, environmental activists, and spiritual thinkers can be applied to finding solutions to not only the climate crisis, but also the social and economic crises, and even to a more fundamental crisis: the crisis of human imagination and meaning. Below are six ways to explore the problems and possible solutions to the climate crisis.

## 1. The Worldview Perspective

Activist thinkers such as Jeremy Lent and Fritjof Capra have highlighted that climate change isn't just about carbon emissions or overuse of nonrenewable energy; it's about our entire way of viewing the world. They argue that our current systems, obsessed with short-term gains and endless growth, are driving us towards ecological disaster. To tackle climate change, we need a fundamental shift in how we see ourselves in relation to nature, embracing a perspective that recognizes our interconnectedness with all life.

The Indian philosopher P. R. Sarkar agreed. He emphasized that a whole new vision, including economic systems change, is urgently needed today. Sarkar proposed a holistic approach to environmentalism and to economics.

At the core of Sarkar's ideas is the concept of Neo-Humanism, which emphasizes the interconnectedness of all life forms and advocates for the well-being of not just human beings but all living beings in dynamic interaction with the environment.

Sarkar argued for a balanced relationship between human society and the natural world, promoting sustainable economics based on decentralization and economic democracy, so that we can meet the needs of the present without compromising the ability of future generations to meet their own needs.

He advocated for the protection and preservation of natural resources, including forests, rivers, and wildlife, recognizing their intrinsic value beyond their utility to humans.

Additionally, Sarkar emphasized the importance of individual and collective responsibility in caring for the environment. He believed that spiritual growth and ecological consciousness are intertwined, suggesting that a deeper connection with nature fosters a sense of stewardship and respect for the planet.

In summary, a systems change perspective is needed today as our civilization, in the words of systems thinker Jeremy Lent, "careens toward climate breakdown, ecological destruction, and gaping inequality."

This crisis, Lent claims, is caused by our fractured and reductionist worldview causing a body/mind and human/nature split invalidated by both indigenous wisdom and modern systems science.

These failures have led to an urgent need for new environmental, social, political, and economic systems that can act in more dynamic balance with nature—the source of all these human-made systems.

## Organisations Working Toward a More Integrated Worldview

1. Schumacher Center for a New Economics (centerforneweconomics.org) - Founded in 1980 to carry on the legacy of E.F. Schumacher's ideas of "small is beautiful" and human-scale economics.

2. Post Growth Institute (postgrowth.org) - Advocates for a transition to a post-growth economy that prioritizes human and ecological wellbeing over GDP growth.

3. Center for Humans & Nature (humansandnature.org) - Promotes ethical and spiritual perspectives on human responsibilities to nature.

4. Neohumanist Educational Futures (neohumanisteducation.org) - Applies the philosophy of P. R. Sarkar's neohumanism to education and social change.

5. Transition Network (transitionnetwork.org) - Supports community-led initiatives for transitioning to a low-carbon, resilient future.

6. P2P Foundation (p2pfoundation.net) - Researches and advocates for peer-to-peer dynamics and commons-oriented policies.

7. The Institute for Sacred Activism (andrewharvey.net) Advocates for the integration of spirituality and activism.

These are just a few of the organizations focused on fostering a more holistic worldview, including rethinking economics, promoting resilience, applying neohumanist principles, and fostering systems change towards more sustainable and equitable societies.

*"These visionary ideas aren't just pie in the sky; they're practical paths forward to a better world. By weaving together bold strategies, ancient wisdom, and cutting-edge innovation, we can chart a course towards a future that's not just sustainable but thriving—for people and the planet alike."*

## 2. The Environmental Change Perspective

Systems visions, such as Sarkar's Neo Humanism, embraces the vision that human society, economics, and technology are subsystems of nature. Without a thriving ecology, there will be no thriving economy.

Building on this vision, the environmental change perspective, influenced by voices like Paul Hawken in his book *Drawdown*, emphasizes holistic changes rather than quick fixes to cut emissions and adapt to a changing climate.

This means ramping up renewable energy, protecting natural habitats, rethinking how we farm, and the food we consume. The aim? To slash emissions while restoring the planet's ability to soak up carbon.

When it comes to shaping the future of our planet, there's a dynamic chorus of visionary voices leading the charge. Let's take a closer look at some of the most inspiring and cutting-edge environmental visions advocated today.

Paul Hawken's vision isn't just about reducing emissions; it's about flipping the script on climate change altogether. His approach is like a treasure map, highlighting the top solutions to reverse global warming.

From embracing renewable energy to empowering girls through education, Hawken's vision covers the whole spectrum of strategies. It's a call to action that sees climate change as more than just an environmental issue but as a chance to create a world that's better for everyone.

Similarly, the degrowth movement isn't afraid to shake things up. Instead of chasing endless growth, it champions a more balanced and sustainable way of life. Think smaller footprints, fairer sharing, and prioritizing well-being over wealth. It's a radical rethink of how we measure progress, offering a vision of a society that's happier, healthier, and more in tune with the planet.

Amid these modern challenges, there's wisdom to be found in ancient traditions. Indigenous communities have long lived in harmony with nature, passing down knowledge that's as relevant today as ever. By honoring and learning from indigenous perspectives, we can gain insights into sustainable living and respect for the Earth that's vital for our collective future.

Technology isn't just part of the problem; it's also a big part of the solution. From solar panels to electric cars, innovation is paving the way to a greener future. By investing in green tech and supporting clean energy solutions, we can speed up the transition to a world where clean air, clean water, and a stable climate are the norm.

These visionary ideas aren't just pie in the sky; they're practical paths forward to a better world. By weaving together bold strategies, ancient wisdom, and cutting-edge innovation, we can chart a course towards a future that's not just sustainable but thriving—for people and the planet alike.

## Promising Environmental Solutions to Climate Change

**Refrigerant Management**
Properly managing refrigerants used in air conditioning and refrigeration systems can significantly reduce greenhouse gas emissions. According to the book Drawdown by Paul Hawken, which lists 80 of the most important solutions to climate change today, refrigerant management is one of the top solutions for mitigating climate change.

**Wind Turbines (Onshore and Offshore)**
Expanding the use of onshore and offshore wind turbines for electricity generation is a highly effective solution for reducing emissions from fossil fuels.

**Reduced Food Waste**
Reducing food waste at various stages of the supply chain, from production to consumption, can substantially lower emissions associated with agriculture and landfills. This solution is a crucial step towards a sustainable food system.

**Tropical Forest Restoration**
Restoring and protecting tropical forests is crucial for carbon sequestration and preserving biodiversity. This solution is particularly important to implement in regions like the Amazon rainforest.

**Mass Transit**
Investing in and expanding public transportation systems, such as bus, rapid transit, and light rail, can reduce emissions from personal vehicles and alleviate traffic congestion in urban areas.

**Concentrated Solar Power**
Utilizing concentrated solar power (CSP) technology, which uses mirrors or lenses to concentrate sunlight to generate electricity, can provide a reliable and renewable source of energy.

**Biochar**
Producing biochar, a charcoal-like substance made from biomass, and incorporating it into soils can sequester carbon and improve soil fertility and water retention.

**Agricultural Revolution**
Move away from centralized agricultural production which relies heavily on a gas guzzling global transport system for its existence, as well as implement policies and infrastructure to ensure increased production of plant crops for human consumption and thus to reduce meat production.

### 3. The Social Change Perspective

Then there's the social side of things. The degrowth movement, for example, urges us to move away from a society obsessed with GDP growth towards one focused on well-being and sustainability. It's about reshaping our values, norms, and behaviors to create a more balanced and fairer world.

Alright, let's talk about the changes we need to make on a personal level to tackle the climate crisis head-on. It's not just about policy and big industry; it starts with each of us making conscious choices every day:

We also need to rethink our consumption habits. That means cutting back on stuff we don't really need, being mindful of where our products come from, and opting for eco-friendly options whenever possible. It's about quality over quantity and understanding that every purchase we make has an impact on the planet.

Our carbon footprint—the amount of greenhouse gases we produce—is a biggie when it comes to climate change. So, we must find ways to shrink it. That might mean driving less, using public transportation, biking, or walking whenever we can.

Most importantly, it must mean cutting back on or eliminating meat and dairy, which have a hefty environmental footprint, as well as cutting down on energy use at home by being more efficient with things like heating, cooling, and electricity.

Another key piece of the puzzle is supporting businesses and initiatives that prioritize sustainability. Whether it's buying from local farmers markets, supporting companies with eco-friendly practices, or advocating for sustainable policies in our communities, every little bit helps. By voting with our wallets and our voices, we can push for positive change on a larger scale.

Knowledge is power, so we need to arm ourselves with the facts about climate change and its impacts. From understanding the science behind it to learning about the social and economic factors at play, the more we know, the better equipped we'll be to make informed decisions and advocate for change.

And let's not keep that knowledge to ourselves; let's share it with our friends, family, and communities, sparking conversations and raising awareness along the way.

Finally, let's remember that we're all in this together. Solving the climate crisis isn't something anyone can do alone; it's going to take collective action on a global scale. So, let's join forces with others who share our passion for the planet, whether it's through grassroots activism, community organizing, or through supporting environmental initiatives in our area. Together, we can make a difference. By making these personal changes and working together towards a common goal, we can help create a more sustainable, equitable, and resilient future for all.

### Social Changes to Avoid Climate Catastrophe

**From Material Progress to Human Progress**
Move away from an obsession with GDP growth and material accumulation. Instead, prioritize quality of life, social connections, ecological sustainability, and human fulfillment over relentless economic expansion. Redefine societal values and measures of success beyond purely economic indicators.

**Reduce Consumption and Embrace Sustainability**
We cannot rely on individuals to make changes, we need public policies to ensure sustainable consumption habits by cutting back on unnecessary purchases, as well as policies for sustainable resourcing, and policies embracing the idea of quality over quantity, because every product and purchase has an environmental impact.

**Rethink Work and Leisure**
Challenge the notion that work is the sole measure of a fulfilling life. Explore options like shorter workweeks, job-sharing, and finding fulfillment in non-market activities like caregiving, volunteering, and personal pursuits. Reclaim time for leisure, community engagement, and personal growth.

**Promote Active and Sustainable Transportation**
Move away from car dependency and promote policies encouraging active modes of transportation

> *Reducing wealth concentration among elites would diminish incentives for corporate leaders to prioritize profit over environmental and climate considerations, thus, in effect, decreasing the production of goods increasing our carbon footprint.*

like walking, cycling, and e-biking. This can significantly reduce personal carbon emissions from transport.

**Reduce or Eliminate Meat Consumption**
Meat and dairy production are one of the main carbon emitters today. Hence, a dietary shift towards plant-based foods and away from meat and dairy products can significantly reduce emissions from livestock production. This is an important way to improve human health and environmental sustainability.

**Foster Democratic Participation**
Encourage community participation in shaping economic and environmental policies to ensure diverse voices are heard and decisions align with local needs and values.

The overarching theme is the creation of a "good society" through a cultural shift towards prioritizing well-being, sustainability, and ecological responsibility over relentless economic growth and material accumulation.

## 4. The Economic Change Perspective

Economically speaking, it's time for a shake-up. Drawing from ideas like Sakar's Progressive Utilization Theory (Prout) and Kate Raworth's doughnut economy, the economic change perspective envisions an economy that works for people and the planet, not just profit margins. Think decentralized, cooperative models and measures of progress that go beyond money to include things like health and happiness.

Imagine a world where everyone—not just the big corporations and the wealthy elite—has a say in how our economy is run. That's the vision of economic democracy, where decisions about ownership structure, production, distribution, and consumption are made by the people, for the people.

We can help this trend by supporting businesses and initiatives that prioritize worker ownership, cooperative models, and community control. By putting economic power back in the hands of the local people, we can create a more just and equitable society.

For too long, our measure of success has been tied to one thing: economic growth. But as thinkers like economist Herman Daly have pointed out, there's more to life than just making more stuff. It's time to shift our focus away from GNP growth and towards measures of well-being that consider things like health, happiness, and environmental sustainability.

So, let's challenge the status quo by supporting policies and initiatives that prioritize quality of life over quantity of stuff. Whether it's advocating for a basic income, shorter work weeks, or investments in social services, let's push for a new way of measuring progress—one that puts people and the planet first.

One of the keys to building a more sustainable and resilient economy is to shift our focus away from global markets and towards local economies. That's where thinkers like P. R. Sarkar come in, advocating for self-reliant, community-based economies that prioritize local production, consumption, and distribution.

We need to start supporting local businesses, farmers markets, and community initiatives that promote self-sufficiency and resilience. By strengthening our local economies, we can reduce our dependence on global supply chains, build stronger communities, and reduce our ecological footprint in the process.

While Sarkar's Prout economy can serve as a foundation for a new economy, Raworth's doughnut economics can help pave the way for a new economy thriving within the "safe and just space for humanity." That means finding a balance between meeting everyone's needs without overshooting the Earth's limits.

By embracing these personal changes inspired by visionary thinkers like Daly, Sarkar, and Raworth, we can help build a more just, sustainable, and resilient world for generations to come. It's not just about changing our habits; it's about changing the very structure of economics, so that we can build a foundation for living in harmony with each other and the planet we call home.

