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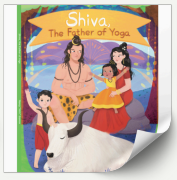

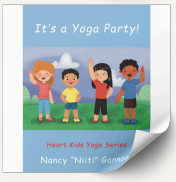

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MISSION STATEMENT

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.

From the Editor-In-Chief

We are happy to present the third issue of Neohumanist Review to our readers with quite a diversity. In this issue, authors from Mexico to Norway and from India to Birmingham have contributed neohumanist perspectives to complex problems plaguing our planet.

A young physician, Dr. Rodrigo Bazúa Lobato, provides us an overview of the health challenges facing global population, and a celebrated futurist, Dr. Sohail Inayatullah, offers us a novel perspective on health-futures. The object of the art of healing should be to cure the patients, both physically and mentally. The main question is not to uphold any particular school of medical science: rather, the key task is the welfare of the patient. We have to date not yet developed a comprehensive model of the human body which will show us the limits and efficacy of different healing modalities. The research must go on but the best way forward is to agree on a healthy lifestyle which would minimize the vulnerability to the onslaught of diseases.

Dr. Sid Jordan has delved into the nature of brain and how it regulates human behaviors. A case study in point is to review Prof Dr. Iain McGilchrist's ideas presented in a popular best-selling book from the neohumanist lens as enunciated by Shri P R Sarkar in his seminal works on neohumanism, biopsychology and related discourses.

Dr. Ediho Lokanga takes us into the world of new physics where atoms are intelligent entities that compute, process information, self-organize themselves and have consciousness. He calls for an interdisciplinary perspective and proposes a new approach that considers recent advances in theoretical physics, computer science, self-organization theory, and consciousness to develop a new physics theory.

Dr Avishek Ranjan provides us with a unique perspective on the sustainability of growth of Artificial Intelligence (or augmented intelligence using machine learnings) from the energy usage point of view. The dependency on machine learning and robotic consciousness, it appears, is irreversible.

Human beings must compensate through age-old methods like meditation to establish primacy of mind over matter and move closer to ensconsement in blissful consciousness—an inherent urge of all

living beings. There is in every living being a thirst for happiness which can only be filled by some lasting endeavour like Unison with Supreme Consciousness.

The essays by Ladli Prasad Bhargava and Shrii Shrii Anandamurtiiji give us a peep into the world of ideation and meditation.

Consumption and profit are two issues regularly scrutinised by the progressive-minded. Shriraksha Mohan takes a look at their further potentialities beyond throwaway, consumerist society, and finds hope in a new vision of what industrial society may be.

Edvard Mogstad, in a letter to the editors, revisits the issue of climate challenges by reminding us of the facts that correct the normal belief in causal connection between carbon dioxide emissions and global warming.

Whatever the cause, we definitely need to act to end the wars that destroy the environment and engage in greater drive to plant more and more trees to cool the atmosphere. We need an enlightened leadership at all levels and build a one universal human society where the existential and utility value of all creatures is well-respected.

Power and Medicine During Transitional Eras: Microvita As the Bridge

Dr. Sohail Inayatullah

Beginning with a genealogical gloss of the decline of Ayurvedic system in South Asian history, this essay moves to an alternative vision of the futures of health. It argues for a wholistic health model that includes global health cooperatives and integrates spirit with science. It uses Sarkar's theory of *microvita* as a conceptual framework to take placebo and nocebo seriously. While we imagine a rosy future, we are clear that the transition, as we are in now, will be associated with morbid symptoms and systems.

Keywords: *Macrohistory, P.R. Sarkar, Microvita, Health Futures, Health disruptions, Medicine*