To avert climate catastrophe, we need to transition towards a more decentralized, cooperative, and ecologically sustainable economic model. Here are seven main economic changes required.

## Economic Changes Needed to Create a More Sustainable Society

### Three-tiered Economy

Implement a three-tiered economic system as promoted by P.R. Sarkar's and his Prout economy. But why three tiers? These three tiers exist in society already and have proven themselves to be practical and effective institutions. Good government has shown us how to provide health care and free education. Cooperative enterprises, such as the Mondragon coops in Spain and the Emilia Romagna region of Italy, have demonstrated their effectiveness reducing inequality and improving wellbeing and democratic decision making in business. Small business enterprises are effective at providing employment and resources to the local economy. But no country or bioregion has yet to develop such an economy on a comprehensive scale.

According to Sarkar, such a comprehensive restructuring of the economy will be the most effective way to create a post-capitalist economy with minimal wealth inequality and environmental destruction. Here, in brief, are the three tiers: 1. Government-controlled key industries to avoid concentration of wealth and speculation in key industries such as energy, transportation, and transportation and water infrastructure, and 2. turn corporations into worker-owned businesses to reduce inequality and to maintain mostly locally controlled industry and agricultural sectors, and 3. keep private industries, farms and restaurants small and local to ensure minimum profit speculation and environmental overshoot.

### Local Production

Implement policies that protect and incentivize local production, especially for essential goods, while still allowing trade for strategic materials not available locally. This fosters economic self-reliance and resilience. This reduces resource exploitation, transportation emissions, and economic vulnerability from global supply chain disruptions.

### Decentralized Economy and Economic Democracy

Reorganize production and distribution primarily through cooperatives owned and controlled by workers and communities. Encourage democratic participation in economic decision-making processes to ensure policies reflect diverse voices and local requirements. Community engagement in shaping the economy is crucial.

### From GDP to Purchasing Capacity

Move away from GDP growth as the sole measure of progress and instead use purchasing capacity–the ability of people to afford basic needs–as the primary indicator of economic progress, while also adopting new indicators that account for environmental and social factors. This will ensure an economy away from constant GDP growth to equality and sustainability by design.

### Limits on Wealth

Ingrid Robeyns' concept of limitarianism offers a compelling critique of extreme wealth accumulation, aligning with degrowth principles that challenge infinite growth on a finite planet. In her book *Limitarianism: The Case Against Extreme Wealth*, Robeyns argues for a moral limit to individual wealth, proposing a "riches line" above which wealth is considered surplus. Her main arguments encompass the threat to democracy posed by extreme wealth, urgent unmet needs that could be addressed through wealth redistribution, and ecological concerns.

Robeyns contends that reducing wealth concentration among elites would diminish incentives for corporate leaders to prioritize profit over environmental and climate considerations, thus, in effect, decreasing the production of goods increasing our carbon footprint. By highlighting how the super-rich exert disproportionate influence on political decisions and environmental policies, Robeyns' work has sparked a crucial debate on wealth inequality's societal, economic, and environmental impact.

### Maximum Utilization

P. R. Sarkar and others, such as R. Buckminster Fuller, who developed the phrase "doing more with less" urges us to maximize the utilization of all natural resources to avoid waste and pollution. By employing such a principle, architect and cradle-to-cradle innovator William McDonough has already shown we can create "affluence from effluence." He and his business partner, the chemist Michael Braungart, helped design a carpet factory producing no effluent runoff. This principle thus urges us to proceed with caution and innovation when it comes to developing new technologies and products to avoid pollution and waste of natural resources.

The concept of maximum utilization is a holistic approach to resource management and societal development that not only can produce economic efficiency but also ecological effectiveness. Sarkar's concept emphasizes the use of advanced, eco-friendly technologies to increase productivity while maintaining ecological balance, and stresses the importance of coordinated local economic planning to avoid duplication and maximize cooperation. Importantly, the concept is not static; it calls for progressive adaptation of utilization methods to evolving circumstances and human needs.

*In a world obsessed with material wealth and economic growth, it's easy to lose sight of what truly matters: our inner well-being and personal fulfillment.*

**Rational Distribution of Money and Resources**

Rational distribution, or as Kate Raworth calls it, distribution by design, to ensure that resources are not wasted before, during, and after the production cycle of a product. Rational distribution of money will ensure that all in society have a basic income and that the inequality gap between the lowest and the highest earners is kept at a minimum. This will again ensure less waste and a reduction of carbon output.

## 5. The Well-being Perspective

In a world obsessed with material wealth and economic growth, it's easy to lose sight of what truly matters: our inner well-being and personal fulfillment. This is where the well-being perspective comes in, challenging us to shift our focus from the pursuit of stuff to the cultivation of inner growth and happiness.

Instead of measuring success by the size of our bank accounts or the number of possessions we own, let's measure it by the depth of our relationships, the richness of our experiences, and the sense of purpose and meaning in our lives. By prioritizing inner growth and personal happiness, we can create societies that are not just materially prosperous, but emotionally and spiritually fulfilling as well.

Central to the well-being perspective is the idea that success and progress should be defined in terms of human well-being, rather than GDP growth. After all, what good is a booming economy if it leaves people stressed, anxious, and unfulfilled?

Instead of chasing endless growth, we need to focus on building societies where everyone can thrive, where basic needs are met, and where people feel valued, connected, and empowered. By redefining success and progress in terms of human well-being, we can create a more just, equitable, and sustainable world for all.

A key to promoting well-being is by investing in the foundations of a healthy society: adequate income, affordable housing, health care, education, and social support. Access to quality health care ensures that everyone can lead a healthy and fulfilling life, while education can provide the knowledge and skills needed to pursue our passions and aspirations.

Social support systems, such as affordable housing, childcare, and elder care, help create a safety net that ensures no one is left behind. By prioritizing these investments, we can build societies that are not just economically prosperous, but also socially inclusive and resilient.

At the heart of a well-being society is a sense of connection—to ourselves, to each other, and to the world around us. This is why fostering meaningful connections, cultural and artistic activities, and building strong, supportive communities is so important.

Whether it's through volunteering, participating in community events, or simply spending time with loved ones, nurturing our relationships and sense of belonging is essential for our well-being. By prioritizing community, culture, and connection, we can create societies that are not just happier and healthier, but also more resilient in the face of challenges.

By embracing the well-being perspective and prioritizing inner growth and personal happiness, we can build societies that are not just economically prosperous, but also emotionally and spiritually fulfilling.

It's time to shift our focus from the pursuit of stuff to the cultivation of what truly matters: our well-being and the well-being of those around us. In doing so, we can create a world vision and planet that is not just materially abundant, but also ecologically balanced, socially harmonious, and filled with inner meaning, purpose, and joy.

## Social Policies for Increased Social Wellbeing and Reduced Carbon Footprint

**Implement a Shorter Workweek**

Reduce standard work hours to allow more time for leisure, personal pursuits, and work-life balance. This challenges the notion that work is the sole source of fulfillment. This will reduce GDP but also the global carbon footprint.

**Universal Basic Purchasing Capacity**

A guaranteed purchasing capacity to cover basic needs will reduce financial stress. It will allow people to pursue activities beyond just income generation while reducing the need for government handouts.

**Investing in Community Spaces**
Fund the development of public spaces like parks, community centers, and libraries to foster social connections and a sense of belonging.

**Prioritizing Early Childhood Education**
Increase funding for high-quality early childhood programs like pre-K and Head Start to support cognitive and social-emotional development from an early age.

**Subsidizing Lifelong Learning**
Offer subsidies or tax credits for continuing education, skills training, and personal enrichment courses to facilitate ongoing growth and self-actualization.

**Measuring National Well-being**
Develop robust national indicators of well-being that go beyond just economic metrics like GDP and use them to guide policy making.

The key themes are reducing excessive work hours, providing economic security, investing in education and community, incentivizing sustainable living, and redefining progress using a well-being framework that prioritizes quality of life over mere economic expansion.

## Conclusion

Climate change is a complex, multifaceted challenge that requires a holistic, systems-based approach. It is a symptom of a failed vision and worldview based on materialistic and reductionist thinking and a profit-oriented economy. Drawing from the philosophical perspective of neo-humanism, systems thinking, and alternative economics, this article has outlined a multifaceted strategy to address climate change through systemic change across different domains.

Most importantly, even without climate change, the planet would be facing serious systemic environmental and economic problems today. By accepting that our planet is potentially facing an environmental and economic tipping point, we need to weave together the above-mentioned threads to build a comprehensive approach to tackling the systemic crisis we are in. More importantly, even if there were no climate crisis, we are compelled to implement systems change for moral and philosophical as well as economic and environmental reasons. We have strayed too far away are from what Aristotle considered a "good society." Hence, it is time to address not just the symptoms but the root causes of our planetary predicament, so that we can envision and create a world where both people and the planet can thrive.

*The article with its complete references is available at the journal web pages theneohumanist.com.*

Two Reviews of Kathleen Kesson's
*Becoming One With the World: A Guide to Neohumanist Education*

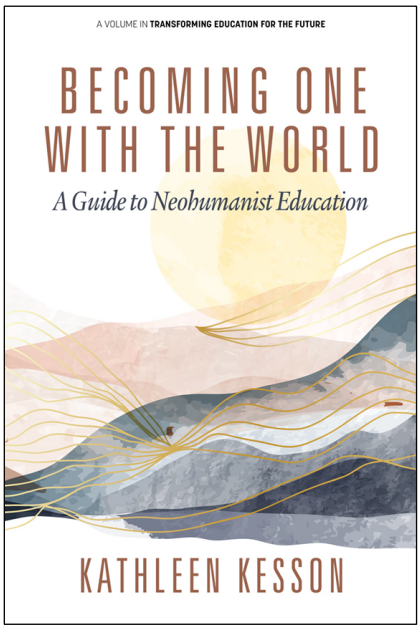
# Beyond Humanism

*Paul Freedman*

In Kathleen Kesson's extraordinary new volume, *Becoming One With the World: A Guide to Neohumanist Education* (2024), the author takes us on a beatific journey of discovery. The text spans great distances progressing step by step from the philosophical and pedagogical foundations of holistic consciousness theory to the contemporary practice of neohumanist education. This book also plunges through many layers of depth reminding us of the deep spiritual connectedness of all beings as the rock-solid foundation of a worldview beyond humanism and the educational models that have emerged from it. This volume offers tools for individual reflection and personal and professional growth through its offer of probing questions compelling the reader to integrate these concepts into our own life and practice. Kesson's ambitious book represents both a challenge and a delight to anyone serious about reimagining and re-enchanting education from the roots up.

To readers of this journal, some of Kesson's chapters in Section 1 of *Becoming One With the World*, will traverse familiar philosophical terrain. She reminds us of many core principles of holistic education, while she simultaneously poses existential questions; "What does it mean to be human?" "What is the purpose of life?" "How do we come to know?" These questions drive an initial exploration of a humanist approach focused on the individual, towards the possibility of an ontological shift, from an absolute sense of being, epistemology and truth towards one that is more relational. Kesson identifies several prominent philosophical traditions that undergird specific approaches to contemporary education, namely, perennialism, behaviorism, romanticism, pragmatism and critical pedagogy. She then proposes a kind of post-humanist approach that is holistic and presupposes much deeper and more essential levels of mutuality and interconnection.

Kesson powerfully describes the need for teachers who embrace this more holistic worldview to be willing to work on developing themselves, unpacking the self in all its complexity and nuance and embracing a journey towards wisdom. Relational and connected teaching is not defined by technique but by being and presence. One must endeavor to see oneself before one can see and engage with learners. Indeed this is not a journey for the faint of heart.




*Becoming One With the World: A Guide to Neohumanist Education*, by Kathleen Kesson. A volume in *Transforming Education for the Future*. Information Age Publishing, Charlotte, NC (2024)

In Kesson's chapter on child development, we see an example of the courageous approach the author takes to questioning and rethinking everything related to our ossified understanding of the educational mission. Here we are encouraged to look through a worldview lens as we consider such "sacred cows" as stage theories of development, our norms-based approach to teaching and assessment, and even the nature of child development as rooted within and focused upon the individual. In every case we are stretched and challenged to wonder, might there be a different way? Could child development be considered relationally, true to our holistic understanding that everything happens in context and in relation to the surrounding beings and the cosmos?

The final two chapters of the book's Section 1 embark on a thorough deconstruction of the ideology and power structures undergirding the contemporary system of mainstream education as well as exploring a radically contemplative alternative perspective. Specifically a chapter on decolonizing school systems lays bare the power structures that are served by school systems, while contemplative approaches are presented as a tangible decolonized alternative.

The author encourages even deeper presence and a kind of reciprocity from and with the reader by the inclusion of prompts for guided reflection at the end of each chapter. In this way, the journey does feel guided as the author walks beside the reader in a way that mirrors and models her understanding of the relational nature of learning.

If Section 1 offers a more familiar and philosophical foundation needed for holistic education, Section 2 is a departure into new terrain. In these chapters, Kesson asks us to consider what kind of education embodies these holistic values and understanding of the world. What sort of educational practice might promote, kindle and nurture this most needed worldview shift, one that re-animates our understanding of life lived in deep connection with the cosmos? It is in this context that the author leads us to take a meaningful look at the practice of neohumanist education.

These chapters constitute the bulk of the text. They are a true gift to those of us who have not had the opportunity to visit a neohumanist school in person. Kesson allows us to examine the process of curriculum development in a neohumanist school, where the term "curriculum" itself takes on new and profound meaning. We get to see and feel the way in which yoga is practiced, taught and integrated into the beautiful holistic pedagogy of a neohumanist school. We get to see and feel the many ways arts are incorporated in these schools, from fine art to movement to music. There is a visceral, textured and practical approach in these chapters. Together they allow the reader to experience the essential practice and beauty of neohumanist education.

In these urgent times, as we find ourselves on the brink of crisis and the prospect of the degraded planetary ecology leading inexorably towards an impending Holocene extinction, education must be reclaimed as holding the potential for evolution and transformation. Educational reform efforts have been woefully inadequate to effect the profound worldview shift that is so desperately needed. *Becoming One With the World: A Guide to Neohumanist Education* offers an opportunity to contemplate humanity's most existential questions and to reimagine our system of education based on a truly holistic consciousness. This approach to educating the new human, neohumanist education, already exists. Kathleen Kesson powerfully and comprehensively makes the case that this is the shift we have been so desperately needing.

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# Myriad Ways To Becoming One

*Shakil Ahmed*

Having worked with education systems over the past 15 years, I do know that addressing some of the complex challenges of today cannot be done with the type of thinking that created these challenges to begin with. Traditional education systems have been complicit in perpetuating the challenges of a world dealing with pollution, violence, inequality, etc. It is not enough to try to improve these systems through technical and technological solutions. There has to be a reimagining of the beliefs and assumptions of "why education" itself.

With this interest I started reading *Becoming One With the World: A Guide To Neohumanist Education*, in search of an alternative worldview and with that, an alternative education. Will a neohumanist education be able to bring the changes necessary to address the complex challenges of today and tomorrow?

## Acknowledging Biases

*Becoming One With the World* is aptly titled, since the essence of the neohumanist movement is to bring out the universal interconnection that all living beings share. The author, Kathleen Kesson, ensures that this point is brought to the fore in each of the chapters of this 400 page guide.

I'll admit a personal bias towards writers who reference Paulo Freire and Ivan Illich; thinkers who have shaped my own thinking. In the spirit of acknowledging biases, I do appreciate the author acknowledging the reader's right to know how an author's ideas are shaped. It is good to see that Kesson has been exposed to a diversity of thinkers in education, including a diversity of cultures.

In that spirit, I should remind readers that my native Bangladesh recently went through a "revolution", or a regime change of sorts, depending on who you ask, and is currently going through a phase that I personally have mixed feelings about. I know that the status quo of education will not help our people much in navigating the challenges ahead. A result of the recent political change has been to pause a curriculum reform and revert back to the old curriculum. We can now only hope that curricular reform will be thought about again.

How can any country think about developing a living curriculum that is not affected by the political regime and random decisions of bureaucrats and technocrats, and instead embedded culturally for the benefit of all its people? This question was another reason of mine for exploring the thinking reflected in this book.

## Embracing the Spirit of Plurality

Now, if one is looking for all the answers in any particular book, then that would usually not be the point of reading. Rather, a book should provide a few answers and numerous fresh questions. *Becoming One With the World* does serve as an introduction to understanding what neohumanist education is and its possible implementations in the real world.

Each chapter provides questions about relevant aspects of education and of neohumanist education in particular, while also offering choices, without being slavishly instructive. Being singularly instructive would have been antithetical to the book's description of how neohumanist education strives towards epistemological pluralism. Each chapter, while sharing certain principles on neohumanist education, also provides a multitude of choices, whether it is of discussing curriculum design, teacher development, the integration of arts and sciences into the classroom, pedagogy, and so on, and even is pluralistic on the notion of the space and time in which learning takes place.

The exercises at the end of each chapter provide opportunities to explore aspects of that chapter in depth, which would be of particular service to those who will read the book together as a collective endeavour.

My question on how to prevent curriculum-at-scale being influenced by the whims and fancies of the few, could be answered by having a pluralistic approach to where and when learning is taking place. Schools are only one site for learning and thus, neohumanist educators can reflect on sites beyond the school.

Of course, when it comes to making choices about education, which philosophy to follow, what kind of curriculum, what kind of pedagogy, etc., another lesson that neohumanist education would teach us is the integration of different educational philosophies, such as perennialism, behaviourism, romanticism, pragmatism, critical pedagogy and holism. A neohumanist approach is an attempt to identify the strengths of each school of thought, and encourages us to be flexible in using lessons from each in various contexts.

In a way, it does feel like being Avatar the Last Airbender—an attempt to embrace the powers of different ways of knowing. Kesson readily introduces concepts from multiple languages and discourses, but she has not made use of the concept of *Sadvipra*—an archetype, suggested by Sarkar, who embraces multiple ways of knowing—but it does feel that a neohumanist education is an education to nurture sadvipras.

*"We long for something different, and this book has it in itself to be a companion to teachers in their journey, if they so choose, to be part of making this difference."*

## On the Philosophical Foundations

Besides introducing the reader to the philosophical foundations of neohumanism and neohumanist education, the Introduction and Part 1 highlight essential concepts of the curriculum and its pedagogy. The introduction can be read as a digest of the book, while the rest of the content indeed provides exposure to issues of each aspect necessary for a deeper immersion.

The Introduction does start with the idea that conventional education and by implication, conventional modes of thinking, have not worked, especially modes that are ego-centric and strictly humanistic in approach; where humans alone remain at the centre. As such, the Introduction serves as a primer for understanding the spirit of neohumanist education, attempting to explain any apparent contradictions—such as that neohumanist education may be systematic but not standardized, and that such education can prepare for a neohumanist future and at the same time engage learners to live in the present.

The neohumanist approach emphasizes relationality, that all humans are connected with all other creations whether animate or inanimate. Love for all created beings is at the core. Reading about it reminded me of a Facebook post I once wrote on the importance of universe-loving leaders, that patriotic leaders are not enough. It is reassuring to see this issue being brought up. However, at the same time neohumanist education is meant to be rooted in local culture and place. To nurture this point, such education needs to be value-driven, character-based and non-colonial in nature.

Chapter 1 introduces us to the philosophical foundations of neohumanism—its cosmology/metaphysics (the origin and nature of the universe), its ontology (the nature of reality), its epistemology (the nature of knowing) and its axiology (its approach to ethics and aesthetics). The core idea is that all matter is generated from Cosmic Consciousnesses and that the ultimate union of the human is with this Infinite Consciousness. Accordingly, the ideal of neohumanist education that emerges is one of young persons growing to expand their circle of love, connecting in meaningful ways with all beings and embracing a compassionate universal outlook throughout their journey in the world.

Thus, the opening pages did made me think that although one may at first be somewhat uncomfortable with having to work within an educational system that one has not yet seen in actual context, if only one remains authentic to the philosophical foundations and principles, it would allow for neohumanist education to manifest in various forms.

Chapter 2 offers reflections on what a neohumanist teacher should be like. While mastering of subject matter is expected, the teacher's interdisciplinary understanding of connections between the subjects taught is equally important. In order to engage learners properly with subjects, teachers need to know their learners and their social context, and at the same time aspire to know themselves—placing emphasis on knowledge about both the outer and inner world. This introspective-cum-extrospective synthetical trend made me think whether facilitators of transformative futures thinking should either be neohumanist educators or at least, be epistemo-logically open to learn from neohumanist education.

Chapter 3 and 4 make us think about the context of the learner and how learners learn. In the pursuit of a new kind of education, conventional child development theories are limited and new theorizing on child development is encouraged. While Kesson mentions that Sarkar is not fixed on any particular theory of child development, a main principle of his is that education cannot be imparted through fear. Rather, the thirst for knowledge needs to be awakened among learners. The understanding of what should be required for learners may be nurtured through intuitive observation, and not by holding tightly onto a theory—a theme that runs throughout the book.

Given that most of our educational models have been inherited, not just through the colonial project but even by the nature of colonization that exists today, it is indeed refreshing to note that the decolonization of education has been highlighted in a separate chapter. Kesson makes it clear that universalism does not mean to bring everyone together under the umbrella of a Western lens. Rather, the author recognizes the importance of sustaining local languages and local knowledge, through diverse universalism.

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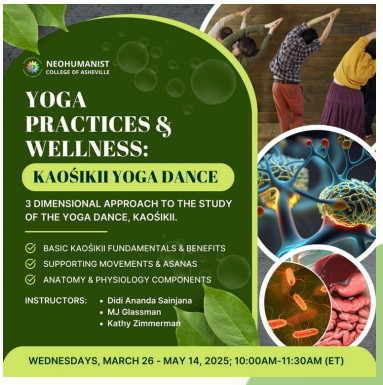





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While principles around decolonizing education were mentioned, throughout the book I was looking for more local examples. Of particular note, whenever holism was being discussed I was hoping for examples of Bhutanese education, given how they have embraced holistic education, following from Gross National Happiness, and even from Chinese scholars. However, the writer has mentioned her biases and even then, she does bring in examples from other contexts, not just the Western context, and does mention Tagore once.

Chapter 6 complements Chapter 3 and Chapter 4 in advocating for the importance of contemplative inquiry, a practice embraced by neohumanist educators. Kesson does make the bold claim that the child is an endangered species, providing examples of how children are being robbed of their childhood. Contemplative, descriptive inquiry is an attempt to make the child visible. This perspective would enable educators to make better learner-centred decisions. I note that Kesson does not use "learner-centred" or "child-centred" as much, since that may also again put the human in the centre; however, the child is indeed a co-creator of their education.

## On Pedagogy and Practices

The chapters in Section II are devoted to the reality of educators regarding decisions that may have to be made when implementing neohumanist education. Chapter 7 provides several resources on how to go about designing curriculum and lesson plans for neohumanist learning.

The tension between educating for a neohumanist future while providing learning that is engaged with the present, reminds me of prefigurative politics to some extent; the idea that what we desire in the future should already be practiced in the present. It is progressive that Kesson takes this broad view of curriculum being the whole experience of the person, preparing the ground for discussing hidden curriculum and null curriculum as well.

The aims and purposes of neohumanist education are reiterated, and reflections are made on subject matter, organizing curriculum, designing activities, and assessments. The author provides useful templates at the end of the chapter, instead of the end of the book, which I think is a useful placement.

Chapter 8 reverts to the art of teaching, parts of which have been highlighted in Chapter 2. However, this chapter takes a deeper dive into metaphors of schooling and the kinds of instructional methods teachers have at their disposal. Again, this chapter is also another example of how Kesson does not want to dictate exactly what the neohumanist teacher should do. Instead, she illuminates the sea of options available while embracing neohumanist principles.

Whereas Chapter 9 shares the importance of embedding the arts in curriculum, Chapter 11, 12, 13 and 14 show how visual arts, music, creative movement/dance and theatre can be embedded in neohumanist education. Chapter 10 addresses how literacy should also be viewed pluralistically. Chapter 15 addresses how yoga and mindfulness should be taught to children. Chapter 16 aids educators in reflecting on how the social context around learners should be explored. Chapter 17 describes the limitations of science and how science can be thought of in a neohumanist perspective and thus, addresses how STEAM[1] can be approached. Chapter 18 provides more context on STEAM in conjunct with neohumanist pedagogy. Accordingly, it can be noted that Part 2 really provides educators, irrespective of their disciplinary backgrounds, a playground to reflect on how they can play a part in implementing a neohumanist education.

## An Invitation to Keep Searching

In the Conclusion, Kesson mentions that the book should be a work-in-progress, given that neohumanism does not preach fixed thinking. Rather, there is need for continuous experimentation, learning, adapting and evolving. Educators thirsty for reflection on a different paradigm of education will enjoy reflecting on the questions and approaches in the book. It is also an invitation for anyone to keep building on the discourse on neohumanist education and education in general. Business-as-usual will not help us in our effort towards an education that we need for a world that works for all its beings. We long for something different, and this book has it in itself to be a companion to teachers in their journey, if they so choose, to be part of making this difference.

*Shakil Ahmed is an educator, futurist and storyteller from Ridiculous Futures. He is currently working on Foresight in Educational Leadership and Technology Management at Tamkang University, Taiwan. While originally from Bangladesh, he lives between Dhaka and Taipei.*

[1] STEAM is an educational approach that combines the arts with science, technology, engineering, and mathematics (STEM). The author reconceptualizes the STEAM acronym to stand for science, technology, ethics, arts, and mathematics, emphasizing the central role that ethical development plays in neohumanist education.

*Continued from page 11 ...* **Towards a Deeper Understanding in Physics**

therefore more difficult to internalize compared to the geometric theories.