Discontinuity and Macrohistory

Michel Foucault (1973) wrote on how particular eras suddenly end, and new regimes of knowledge emerge thereafter. He wished to understand the transition points – what changed to create a new episteme, a new way of seeing reality. These changes can be minor, for example, the role of an artist, a thinker or larger events, a pandemic, or a new technology. In the new era, there is a shift in how reality is perceived, and even the defining episteme. While Foucault did not develop a full-blown theory of macrohistory and the future, others have. Exemplary are Sarkar, Sorokin, and Toynbee (Galtung and Inayatullah, 1997). They offer us further insights into understanding transitions between eras. In the work of Shrii Prabhat Ranjan Sarkar (Inayatullah, 2002) generally these shifts occur when a way of seeing the world no longer has legitimacy. For him there are four core era/epistemes: the worker, the warrior, the intellectual and the capitalist (Sarkar, 1987b). Each has its own regime of knowledge: of what counts as reality and truth and what does not. Subjectivity is transformed based on the new episteme. For example, in the warrior, it is power and strength: victory whether in war or sports. Hierarchy, discipline, and the uniform reign supreme. However, in the Intellectual era reality changes. The volume of books and scholarship produced are telling. Diversity, the search for truth, and ideas that give life purpose became far more important. Why was there a shift? For Sarkar, this was an evolutionary shift. To expand empires, to gain land, warriors needed to move from numbers – bodies that could fight – to strategies, ideas that could lead to conceptual conquest. The transition to the capitalist era emerged as the intellectual era was unable to create and expand wealth – efficiency and production were needed to create the changing needs of workers, warriors, and

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intellectuals. New technologies and more efficient ways to accumulate wealth heralded the next era. In this new era, our current, wealth has become power, accumulation the be all of life. Power is maintained with lower costs. For Sorokin (1957) focused on the pendulum, the key indicator of the transition is when one system reaches the principal of limits, denying the reality of other systems. For him there are three types of reality leading to three types of civilizations: the sensate, focused on materialism; the Ideational, where the mind and the transcendental dominate; and the Idealistic, a both-and integrated system, where reality is seen as both material and spiritual. We know a transition is near when one system overwhelmingly dominates, and thus, reaching its natural limit, the pendulum forcibly swings back. For Sorokin we are at the end of the five-hundred-year materialistic Western dominated sensate system. What is unclear is will it swing back to an ideational system or is there the possibility of an integrated system ahead? Sorokin argues that for sure the next phase will be chaotic, in-between grand systems where ways of knowing are challenged, indeed, the epistemic basis for knowing is itself up for grabs.

The argument made in this essay is that we have the possibility of an integrated planetary system generally and in specific an integrated health system. But it is far from clear if this will occur. The macrohistorian Arnold Toynbee (1971) focused equally on agency and structure, suggests that it is the creative minority who make the tangible difference. They imagine the new emerging system and develop the framework for such a system. If they are unable to convince the old system to innovate – to meet the changing needs of stakeholders – then the system loses its vitality and becomes a large bureaucracy – class interests dominate – or an empire (instead of novel solutions power accumulation increases). While these grand thinkers wrote on planetary systems, their categories can be applied as well to health systems. As we imagine the futures of health, it is important to note that the meanings given to health systems too have historically changed (Badash, 2017; Radley, 1993).

Health Transition

Similar transitions, discontinuities have occurred in paradigms of health: what counts as medicine and who heals. Are we on the verge of another disruption? Before we outline possibilities of alternative futures, let us go back and gloss over historical disruptions, for example, asking why did the ancient Asian Ayurvedic system that focused on wholeness, on connection with nature, on body, mind, and spirit eventually give way to the Western, the allopathic. What happened? While in recent times one can argue it has been the rise of large health corporations (pharmaceuticals and vitamin companies) that is, profit and size, earlier Sarkar argues it was for one very simple reason: the fear of needles. Writes Sarkar (2011: 5)

> *Nowadays, in those cases where there is difficulty getting the desired effect by swallowing the medicine or ingesting it in some other way, or where the effect is delayed, the system of introducing the medicine into the body through injection is widely prevalent. If anything is injected into the body through a needle it is called* súcikábharańa. *Súcikábharańa existed in Ayurveda in ancient times to a small extent, but this science could not advance much in those days, chiefly due to the influence of certain superstitions among the people at that time. They did not want to allow anything into their bodies through injection, so this science remained unappreciated. Nowadays it is possible to save the patient's life with injections in the case of diseases that are difficult to cure or treat, or in the case of life-threatening disease. Thankfully, modern practitioners of Ayurveda and Homeopathy, willingly or unwillingly, have accepted the use of needles and themselves use them (bold added).*

Thus, the shift from Ayurveda to the Allopathic is partly explained by the fear of needles. There were however other factors as well. Sarkar argues that not just traditional medicine declined but the modernist aspects of Indian medicine too declined. They did so because of the hierarchy of caste. The study of dead bodies… "learning about the physical structure of the skeleton of the dead body" was seen as undesirable, as "lowly." Argues Sarkar: "This affected medical science. Surgery, especially, was much affected and because of this, all medical science was affected." (Sarkar, 2011: 8)