Geoffrey Dixon[14] and Cohl Furey[15] followed the footsteps of Feza Gürsey[16] and Murat Günaydın[17] and made progress in terms of algebraic approaches to particle theory. Along these lines, I pointed out that golden biquaternion can represent fermions[18]. Speaking of the algebraic approach, relativistic quantum mechanics can be formulated in such a way that each point in space-time is represented by a biquaternion[19]. Biquaternions also form the core of the "algebrodynamics over complex space" paradigm discussed by V.V. Kassandrov[20].

## 10. Algorithmic Approach

The Algorithmic approach to physics includes information and computation theoretic approaches. Algorithms are clearly different from geometry or algebra. Algorithmic thinking is also very different from the mental activity of finding connections. Algorithmic thinking is difficult to internalize. This did not stop physicists from developing theories based on algorithmic thinking, however.

For a review of information/computation theoretic approaches to physics, see[21] and the references therein. Among the computational approaches to physics, Stephen Wolfram's hypergraph theory[22] is the most developed.

There is another perspective related to information/computation. According to this hypothesis the fabric of the universe is a network of primordial qubits connected to each other by quantum entanglement. Space and time emerge from this qubit network. The ontological status of the primordial qubit is not resolved.

Note that the "qubit network" perspective is very different from the "universe is a simulation" perspective. In the "qubit network" perspective, physicists are talking about the emergence of space-time-matter from the primordial sea of qubits. Once the emergence takes place, the space-time-matter evolves according to its own laws. In the "universe is a simulation" perspective, everything happens according to the logic of the simulation code which can be very complex. The logic of the "code" is not necessarily expressible in terms of laws.

An important contrast between the "simulation" and "hypergraph" is that the rules of the hypergraph are presumed to be very simple. In the hypergraph universe the complexity emerges from repeated application of the simple rules. In the simulation universe the complexity does not emerge. Complexity is built in.

## 11. Depth = Breadth

The ideal theory is expected to be simple, predictive and explanatory. These are high ideals. Typically, we value the predictive power first and the explanatory power second; simplicity is just a dream. An advanced theory may not be simple. Some people also value the mathematical elegance of the theory. That may be just a dream as well. I suggest yet another criterion: the depth of the theory. How deep is the theory in the sense of how fundamental it is? A deeper theory is not a reductionist theory. On the contrary, a deeper theory will explain a wider range of phenomena. The term "fundamental theory" should be defined as the theory that has the widest coverage.

Since the current theory of elementary particles (Standard Model) cannot explain mental phenomena, let alone biological phenomena, we cannot argue that the Standard Model represents a deeper understanding of Reality. The Standard Model is just one of the perspectives.

## 12. Meta-theory

Physics theories are models of physical reality. We perceive the physical reality around us through the nervous system. The physical interaction is translated into electrical pulses in our sensory nerves. These pulses are then converted into an information package by the brain and finally the information package is interpreted by the mind. Physics theories are interpreting the perception. If we call the perception itself a model, a physics theory is a model of a model. A meta-theory then is the model of a model of a model. Meta theories are important for a deeper understanding in physics. A meta-theory would be a theory that explains the theory itself.

## 13. Time

The integrating framework has to improve our understanding of time. This is crucial for progress in physics. In the introduction, I mentioned two fundamental questions that require our urgent attention: 1) what is an electron? 2) What is gravity? The "what" questions will have better answers when we understand "time" better.

"Time" is treated differently in Classical Mechanics (CM), Quantum Mechanics (QM) and Statistical Mechanics (SM). In classical physics we model the continuous motion in space and time and hope that the measurements (snapshots) conform to the model. Quantum Mechanics, on the other hand, was developed by modeling the measurement results (snapshots). The time evolution of the quantum system as described by the Schrodinger equation is an add-on. Developing a movie from snapshot

*Can we relate physics to the theories at the "consciousness is everything" end of the spectrum? This would only be possible by investigating the transformations of Consciousness.*

pictures is done in cinema, of course, but in the physics of the microscopic world, developing a movie from snapshots is extremely difficult. At each measurement the quantum mechanical wavefunction collapses and yields a single state of the system. Stitching together the quantum states to come up with dynamical behavior of the system is problematic. In QM, the concept of "motion" is replaced with the concept of "evolution of quantum states" (quantitatively expressed using the Schrodinger equation or the Dirac equation). The "evolution" refers to the change in the probability of ending up in one of the possible states assuming there is no measurement or no disturbance during that time interval.

In the Newtonian picture of CM, we can predict the motion of a particle in space and time. In QM, assuming no disturbance, we can predict the evolution of the probabilities. In both cases, we are speaking of a single particle. And, in both cases the equation of motion/evolution is time-symmetric. CM and QM allow us to traverse the motion/evolution backward in time (let's ignore the fact that in QM this is tricky). In SM, however, there is an arrow of time. This is related to the fact that we are dealing with a collection of particles and an empirical law known as the second law of thermodynamics. Remember, in isolated systems the entropy tends to increase. This manifests as the arrow of time.

It is quite possible that the arrow of time exists for elementary particles as well, but the equations do not reflect it. I strongly urge physicists to look into this.

## 14. ToE

Among the professional physicists the term ToE (Theory of Everything) is used in a narrow sense. ToE refers to a theory that unifies the four known forces–electromagnetic, weak nuclear, strong nuclear and gravitational. Despite heroic efforts, such a theory does not exist yet.

In 1865 James Clerk Maxwell unified electricity and magnetism under the theoretical umbrella of Maxwell equations. In the 1970's physicists were able to construct a single theoretical framework for the unification of the electromagnetic force with the weak-nuclear force. But physicists failed to unify the electroweak force with the strong-nuclear force. Physicists also failed to unify gravity with other forces. Einstein spent a lifetime trying to unify gravity with electromagnetism but failed. Other physicists did not have any luck either.

Note the difference between "force" and "field". Electroweak theory unifies forces not fields. According to Quantum Field Theory (QFT) each type of particle has its own field. There are only four forces but many fields. There is electron field, muon field, tau field, etc. In general, there are matter fields and force-carrying fields. For example, there is the matter field for the electron and there is also the force-carrying field known as the electromagnetic field. The quanta of these fields (electron and photon, respectively) interact. QFT does not unify the electron field and the electromagnetic field. Rather, QFT describes the interaction between the electron and the photon.

I hope physicists work towards unifying the fields, but unfortunately nobody talks about UFT (Unified Field Theory) these days. The unification of the fields is more difficult than finding a unified description of the interactions among the quanta of those fields. With QFT we are able to explain the interactions between electrons and photons, but we are unable to explain what an electron is or what a photon is. If we could unify the electron field and the electromagnetic field, we would then have a unified description of electrons and photons.

In the context of ToE, "string theory" is often mentioned. The main idea of the "string theory" is that the elementary particles are not point particles but vibrating strings or membranes vibrating in 10-dimensional space-time. Over the course of the last forty years different types of string theories were theorized. There is no experimental evidence for string theories yet.

## 15. Axiomatic, Recursive, and Operational Explanations

The Integrated Information Theory (IIT)[23] [24] and the Assembly Theory (AT)[25] emphasize axiomatic, recursive, and operational explanations with strong emphasis on path-dependence.

Recursive explanations involve feed-back loops referring to self (life in the case of AT, consciousness in the case of IIT). In AT and IIT, life/consciousness is the axiom – the starting point. AT assigns primary ontological status to "life", IIT to "consciousness" and investigate what must have happened in the past for life/consciousness to emerge. These theories place more emphasis on the operations/functions on the substrate rather than the substrate itself.

Both AT and IIT put a lot of emphasis on path-dependence. Standard theories of science emphasize the laws (equations, regularities, mechanics, dynamics). AT and IT say that "history" (the specific path taken) is more important than the laws. The specific path (individual history) taken in the course of evolution eliminates a countless number of other possibilities and selects for a narrower space of future possibilities.

AT and IIT do not deny the dynamical laws, but they do not assign primary importance to them. They seem to pay attention to the conservation laws (constraints), however. Otherwise, they could not explain the evolutionary selection – the elimination of future possibilities based on the specific path taken.

In AT and IIT the explanatory factors are functions/operations rather than the building blocks themselves. For example, in this view, life/consciousness can be based on carbon or on any other chemical or electronic substrate as long as the functions/operations result in life/consciousness.

## 16. Microvita

> *"In 1986, Prabhat Ranjan Sarkar introduced the subject of microvita for the first time in a discourse 'Microvitum—the Mysterious Emanation of Cosmic Factor.' He explained that microvita are subtle, sub-atomic living entities that move throughout the universe, creating minds and bodies, and also spreading diseases. He said that there are positive and negative, as well as neutral, varieties of microvita, and they have three different levels of subtlety. They move through physical and psychic media, and play various roles in the evolution of life and mind."*[26]

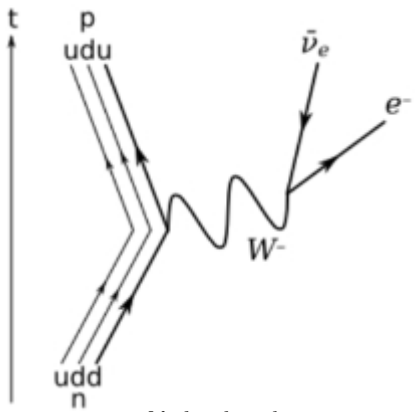
P.R.Sarkar's discourses on microvita were published in a book form under the title "Microvitum in a Nutshell"[27] in 1988.

It is beyond the scope of this article to review microvita research. I encourage physicists to consider a wide range of ideas presented in references[26 28 29 30 31 32 33].

The microvita hypothesis suggests that an atom is composed of billions of microvita. This implies that microvita play a role in the confinement mechanisms and the formation of elementary particles.

Richard Gauthier[34] discussed the possibility of microvita release in nuclear decays. There are theoretical reasons to believe this is the case. Nuclear beta decays are facilitated by the weak-nuclear-force. During beta decay, a down quark within the neutron emits a W− boson, transforming into an up quark, and the W− boson then decays into an electron and an antineutrino.

(unstable nucleus) neutron → proton + electron + antineutrino




*Nuclear beta decay*

The weak-nuclear-force is also responsible for the transformation of a neutrino into an electron. A neutrino hitting on a neutron may transform into an electron while the neutron turns into a proton. For this to happen, the neutrino has to have more energy than the mass-energy of the electron. Solar and reactor neutrinos have enough energy to create electrons.

Energetic neutrino + neutron → proton + electron

We should also note that the weak-nuclear force plays the key role in the production of solar neutrinos.

(fusion) proton + proton → proton + neutron + positron + neutrino

As can be seen in these reactions, the weak-nuclear-force (mediated by the W− boson) effectively manipulates the electric charge.

If microvita play the primary role in confinement mechanisms in general, and the formation of the electric charge in particular, then it would be possible for microvita to manipulate the electric charge. This is very similar to the function of the weak-nuclear-force. Microvita may have the ability to turn on or off the electric charge via its control over the weak-nuclear-force. This may be related to Gauthier's suggestion[34] that radioactive atoms release microvita. This is also consistent with Towsey's suggestion[29] that microvita enhance or suppress propensities (charges).

## 17. Life, Mind and Consciousness

The difficulty of relating physics to life, mind and consciousness is primarily about modeling subjective experiences in objective terms.

In a book length open-access article[35], Robert L. Kuhn surveys (categorizes and summarizes) a bewildering number of theories of consciousness. There are omissions, however. P.R. Sarkar's spiritual philosophy is not included.

Kuhn's survey covers a range of theories from rigid physicalist views claiming life, mind and consciousness are epiphenomena of the physical, to the views claiming everything derives from Consciousness (Consciousness with capital "C"). How can we relate physics to these theories? The physicalist end of the spectrum is based on the known physics, so the real question is: can we relate physics to the theories at the "consciousness is everything" end of the spectrum? This would only be possible by investigating the transformations of Consciousness.

The theories mentioned in Section 15 (AT and IIT), take life/consciousness as the axiom and investigate what must have happened in the past, in terms of the possible historical paths, for life/consciousness to emerge from the physical realm. This is very promising approach but it seems to me that the stages between the unqualified Consciousness and the physical (qualified Consciousness) are ignored. AT and IIT focus on the physical stage only.

The other approach would be to limit our focus to the transition between the pre-physical stage and the physical stage. In other words, understand the abstract generators of space-time-matter first. Then after significant progress in that area, take another bold step to study the genesis of the abstract generators themselves. This would be a never-ending scientific journey.

## 18. Abstract Generator

As mentioned in Section 5, Roger Penrose, Max Tegmark, Mark Alford, Piet Hut and many other scientists argue for the existence of the abstract realm, they call it the mathematical reality and claim that the physical reality emerges from the abstract realm. Similar cosmogonies are found in Eastern philosophies.

What are the facilitators of the emergence of space-time-matter from the abstract realm? What are the candidates for abstract generators of the intrinsic properties of the elementary particles?

In Stephen Wolfram's hypergraph[22] approach, the abstract generators are known as "rules". According to this theory, the repeated application of the "rules" generates the effects we observe in the phenomenal world.

In a theory proposed by David Deutsch and Chiara Marletto[36], a "constructor" is an entity that can cause a transformation without being affected by that transformation. Their "constructor" is a type of abstract generator.

More examples of abstract generators can be found in code-theoretic or information-theoretic approaches to physics. Elements of the Penrose mathematical realm, causal sets, Nima Arkani-Hamed's geometrical or combinatorial principles belong to the category of abstract generators as well.

The golden equation ($g - 1/g = 1$) mentioned in18 and the two fundamental factors (confinement/liberation) mentioned in[37] are other examples of abstract generators.

In the most general sense, we can think of the abstract generators as codes implemented on the pre-physical substrate (primordial fabric). Various archetypes are abstract generators as well.

## 19. Microvita and Abstract Generators

Microvita could be considered as abstract generators too. I think that the cittanu (mind atom) concept of P.R. Sarkar should be part of this discussion as well. This is a neglected area. I don't see any significant discussion of the relationship between cittanu and microvita in the works of microvita researchers.

The term "cittanu (mind atom)" can be used to refer to the ultimate abstract generator. In this sense, "cittanu" includes all possible abstract generators.

Microvita may have a role in the activation as well as the modification of the abstract generators. Once activated, abstract generators manifest the physical effects. It is possible to think of this as projection into the physical realm, or codes being expressed, or primordial fabric transforming into physical.

## 20. Long Road Ahead

There are multiple proposals for abstract generators. Wolfram's hypergraph is the most developed one. The research on the abstract generators belongs to the first prong mentioned in Section 1, namely the research trying to answer the "what" questions. This type of research is in very early stages.

The second prong which is about understanding the connections, correspondences, and equivalences between different physics models is not actively pursued. There are no incentives for this type of research in academia. On the contrary, the academic institutions encourage specialization. Nicholas Ahmann's article[38] is a thoughtful examination of the unification efforts in physics.

*The article with its complete references is available at the journal web pages theneohumanist.com.*

*Continued from page 17 ...* **Systems Thinking and Embracing the Plurality of Truths**

Infinitely precise measurements don't exist. Astronomers don't achieve perfection, but calculations of planetary motion were so accurate that people forgot they were 'forecasts' (Gleick, 1987).

This faith in approximation, a foundational pillar of both Newtonian physics and western reductionist science, holds that predictive models can ignore features that have small effects. When predicting the arrival of a comet, for example, "if approximately accurate inputs give approximately accurate outputs, a tiny discrepancy can remain invisible for millions of years" (Gleick, 1987).

The success of the reductive use of approximation in many domains over the past several centuries, Musk's orbiting Starlink satellites included, has resulted in a scientific landscape which now overuses the tool of reduction beyond the boundaries of where appropriate or useful.

Oxford researcher, Brian Klaas, has pointed out that in the social sciences, researchers in fields like economics, psychology, and political science have come to depend on the reductionist tool of linear regression (Klaas, 2024). By analyzing historical data, linear regression models seek out simplified cause and effect relationships to determine which variables drive change in an environment. This approach presumes to convert the messy and dynamic behaviors of nonlinear systems into the cold predictable machinery of cause and effect.

> *"By smoothing over near-infinite complexity, linear regressions make our nonlinear world appear to follow the comforting progression of a single ordered line. This is a conjuring trick. And to complete it successfully, scientists need to purge whatever doesn't fit. They need to detect the 'signal' and delete the 'noise'. But in chaotic systems, the noise matters." (Klaas, 2024).*

The attribute of nonlinearity inside complex systems, means that interactions occurring between parts generates new information not present in the initial conditions (Gershonsen, 2011). This concept of feedback loops is core to the inner working of complex systems.

> *"When modeling the movement of a hockey puck sliding on ice, for example, you cannot assign a constant to the importance of friction because its importance depends on speed. The speed, however, depends on the friction. The act of playing the game has a way of changing the rules" (Gleick, 1987).*

> *"A complex system is thus not only one whose behaviors are incredibly sensitive to initial conditions, where nonlinearity produces novel information mid experiment, but also one in which the number of independent interacting components is large" (Ladyman et. al, 2012).*

The paradox, however, is that complex systems also follow "lawlike and causal regularities, and various kinds of symmetry, order and periodic behavior (Ladyman et. al, 2012). That is, they follow rules and patterns. Therefore, complex systems require us to navigate both the rigidity of machine-like repetition and the flexibility of chaotic variability. And much like our universe itself, which we'll come to, complex systems are adaptive in that they can respond dynamically to changes in their environment, are self-organizing, and function without regard to an external control.

Therefore, at the conceptual heart of this new paradigm of science, is a core principle that relationships between components in a system dynamically interacting is as important as any one isolated part. No longer a talking point exclusive to the tree-hugger types, science is indicating more loudly than ever that reality is intrinsically interconnected as one single harmonizing system.

## A New Approach to Scientific Inquiry

Approaching 'complexity science' as a discrete area of study under its own domain misunderstands the implications of its core idea. Philosopher James Ladyman and colleagues ask, "whether there is such a thing as complexity science, rather than merely branches of different sciences, each of which have to deal with their own examples of complex systems" (Ladyman et al, 2012).

Systems thinking, as it's often called today, is a way of approaching the questions we ask and solutions we build rather than its own field of study. To highlight how this paradigm shift is reorienting entire branches of the scientific landscape, it's worth exploring the life sciences as one example of a domain currently experiencing a remarkable transformation.

For several centuries, the conceptual frames of reductionism have permeated views of biology and in the digital age there is a tendency to equate living cells with computers. As an expression of this, Craig Venter, the scientist who led the first team to fully sequence the human genome is entirely mechanistic in his understanding of biology. He says, "life is a DNA software system. All living things are solely reducible to DNA and the cellular apparatus it uses to run on" (Corbyn, 2013).

This view, a form of genetic determinism, is reckless in its overstatement. Inside a cell, nonlinearity is on full display as billions of

*"Inside a cell, nonlinearity is on full display as billions of interacting molecules change their behaviors from one environment to the next."*

interacting molecules change their behaviors from one environment to the next (McCarty, 2024). We now know that the ingredients of life at the molecular level are constantly shifting their activity based on what is happening around them.

Jeremy Lent writes, "since the discovery of DNA in 1953, we've come to learn that proteins act directly on the DNA of the cell, specifying which genes in the DNA should be activated. What this means is that there is no such thing as a 'gene for something' but rather genes are expressed within the cell because of what is going on around them" (Lent, 2021).

As a dramatic example he highlights the case of grasshoppers and locusts, commonly understood as being different insects which even look quite distinct. Yet there is no taxonomic difference because they have the exact same DNA (Dobbs, 2013). Lent writes, "When certain kinds of grasshoppers sense its environment changing, either from food scarcity or overcrowding, it can transform itself within hours into an aggressive locust. Its cells switch on different genes within its DNA; it begins shrinking its legs and wings, changes its colouring, even grows its brain to deal with the social complexities of the swarm. Later on, when the environment improves, its cells again switch their DNA settings, and the locust magically transforms back into a grasshopper."

Reflecting Rübsaam's ideas regarding difficulties categorizing the world for analysis, genetically speaking, a grasshopper and locust are identical. The way in which we articulate a distinction says nothing about their 'DNA software system' and is entirely contingent on a relationship of interactions occurring between their genes and the environment.

Perhaps instead of thinking of DNA as a deterministic machine, one emerging metaphor is to consider it like a piano keyboard where each key accounts for a segment of DNA capable of expressing a certain trait (Miller, 2012). In that sense, genes are not our destiny, but DNA rather sets the boundaries of which notes might be played by the environmental piano player.

Many research teams within the life sciences are certainly aware of the shift in thinking about the nature of biology and many now take a systems approach to their work. However, our cognitive frames have yet to realign to these new understandings. Unlike what reductionism suggests, nature cannot be understood by way of freezing it in place. As Alan Watts writes, "our universe, including ourselves, is thoroughly wiggly" (Watts, 1966).

## The Spiritual Worldview: Seeing the Universe as a Complex Adaptive System

Rather than demanding an entirely new metaphysics, developments in complexity science align perfectly well with the spiritual philosophies of yoga. The teachings of P.R. Sarkar, of which the yogic ideas presented here are based, are remarkable not for their novelty but for their synthesis combining Vedic and Tantric concepts already several thousand years old. Sarkar has mainly reinterpreted these ancient ideas within the context of modern understandings in physics, human physiology, and bio-psychology.

If, as Gödel's second incompleteness theorem indicates, models of reality rest on unproveable foundational assumptions, the key distinction between realist materialism and the spiritual worldview of yoga can be understood as conflicting claims about the fundamental substrate of reality. Where materialism assumes it is physical matter, the spiritual worldview asserts that consciousness is the

substance of existence. The nature of consciousness, if it can be referred to as a thing at all, is an all-pervading field of awareness or fundamental sense of "I". It is an undefinable formlessness capable of expressing itself as the energetic waves which comprise the material universe and the physical matter we experience.

Yoga tells us that reality is more an imagining mind than a programmed machine.

Within this metaphysics, existence can be thought of as one infinite, vibrating, and wiggling "self". Indivisible wholeness is entirely counterintuitive to our personal experience as subjective perceivers of separateness, since we experience reality through the perspective of a finite 'unit self'. The cosmic or absolute self refers to the underlying infinite consciousness in its totality or the singular wholeness of existence (Sarkar, 1955). Yoga, meaning 'union' in Sanskrit, not only puts forward these claims through a philosophical knowledge system, but also comprises an embodied set of practices aimed at mediating the relationship between our unit self and its desire to seek union with the indivisible whole. When a unification occurs, the unit consciousness ceases to experience a separate identity (Sarkar, 1979).

In the language of quantum physics, "the wave function, not matter, is fundamental reality" (Richheimer, 2021). A wave function is simply a collection of probabilities about the state of a quantum system, and only becomes 'real' in the experienced sense when observed. "The wave function that describes the entire universe is fundamental reality, and from the spiritual point of view is called cosmic mind" (Richheimer, 2021). An important feature of the wave function is that it cannot be expressed as a collection of separate parts, but as an interconnected web of possibilities (Richheimer, 2021).

Thus, what yoga and complexity science share is both a primary focus on interconnected relationships rather than isolated parts, as well as an integration of consistent principles governing a system and the unpredictable ways it can express itself.

Within the yogic system, which is comprised of rigid guidelines, is also the concept of 'time, place, and person' (Sarkar, 1957). The moral laws of Yama and Niyama for example, a core pillar of yogic philosophy, are built on foundational principles that are universal in nature yet cannot be mechanistically codified due to the inherent flexibility needed to adhere to them. Following Yama and Niyama may require one set of behaviors in one context yet require seemingly opposite behaviors within another. It is for this reason that yoga places so much emphasis on developing intuition through meditation as a sensemaking tool, and why Sarkar's concepts of Neohumanism call for an integration of intuition with the rational logic of conceptual reasoning (Sarkar, 1982).

He writes that, "society is not a static entity, but a dynamic one and so no single economic, political or religious structure can be the permanent answer to humanity's needs. This is because theories are born in a particular temporal, spatial and economic environment. It may be that something which is quite useful for a particular time, place and person is totally worthless for a different time, place or person. After observing the effectiveness of a theory in a particular context, short-sighted people begin to believe in its eternal effectiveness. This is a total illusion" (Sarkar, 1957).

The idea that the world is a machine or that nature can be conquered with the tools of prediction, simply doesn't map to this view of existence. Much like in a complex system where dynamic changes in the environment can generate new information not present in the initial conditions, the concept of 'time, place, and person' allows for yogic systems to adapt to changes in society. It is this element of yoga which maintains unchanging universal principles, while adapting to the ways that "playing the game changes the rules."

Complexity science and the spiritual worldview of yoga both invite us to see the intrinsic connectedness of existence and the irreducibility of dynamic systems. We are not merely separate parts but also participants in a unified and connected whole, and for western cultures, these cognitive frames are still foreign to our reductionist patterns of thinking (Lent, 2017).

## The Systems Approach to Truth: An Ecology of Contexts

At the core of a metaphysics which equates truth with predictive power is the idea that truth is something inherently universal, unchanging, and singular in nature.

While complexity science doesn't inherently refute realist philosophy or materialism, it certainly invalidates reductionism as being the tool for accessing 'truth'. Complexity science tells us that perfect prediction is an impossibility, therefore any epistemology which equates truth with predictive power must either concede that absolute truth does not exist, or that it is inherently unknowable.

Yogic philosophy proposes that an absolute truth of indivisible wholeness exists, is tightly coupled with the concept of infinity, but is beyond the scope of the material world. Our physical and conceptual sensemaking systems cannot formally conceive of absolute truth through cognition, logic, or reasoning. Infinity, by definition, cannot be reduced to any definable conceptual or symbolic representation.

*"Our mainstream thought structures are still saturated by centuries of language and metaphors equating nature with a machine (and more recently with computers) and it will take time for a paradigm shift to penetrate our metaphysical perceptions of reality."*

This infinite wholeness can be directly 'realized' as a sort of embodied experience, but it cannot be formalized in any symbolic system of math or language.

Therefore, yoga proposes, and complexity science seems to agree, that there is no one singular 'truth'. Truths are always contextual, and those contexts have limits to the boundaries within which things can be said to be 'true'. To oppose this claim, a Platonist within realist philosophy will point toward mathematical statements such as 1+1=2. The apparent universality of such a fact would indicate that math cannot be a subjective invention of the human mind, that math is discovered and not invented, and that mathematical truths are universal in scope. They argue that this serves as evidence for the existence of external objective truths.