> *Essentially, the nocebo effect means if a patient is worried about a treatment regime, poor results are likely. If you emphasise negative side-effects, you're more likely to get them. This works because of the power of the brain/mind to imagine reality.*

While Sarkar is thankful that today's complementary medicine practitioners include needles and western medicine, imagine a world, a future where they did not. We are already witnessing weak signals of this amongst some communities - in the Western world amongst the spiritual and the white evangelical communities, argues Evans (2021)- where the benefits of modern medicine are rejected. Whether this is a full-scale Sorokin pendulum swing, from the scientific to the traditional, remains to be seen. For Sarkar, while true progress is spiritual – beyond the physical and the mental – in the material world, it is science that is defining, "science is indispensable for human progress." (Sarkar, 2018: 71). He writes: "Those who criticize science in reality want to turn the onward current of the Ganges backwards towards its source. This totally contradicts the principles of dynamics. Such an endeavour betrays a negative mentality." (Sarkar, 2018: 69) In particular, "Medical science has helped people immensely in the past, continues to help them in the present and will continue to help them in the future. Medical and surgical developments have helped people to increase their longevity in the past and likewise continue to do so today." (Sarkar, 2018: 72) Indeed, Sarkar asserts that the inventor of penicillin (and other technologies such as the airplane) should be seen as *rsis* (saints, sages) (Sarkar, 2021) – the glittering personalities of history. Of course, for Sarkar, this is the context of civilization i.e., purpose, inclusion, ethics – the greater good – leading the scientific process and not short-term profits and gains. The latter must lead the former or there is cultural decline.

Imagine A Better Future

Imagine a different future (Sangchai, 1974). Ayurveda and other traditions do not succumb to superstition and instead innovate, the integrate. They use needles to deliver medicine i.e., vaccinations are part of the arsenal of medicines that can be used. As one naturopath leader said (Perry, 2021): "Naturopathic medicine blends centuries old holistic healing with evidence-based medicine. We walk the line between conventional and holistic medicine and use the best of both worlds. I trust science, and vaccines have saved humanity from some horrific diseases." She is suggesting as Sarkar has argued to take a synthetic approach, that is, both/and instead of typical either/or dogmatic approach. The key for Sarkar is to ensure that the patient is first. He writes: "The object of the healing art is to cure a patient, both physically and mentally. So, the main question is not to uphold any particular school of medical science; rather, the key task is the welfare of the patient." (Sarkar, 2011: 5).

But how do we know? This becomes the greater debate. Dada Dr. Shambhushivananda, the Chancellor of Sarkar's Gurukul's Educational system has asserted that while Gurukul used different health systems – allopathic, naturopathic, homeopathic, ayurvedic – it is the allopathic that is the controlling faculty (Personal email, 31 August, 2021). What this means is that evidence as defined within scientific parameters – repeatable, double-blind, studies demonstrate causation – is required.

Of course, and this is critical, the nature of scientific evidence will change, the role of placebo/emotions/mind states, and imagination will re-enter medicine. Currently, the scientist must show disinterest, that is not influence the result of the experiment. However, Sarkar has argued repeatedly that along with medical discoveries, in the future the consciousness of the medical scientist – their compassion, their care, their ability to connect, the time spent with the patient – needs to be included in future science. This he controversially argues will attract positive microvita and thus enhance the possibility of the patient being cured. While Sarkar argues that microvita are to some extent like viruses, generally they exist between conception and perception (Sarkar, 1987), one can situate this approach in different discourses. In the first discourse, the ancient, they are mystical non-material forces. In the second, the medical, they are like subtle viruses. In the third, the postmodern, they are carriers of information, of memes (Inayatullah, 2000). In the fourth, chaos theory, they are strange attractors, helping a vision become realized. And in the fifth, science fiction, they exist as a future

"Sarkar offers us ways out seeing reality at many layers: as a body, mind, layers of mind, and pure consciousness. It is a both/and approach, using modern medicine and goes deeper toward other modalities, goes inwards."

possibility, of an alternative science. And thus, microvita as a theory of medicine is still far off. Sorokin's pendulum of epistemes may shift but certainly not in the foreseeable future. However, attempts by Rupert Sheldrake (2005, 2020), Erwin Laszlo (1987, 2009), Harmon (1988), Swimme (2019) to move toward field – non-material - interpretations of reality and evolution – what Lazslo calls intensive evolution – all suggest that a shift may be possible.