However, rather than confirming an external ground truth, the power of mathematics in its explanatory capability is just as likely an expression of a well calibrated relationship between a particular system of perception and its environment (or the unit self and an aspect of the larger absolute).

A yogic perspective would make space for more nominalist views in pointing out that mathematical objects like numbers, rather than being an objectively real entity, are symbols used to reflect back what we perceive in the world. A two isn't objectively real in some platonic realm, but rather a symbol humans use which captures the perceptual experience of seeing a 'pair' of things, just like the word 'rock' is a symbol to encode for a certain object we encounter.

The 'truth' of mathematical statements that result from manipulating these symbols is also relative to a particular system's adopted rules and axioms. For example, when most people think of math where 1+1=2, they are building from a set of axioms, or starting assumptions, put forth by Giuseppe Peano, the developer of 'Peano arithmetic' (Hosch, 2024). This system, which forms the foundation of the math taught in grade school, formalized the number theory which underpins everything from basic algebra to the algorithms used by most computers today.

Published in 1931, Gödel's two incompleteness theorems shocked the world of formal logic when it showed that even Peano arithmetic is incomplete and incapable of proving its own consistency (Sautoy, 2021). Gödel achieved this by encoding self-referential statements into arithmetic using a formal method, demonstrating that there are certain true statements which cannot be proved from within the system.

Though Gödel's theorems apply specifically to formal systems capable of describing their own rules, their philosophical implications are significant. First, there is no such thing as a 'theory of everything' as there will always be some unprovable yet true statements within any symbolic system of logic contingent on the starting assumptions. Second, it means that the usefulness of even Peano arithmetic,

which is certainly considerable, will always be constrained by theoretical incompleteness and will always remain particular to a certain context or domain, even if a large enough one as to appear to us as universal.

Though Gödel attempted to resolve the implications of his breakthrough within his own realist worldview (Raatikainen, 2022), his theorem indicates that what appears as objective truth in mathematics does not require some independent and separate existence. It is simply reflecting the internal consistency of a particular formal system. Much like how the rules of chess are invented, once established, players can "discover" the best moves within that system (Weir, 2024). Mathematics is similar as a constructed framework where discoveries follow from invented rules.

The invented rules of mathematics are a result of things that appear so fundamentally self-evident to our perceptual systems that most people assume they are a representation of an 'objective' external truth. And the success of mathematics in science and engineering is due to its effectiveness as a tool to engage with the nature we observe. In a practical sense, the bounded territory within which certain mathematical statements are true may be so large as to reasonably refer to them as 'universally true', yet it requires an act of faith to presume that those true statements exist as an objective realm of truth independent from a subjective observer.

Additionally, the label 'universal' has a poor track record of remaining permanent.

As Jeremy Lent, writes, "even within mathematics, laws once viewed as universally true are sometimes later found to describe a more constrained set of circumstances. For example, Euclid's laws of geometry were considered universally true until the nineteenth century, when a series of breakthroughs led to the conceptualization of geometry in curved space following different laws, which became known as non-Euclidean geometry. Similarly, Newton's laws were viewed as universally applicable until Einstein demonstrated they were not valid in certain circumstances. In neither case was Euclid or Newton proved wrong, rather the scope of their laws, once thought to be universal, was constrained by new findings."

What happened to Newton now appears certain to happen to Einstein and the standard model which currently operates as the dominant 'universal' explanation for understanding our cosmos (Dominant Model of the Universe is Creaking, 2024). Scientists had presumed that the universe was expanding at a constant accelerating rate everywhere based on the assumption that the density of dark energy has been the same since the universe began. New research recently confirmed by the James Webb Space Telescope (Ouellette, 2024), which has the distinct odor of a dynamic, feedback driven, non-linear system, now suggests that the features of dark energy are not constant across spacetime as previously thought. This means that the standard model may hold true within our corner of the universe, but the universe may not be accelerating away from itself in all places. This aligns with a core concept of Sarkar's teachings that the idea of a 'heat death' in our universe is a myth (Sarkar, 1959), and it looks increasingly plausible to say the universe is itself a complex adaptive system.

Just as it appears to be the case in cosmology, and as yogic philosophy argues, truths like Newton's laws, Einstein's Standard model and whatever is coming next will remain contextual rather than universal. Rather than a scientific journey up a fixed hierarchy of truer and truer ideas, as many intellectuals today propose (Eriksen, 2024), both yoga and systems thinking shows us that discovering truth is far more about matching a particular truth to its appropriate environment.

Many of the ideas proposed here can feel destabilizing, disorienting and uncomfortable, as if arguing a nihilism in which there is no ground truth to stand on. Taking a yogic view, however, points out that a ground truth, relative to our personal experience of separateness, does in fact exist. But rather than being some separate external realm, ground truth exists in relationship to another part of the indivisible 'self' of existence. In that sense, nature, which we're seeking to understand through the symbolic systems developed from our perceptions of it, is an extension of ourselves.

Reality, then, can be understood as a singular infinity expressing itself as a multitude of finite forms exploring itself through various conscious perspectives. In that sense, the human endeavor of philosophy, science, religion, or any domain seeking absolute 'truth', is an expression of infinite consciousness developing finite versions of itself which then work to discover what it, itself, is. This as a process, by definition, will never reach completion. And it is exactly this yogic perspective which helps resolve the apparent self-referencing paradox at the heart of Gödel's results.

Those who hold reductionist views of a singular objective truth, and who even seem to understand Gödel's theorem, often dismiss the "self-referential trickery" (Eriksen, 2024) as irrelevant to the project of finding truer models, as if it's an annoying fly to shoo away. In fact, the self-referential statement in his theorem is pointing at exactly the deeper truth of 'self-realization'. Much like a finger can never point at itself, it can only be itself, the yogic goal of 'self-

*"Both systems thinking and yogic perspectives tell us that defining the correct methodology or system of inquiry, whether logic, intuition, or something else, requires situating it within the appropriate context."*

realization' and union with an indivisible whole is an absolute truth which cannot be conceptually known with logic but only experienced directly.

## Conclusion: Grounding Truth Within Neohumanism and the Practical Reality of the Material World

At its core, the project of yoga is one of aligning both the mental and physical patterns of the individual (unit self) and the collective movement of society with the energetic wave signatures of the cosmic mind. When an individual's mental and physical energetic patterns merge with the thought projections of the cosmic mind, a distinction between the two no longer exists resulting in the experience of 'union' to which the word yoga refers.

Neohumanism as a philosophical orientation built on these spiritual ideas, comprises a variety of tenets intended to align a society with the deeper principles intrinsic to the cosmic mind. Therefore, it is challenging to create a clear demarcation of Sarkar's views into the opposing categories of realist and idealist philosophy. Sarkar's views may be classified as a form of spiritual monism, situated within an idealist view of consciousness as fundamental, yet maintains elements more typically associated with realist and Platonist thinking.

This is the case in part due to the idea that Sarkar rejects the idea, common in some varieties of spiritual thinking, that the material world is somehow just an illusion. Though derived from the cosmic mind as a thought projection of infinite consciousness (idealism), in a practical sense the material world is real and deserving of our full participation grounded in ethical principles universal to humanity.

Therefore, while his views are certainly relativist, he rejects versions of relativist thinking which propose that no universal benchmarks with which to analyze moral behavior or structure society exist (Sarkar, 1957). Much like systems thinking attempts to reconcile the relationship between rule-based patterns with the unpredictability of variable expression, Neohumanism proposes that there are deeper principles of morality intrinsic to the cosmic mind and therefore universal across humanity. Sarkar has criticized forms of moral relativism from the past which have resulted in confusion within society (Sarkar, 1957).

While Sarkar does maintain that a subjectivity exists at the heart of even the most objective-seeming truths, his Neohumanism grounds these truths as practical elements to be used in the material world. Rübsaam, in her work, uses the phrase 'operational truths' to account for the usefulness of concepts perceived as 'objective' through most reasonable sensemaking systems.

The nature of inherent subjectivity and fluidity to the boundaries of what is considered 'reasonable', underpins Neohumanism's call to integrate conceptual reasoning (rationalist approaches) with the development of intuition through structured practices of meditation. Intuition developed through meditation is simply an alternative methodology of inquiry into the nature of existence, and one that should be integrated with the tools of logical reasoning.

Neohumanism is also rooted in a practicality that would find it unnecessary to debate whether mathematical concepts platonically exist as some aspect of existence or are invented through human conception. It is more concerned with the capacity of math as a practical tool in the service of promoting welfare for society based on deeper principles universal to humanity.

Therefore, questioning the limits of reductionism as a mechanism for discovering truth is in no way an indictment of its ability to uncover useful models. What both systems thinking and yogic perspectives tell us, is that defining the correct methodology or system of inquiry, whether logic, intuition, or something else, requires situating it within the appropriate context.

Measured against the backdrop of several centuries of reductionist thinking in the west, science is only just awakening to the new paradigms of systems thinking. Our mainstream thought structures are still saturated by centuries of language and metaphors equating nature with a machine (and more recently with computers) and it will take time for a paradigm shift to penetrate our metaphysical perceptions of reality.

Reductionist systems of analysis will continue to offer views into the patterns of nature which allow us to control our environment. Our cognitive frames, however, need time to absorb the lessons of complexity science asking us to see reality, not as a rigid machine to be controlled with a fixed universal truth, but as a dynamic living system full of contextual truths to align with in harmony.

*The article with its complete references is available at the journal web pages theneohumanist.com.*

*Continued from page 23 ...* **The Sounds and colours of Creation**

like our Sun, they form an outward-moving, penetrating wave front, akin to an acoustic ripple, undisturbed by physical matter. At the typical energies of solar electron-neutrinos, oscillations result in a "peak" density of muon-neutrinos at approximately 0.3 AU and a reappearance of electron-neutrinos at 0.6 AU. These periodic flavor modulations, far from trivial, may play a crucial role in shaping macrocosmic structures.

In the Standard Model of particles and interactions, neutrinos are Fermions created during the Electroweak interaction. Hence they are the physical residue of electroweak symmetry breaking at the boundary of the scalar- and electromagnetic fields. Even as neutrinos are classified as Fermions, they are part matter and part abstract, which explains their unique properties. While elementary particles are typically described through probabilistic quantum states, the term "abstract" in the case of neutrinos reflects their **triadic structure**, which can be interpreted as emerging from the scalar field's self-interaction. This novel geometric functionality underpins their oscillatory behavior and role in long-range coherence.

At present, the values of the mass-eigenstates as well as those of the neutrinos themselves are only very rough estimates. The standard symmetry breaking theorem, and in its wake the quartic interaction, rely heavily on fabricated, higher dimensional gauge theory and post hoc renormalization schemes. It not only fails to provide a framework for computing neutrino masses, but also to explain the latter's origin in the first place. Gauge theories inherently describe mass less bosons, with mass introduced through the Higgs mechanism. However, this does not apply to neutrinos who, precisely due to their close alliance with the scalar field, only possess left-handed chirality.

An alternative symmetry-breaking framework aligns with known physics while introducing natural scalar field constraints: (1) scale-invariance, (2) a double-cover feature, and (3) a $k \approx 0$ long-range mode. These constraints emerge from a **Phi (Golden Ratio)-scaled wave system**, with wave numbers $k_0$, $k_1$, $k_2$. (Bovenkamp, van den, 2020). The double-cover property, expressed geometrically through $k'_i = 2k_i$ resonances, stabilizes Fermionic spin in its final, gauge-invariant manifestation. Prior to the fully formed state, the precursor action is consolidated through a **principal** (formal) **bifurcation** of the scalar ground state. This bifurcation organizes the scalar field's coherence into distinct but complementary spherical components—radial and surface variations—that define an omni-directional ($S^2$) topology, akin to an acoustic pressure wave.

Subsequently, a physical (final) bifurcation arises, manifested as near-degenerate ground state phase variations that modulate the neutrino flavor wave's long-range coherence. Much like how light's polarization introduces additional degrees of freedom without altering the fundamental Planck-

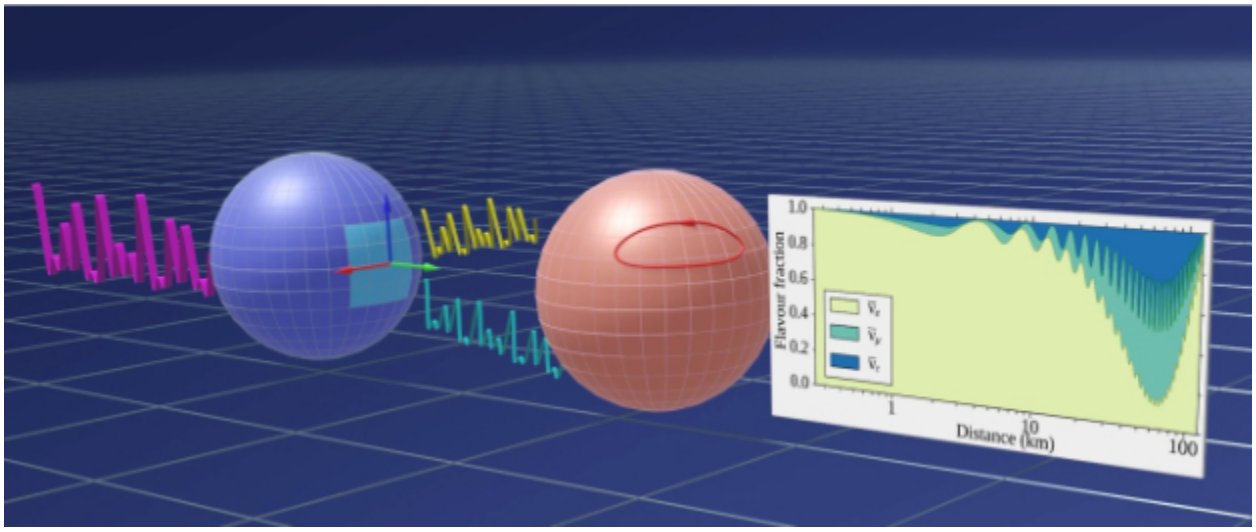



*Figure 7. Symmetry breaking depicted as a dual-staged bifurcation sequence, culminating in the long-range neutrino mass-eigenstate spectrum. In the principal bifurcation, the scalar field (left) transitions from a non-directional to an omni-directional, spherical state. In the subsequent physical bifurcation, polarization of the omni-directional field gives rise to distinct mass-eigenstates. Source "neutrino oscillations": en.wikipedia.org/wiki/Neutrino_oscillation.*

*Microvita's nuanced alignment with scalar field dynamics and neutrino physics points to an interdisciplinary frontier, one that respects Sarkar's vision while engaging the scientific community with testable predictions and observable phenomena.*

Einstein relation E=hf, this **polarization-like** variation in the neutrino system does not disrupt the precursor scalar action due to inherent phase redundancy. This ensures that the scalar action remains invariant across a scalar Poincaré sphere. Consequently, the flavor spectrum itself emerges as a polarization phenomenon, mapping the near-degenerate ground state phase variations onto the long-range oscillatory behavior of neutrino flavors while preserving the underlying constancy of the action.

Importantly, the robustness of the scalar bifurcation does not derive from its "spherical" geometry per se, but from the action's immutable dimensionality ([kg·m²/s]). This intrinsic property guarantees the scalar field's coherence and stability, enabling the interplay between formal and final bifurcations without compromising its foundational structure.

Within the scalar-centered symmetry-breaking framework, the absolute neutrino mass eigenstates can be accurately predicted. As illustrated in Figure 7, the transition progresses through a sequence: from the scalar field's nondirectional coherence to an omnidirectional (spherical) precursor spin topology, and finally to directional gauge interactions. This transformation involves the $SU(2)_L$ interaction, wherein the weak isospins ($T_1$, $T_2$, $T_3$) align with the spherical momentum dynamics of the scalar precursor action. The hypercharge (Y) serves as a coupling constant, bridging the scalar action to the emergent gauge realm. The Phi-based $k_i$ waves act as Goldstone modes in a geometric, self-stabilizing, overarching double-cover framework, underpinning both the scalar field's coherence and the directional interactions mediated by the $W^+$, $W^-$ and Z electroweak bosons.

The neutrino mass eigenstates thus emerge through bifurcation due to the scalar field's spherical ($S^2$) topology. Initially, the **principal bifurcation** predicts a symmetric doubling of phase dynamics, yielding $m_3 \sim 2m_1 \sim 2m_2$. This symmetry, however, shifts into the **physical bifurcation**, where $m_3 \sim m_1 + m_2$, as the system transitions to encode long-range coherence and flavor oscillations. Using standard experimental constraints on $\Delta m^2_{12} \sim 0.759\times10^{-4}eV^2$ and $\Delta m^2_{32} \sim 24.4\times10^{-4}eV^2$, the derived individual masses $m_1 \sim 0.029eV$, $m_2 \sim 0.030$ eV, and $m_3 \sim 0.058eV$, as well as the total sum $\Sigma m_i \sim 0.117$ eV, align remarkably well with cosmological bounds ($\Sigma m_i < 0.12$ eV). This dual-staged scalar bifurcation framework thus not only encodes and supports long-range flavor coherence but inherently quantifies the neutrino mass eigenstate spectrum, linking microphysical action to macrocosmic order.

At this juncture, neutrinos emerge from their portrayal as "quirky" particles into a far more profound role: a boundary manifestation of the scalar field. Physicists and non-physicists alike will appreciate how these elusive entities, poised at the intersection of matter and the abstract, help shape the structures of the universe across scales. Far from being merely elusive, neutrinos represent the scalar field in action, bridging the microphysical and the cosmic. Emitted from the scalar field's core dynamics, neutrinos traverse the universe, carrying the imprints of long-range coherence, while remaining intrinsically tied to their source. This dual role underscores their capacity to shape

macrocosmic structures and evolution. These profound implications will now briefly be explored through the lens of P.R. Sarkar's microvita theory.

P.R. Sarkar's concept of microvita describes subtle, dynamic entities that traverse the universe. Unlike particles or waves, microvita defy conventional categorization, existing at the boundary of the physical and metaphysical. They are not neutrinos, but their operational framework shares intriguing parallels. Like neutrinos, microvita are imperceptible to standard detection methods, yet their influence is profound, guiding structural and evolutionary processes ranging from the biochemical to macrocosmic scales. Sarkar proposed that microvita carry the blueprints of life and cosmic order, subtly steering creation cycles without typical physical interaction. Similarly, neutrinos, as proxies of the pervasive scalar field, exhibit long-range coherence and play a vital role in the formation of macrostructures. This conceptual alignment hints at a shared foundational principle between neutrinos and microvita, emphasizing their roles as carriers of subtle, transformative action.

While equating microvita to neutrinos would oversimplify both concepts, a deeper comparison between microvita and the neutrino mass eigenstates reveals intriguing possibilities. Sarkar's microvita, described as entities operating at the demarcation of matter and abstract, resonate conceptually with the neutrinos' mass eigenstates. Just as the scalar bifurcation generates the neutrinos' triadic mass structure, microvita, while considered spiritual or transcendental in nature, exhibit a similar **triadic functionality** with 'pro-matter,' 'pro-mind,' and 'neutral' influences. In this light, microvita could be seen as a higher-order conceptual framework intuitively encompassing the principles underlying neutrino physics, offering a bridge between the quantifiable and the experiential dimensions of life.

The concept of **bifurcation** is central not only to neutrino dynamics but also to Sarkar's discourse on the Four Chambers of the Universe, where it signifies a profound invariance in the face of differentiation. In neutrino physics, bifurcation ensures long-range mass eigenstates while preserving the total action. Sarkar similarly describes bifurcation in the (B) Subjective Chamber, stating that the *"subjective and objective retain equal value in strength during the phase of reduction."* While this could imply independent parity, it more likely suggests that their combined strength remains unitary—emphasizing the invariance of the underlying action principle. True to the spirit of "One-acting-as-two," in both frameworks bifurcation is not a division but a reorganization, preserving unity within multiplicity and ensuring stability through symmetry breaking.

The foundational ideas of Shrii P.R. Sarkar, particularly his assertion of Consciousness as fundamental, find striking resonance in the work of several Western thinkers. Cognitive scientist Donald D. Hoffman explores how the structures of perception veil deeper realities, proposing that Consciousness underpins the physical world rather than emerging from it (Hoffman, 2019). Similarly, philosopher Bernardo Kastrup advances the view that all existence is rooted in a single, universal field of experience (Kastrup, 2019)—an idea echoed in Rupert Spira's teaching that Consciousness is the sole reality, with all forms and phenomena arising within it (Spira, 2017). Eckhart Tolle, through his practical emphasis on presence and inner stillness, reminds us of Consciousness as the eternal

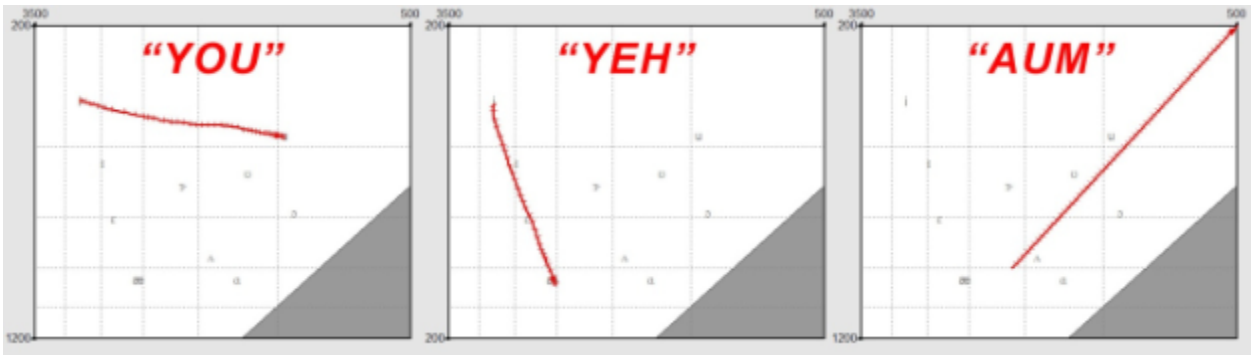
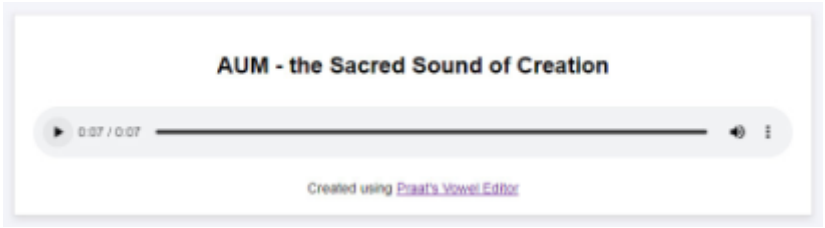



*Figure 8. The app "Praat" ("Speak"), developed by researchers at the University of Amsterdam, allows users to "draw" long vowels and hear them replayed live. The sound* ***"AUM"*** *can be accurately recreated by setting the formants to sweep from approximately* ***F1, F2*** *= 800, 1600 down to* ***F1, F2*** *= 200, 400 Hz. Note the consistent* ***1:2 ratio*** *of F1 to F2, reflecting the double-cover principle. You can download "Praat" here to* ***experiment interactively****: fon.hum.uva.nl/praat/manual/VowelEditor.html or listen to the recording.*




***"Aum Player"*** *– this links to frankvandenbovenkamp.com/aum-player/*

foundation of being (Tolle, 1997). These perspectives, while diverse in expression, converge on the notion of a unified entity as the source of all creation—a theme woven throughout this essay.

In closing, while microvita's role in Sarkar's cosmological framework—his **"Four Chambers of the Universe"**—provides a foundational perspective, advancing their scientific understanding requires bridging this metaphysical vision with contemporary physics and experimental rigor. Some interpretations, seeking to align microvita with abstract domains such as the "Cosmic Mind," risk both oversimplifying their scope and detaching them from the empirical methodologies needed to validate their significance. Instead, microvita's nuanced alignment with scalar field dynamics and neutrino physics points to an interdisciplinary frontier, one that respects Sarkar's vision while engaging the scientific community with testable predictions and observable phenomena. Developing a theoretical framework that honors both the philosophical depth and physical tangibility of microvita could unlock profound insights into the subtle forces shaping the cosmos, harmonizing metaphysics with modern science in a way that is both transformative and grounded.

## 6. Empirical Insights: Can We Find Evidence of the Svabhava?

The question now arises: can we demonstrate these concepts practically? In other words, is there empirical support for the metaphysical theory behind the sounds and colours of creation and their spherical ontology? The answer is yes. Although the "inner, qualitative structure" of sound and light relies on individual perception (which philosophers call "subjective"), the patterns themselves are objective.

Through practical, reproducible, and falsifiable experiments, we can gain a direct glimpse into the inner workings of creation. Follow the links to EXPERIMENT YOURSELF!

## EXPERIMENT #1: The "Physics of AUM": a new discovery in sound

In this experiment, we'll explore how the sacred sound AUM emerges from a unique acoustic phenomenon. In human speech, vowels are formed by two resonant frequencies, or formants. When these formants maintain a precise **1:2 ratio** and are "swept" downward through specific frequencies—say, from 1200 Hz and 2400 Hz down to 200 Hz and 400 Hz—the sound that emerges is unmistakably AUM. This 1:2 ratio reflects the double-cover symmetry found in quantum physics, echoing the doubling seen in the concept of spin, and, strictly speaking, in the **principal scalar bifurcation**. Through this structure, AUM reveals a harmonic form that is both mathematically and acoustically profound, connecting symmetry and resonance in a way that transcends physical measurement. This experiment allows us to experience AUM not only as a physical sound but as a harmonic expression of creation, offering a glimpse into the deeper principles Sarkar suggests underlie the universe.