We do not yet know how to re-integrate imagination and emotion without blaming the patient nor allowing dogma to re-enter science. As Dada Shambhushivananda argues, "we have yet to develop a comprehensive model of the human body (layers of the mind) that shows the limits and efficacy of different healing traditions." (Personal email, 28 September, 2021). Yet we can imagine in the medium term a different type of planetary health system that is far more effective than the current. In this future, we make the slow transition from mind in technology (AI) eventually to consciousness in technology (the microvita hypothesis).

Aspects Of the New Future

What would that world look like?

First, it would be inclusive of all healing modalities. It would be a multi-door health centre. But who greets one at the entry point? In this vision, it is the medical scientist using evidence-base practices who is our guide. In this sense, it would champion the 5p model of health. This approach is: prevention based, personalized (the patient is at the centre), precision (using the continued and stunning advancements in genomics and artificial intelligence), partnership (working with all aspects of the health system) and participatory (working with the patient and other stakeholders in the health eco—system) (Hood, 2013). Writes Hood: "We will be able to optimize the health trajectory of each individual through assessments of the genome and longitudinal phenome and interrogating the vast knowledge graphs that soon will encompass the entirety of our biomedical knowledge. The output of the individual is customized and concrete, and it offers actable possibilities to influence the health trajectory in a desired way." (Hood, 2021).

Thus, second, the scientific method would be used to determine efficacy, safety, second order impacts with a full understanding that science itself will undergo paradigm changes as deeper layers of the mind become better understood.

Third, vaccines would be used and continue to save hundreds of millions if not billions of lives. There would be, as with a global right to food, shelter, education, and clothing, a global right to vaccination, to health. Vaccines must be treated as

global public goods. If indeed we are entering the Age of Pandemics, we need to be ready.

Fourth, the social, political, and gendered causes of illness would be addressed. These include, for example, in the case of zoonotic diseases the creation of wildlife buffer zones between humans and nature, as epidemiologist Peter Black argues (2015: 137-142). Given that more diseases are likely to become prevalent from climate change, it would mean moving toward plant-based diets as much as possible so that climate change is mitigated. Plant-based diets we know also reduce the worse of COVID-19 symptoms (Kim, 2021).

This would also mean, given the rise of non-communicable diseases, a move toward redesigning cities so individuals could walk more, linking the insight that design enhances health (Inayatullah, 2011). It would mean moving away from fossil fuels so pollutants would decrease. It would mean rethinking the working week so that individuals could exercise more and spend time with community: family and friends. Society would thus move from GDP as defining progress to Wellbeing as defining (Inayatullah and Milojević, 2021). Ultimately this would be a shift from a single bottom line to a quadruple bottom line: prosperity (increased standard of living for all), purpose (spirit and service), planet (nature, first), and people (inclusion) (Inayatullah, 2018).

Thus, the goal in this future is to design health systems that benefit all. This is a far more robust approach than efforts that promote individual changes, in that the social and environmental determinants of health are taken seriously. Writes one person with disability, "Providing 'natural', anti-science health advice to the masses is especially dangerous in a pandemic, but also propagates the ableist belief that if disabled and chronically ill people tried harder, they would be 'fixed'". Such people are already disproportionately affected by the pandemic. Please don't make it worse by encouraging people to play roulette against a deadly virus (Griffen, 2021). Initial data in the UK suggests that 60% of the deaths from COVID-19 have occurred to those with a disability (BBC, 2021).

Fifth, hospitals would need to be transformed. They would need to be designed for wellness and indeed, as much as possible, public health measures would exist to ensure that prevention was first – a fence at the top of the hill instead of an ambulance at the bottom. Design would first ensure hospitals were far more culturally safe places for the indigenous, for example, and second, homes themselves would become healing places (Milojević and Inayatullah, 2018). A hospital in Hawaii, for example, has changed its mission statement to reflect this awareness, moving their tagline to "Together inspired – speaking out, coming together with community, and the power that connection will have to move our neighbours toward a healthier life." (Email, Mele Fernandez, 1 October, 2021) Ultimately, as much as possible, the goal would be to move the data and not the patient, to fully use digital health technologies.