## EXPERIMENT #2: The Geometric Origin of the Primary colours

While we typically view colour as merely a perceptual effect, recent insights suggest a deeper, structural origin. By examining the polarization of light, we have glimpsed an underlying principle that points to light's spin properties and the double-cover symmetry at the heart of its behavior. This symmetry doesn't merely describe interactions; it encodes a fundamental link to the origin of light and colour itself. In this experiment, we'll explore how primary colours emerge from **geometric interrelations** between Platonic forms, revealing that colour structure may not be arbitrary. The cube-octahedron arrangement, based on a **2:1 ratio**, represents light's structure in the external world, while the icosa-dodecahedron, rooted in the **Golden Ratio** (≈1.618), hints at the foundational fabric of creation, known as the **self-interacting scalar field**. This geometrical journey invites us to rethink colour as a manifestation of fundamental symmetries, bridging perceptual experience with universal principles.

This image series demonstrates the geometric alignments that accurately reproduce the primary colours. Here, the Tetrahedron is used to represent the cube-octahedron arrangement for clearer orientation. The images (on the following page) are live screen captures from [frankvandenbovenkamp.com/geocolour24/](frankvandenbovenkamp.com/geocolour24/), where you can experiment interactively. Click the menu in the app to explore additional backgrounds.

The connection between the theory of the Sounds and colours of Creation and microvita science is unmistakable, as P.R. Sarkar explains that microvita are carried by inferences—sensory waves and vibrations. He notes: "Inferences are the major waves, but sub-waves are created in them by moving microvita. The major waves function as the controlling waves for the sub-waves." These sub-waves, believed to form the hidden fabric of

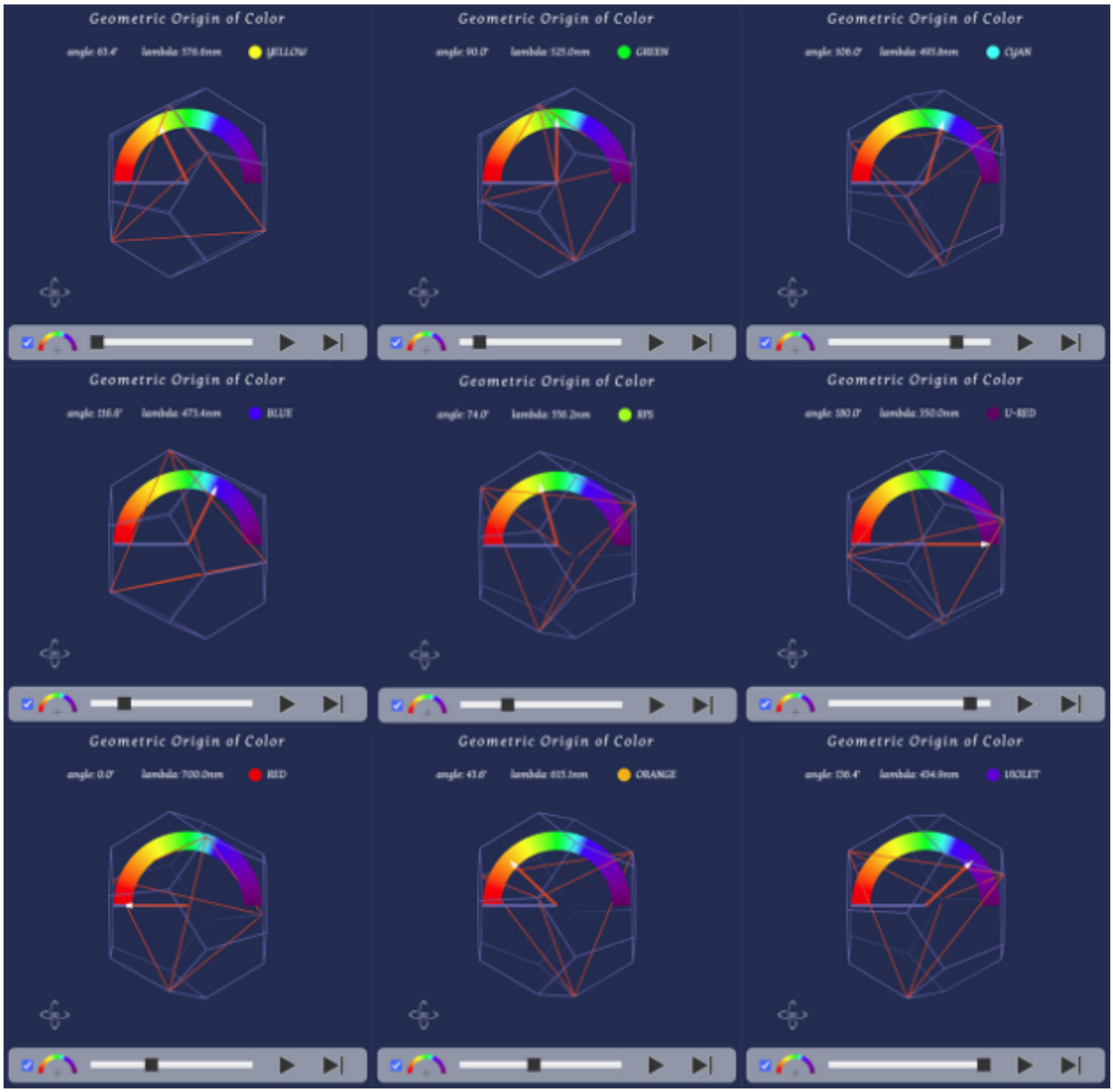



*Figure 9. The primary colours revealed through geometric alignments within the Platonic solids. In each image, the red arrow highlights a specific colour. Note especially the yellow-green hue in the center image, labeled "RPS" (***Retinal Peak Sensitivity***), which reflects the eye's natural peak sensitivity. Both the primary colours and the RPS result from the same underlying geometric*

creation, are represented in the colour theorem by the icosa-dodeca symmetry. While the major wave reflects external energy, the sub-waves embody the inner organizing principle—action, which remains superior to its effects, with the latter inferring the former.

## 7. Conclusion: A New Line of Thinking About Creation

Throughout this essay, we have explored the interplay between sound, light, and the deeper mechanisms of creation, weaving together insights from quantum physics, cosmology, and metaphysics.

The ideas remind us that science and philosophy are not isolated endeavors but complementary paths toward understanding the unity of creation.

Through experiments like recreating the sound of AUM or uncovering the geometric origins of primary colours, we can glimpse how these principles manifest in the tangible world, inviting us to engage both intellectually and experientially.

At the threshold of new scientific and metaphysical discoveries, the message is clear: the universe, in all its complexity and beauty, is a creation of the "One-acting-as-two," continually shaping, reshaping and evolving the fabric of reality.

This new line of thinking is not one of knowledge alone, but of personal engagement, and… a never ending sense of wonder.

## Notes

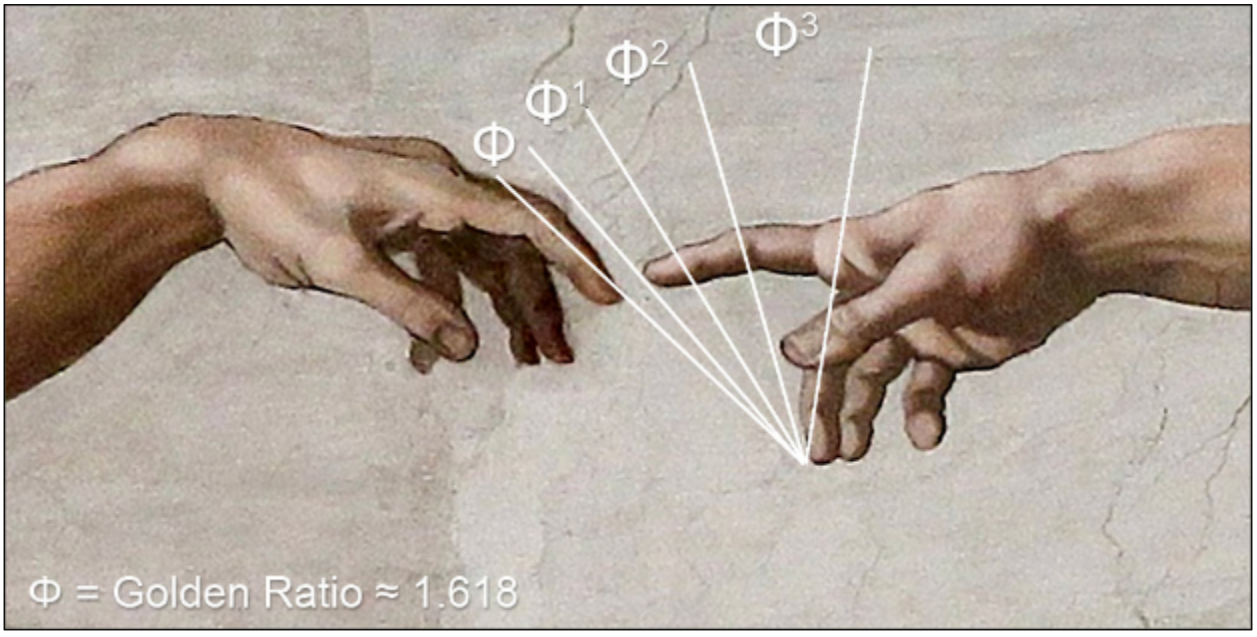
The physics concepts discussed follow their treatments in standard quantum mechanics literature, particularly the action principle, SU(2) symmetry, scalar field theory, gauge theory and the Poincaré sphere. The discussion on neutrino mass eigenstates and flavor oscillations is also grounded in established literature.

Interpretative nuances, such as the scalar field's bifurcation framework, represent this essay's unique philosophical contributions and extensions.

For further context and deeper exploration, see suggestions for reading in quantum field theory and related texts.

I would like to acknowledge ChatGPT 4o for providing editing assistance during the refinement of the manuscript. After utilizing this service, I thoroughly reviewed and edited the content as necessary, and assume full responsibility for the publication's content.

*The article with its complete references, a list of suggested further reading and a glossary is available at the journal web pages theneohumanist.com.*




**Epilogue: The Geometry of Creation**

*The hand of creation, as envisioned by Michelangelo, subtly reflects the universal geometry shaping all existence. From the Golden Ratio in art to the scalar self-interaction guiding cosmic evolution, this "meeting of hands" symbolizes the profound connection between consciousness, matter, and energy.*

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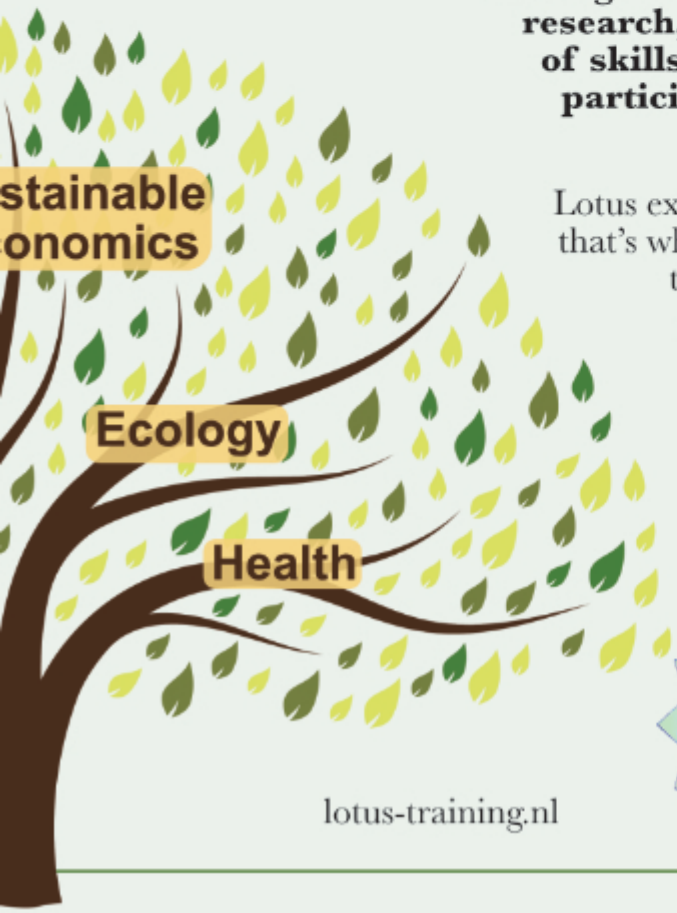


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# NEOHUMANIST Review

***Promoting Universal Spiritual Sentiment, Rational Thinking and Care for All Beings***

## NEOHUMANISM

Neohumanism emerged from the idea of extending human existential outlook and vision beyond the limitations of "humanity for the sake of humans". As such, neohumanism is a renaissance idea, the rebirth and rethinking of human being in an integrated three-fold world: physical, psychic and spiritual.

Moving on from earlier efforts, in 1982 renaissance thinker Shrii Prabhat Ranjan Sarkar formulated his philosophy of neohumanism. Shrii Sarkar's neohumanism is the spirit of humanism extended to all:

*"When the underlying spirit of humanism is extended to everything, animate and inanimate, in this universe—I have designated this as neohumanism. This neohumanism will elevate humanism to universalism, the cult of love for all created beings of this universe."*

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