Sixth, and this is critical. The nature of pharmaceutical companies would change. Following Sarkar's PROUT model, (1987a) they would be run like large public sector organizations i.e., global platform cooperatives run and managed by medical scientists.

Seventh, in the very long run vaccines would be energized with microvita. While the science is not yet formulated, we can imagine a future where medicine is vibrated with sacred sound, with subtle emotions working at the viral level. Writes Sarkar (1987:51), "There will be revolutionary changes in the fields of pharma-chemistry and biotechnology. A particular object has its particular medicinal value… Intensive pharmaco-chemistry research will reveal the amount of microvita required to produce particular kinds of medical effects, and accordingly a scientist will be able to evolve accurate and effective formulae for various medicines. Naturally, the old and outdated formulae will be discarded. Hence, pharmaco-chemistry is sure to be affected. It is often found that the same medicine produced by different companies has varying effectiveness. The medicine produced by one company is found to be more effective than the one produced by another company. Here also variations in the number and classification of microvita account for such differences."

The Long-term

What Sarkar is hinting at – in the longer-term future – is personalized and precision medicine designed for the individual. Thus, vaccines and other medicine will be targeted, thereby reducing the side effects suffered by many. Writes Vokenberg a decade ago (2010: 560): "Personalized medicine (PM) has the potential to tailor therapy with the best response and highest safety margin to ensure better patient care. By enabling each patient to receive earlier diagnoses, risk assessments, and optimal treatments, PM holds promise for improving health care while also lowering costs." We are moving toward personalized medicine for patients designed by local, national, and global health systems working with manufacturers. However, while the vision remains, it is still to be realized, and certainly does not go far enough toward the microvita medicine revolution.

Certainly, microvita medicine is outside of today's dominant scientific paradigm. One way to make it intelligible, how I understand it, is to see it as

> *The crisis consists precisely in the fact that the old is dying and the new cannot be born; in this interregnum a great variety of morbid symptoms appear.*

activating the placebo response. This entails seeing placebo not as false but as an active ingredient in health (and nocebo in illness). With placebo, the receiver activates his/her brain/mind to help create the best possible reactions from the intervention. The person expects healing. This can occur through contact with a medical professional where they feel listened to, heard, connected with and as well when the emotional belief system is active. Ted Kaptchuk, head of Harvard's Medical School Program in Placebo Studies and the Therapeutic Encounter, argues that the "placebo effect is a result of the complex conscious and nonconscious processes embedded in the practitioner-patient relationship." (Greenberg, 2018) Others seeking to explain non-material phenomena include the biologist Rupert Sheldrake (2005, 2020), though he takes a field approach instead of Sarkar's viral-layered approach.

Microvita, however, can be positive and negative. In the medical world, the approximation of this is nocebo. "Essentially, the nocebo effect means if a patient is worried about a treatment regime, poor results are likely. If you emphasise negative side-effects, you're more likely to get them." (The University of Sydney News, 2019.) This works because of the power of the brain/mind to imagine reality. Argues John Kelly, the deputy director of the Harvard Medical School's Program in Placebo Studies and Therapeutic Encounter (Govender, N.D.): "It's the power of the imagination. If you ask someone to imagine a visual scene in their minds, you can see on an MRI that their occipital lobes – the parts of their brains involved with vision – are activated. If you tell people to imagine doing some physical activity, you'll see the motor cortex showing activation. Just *imagining* something is happening is enough to activate those portions of the brain associated with that thought, or worry, or pain."

How we frame the issue thus becomes critical. Communicative strategies are critical in connecting with patients to enhance the possibility of well-being. As Dr. Ben Colagiuri suggests: "instead of saying you have a 30 percent chance of getting nausea from this treatment, you say there's a 70 percent chance of *not* experiencing nausea. In our trials, the second approach results in fewer side effects." The goal is to use placebo to enhance wellbeing and ensure anxiety and fear are not enhanced through the nocebo effect.

Holistic Depth, Self and Other

In the ancient era, reality was tribal, and magical (the worker and warrior eras). Purity was foundational – other races, tribes, were dangerous. Herbs from nature were seen as the most important aspects of healing. The modern era removed nature as well as captured nature – used it for medicine – and technological driven medical systems became dominant (the intellectual and the capitalist). This has led to dramatic increases in health as access to health, antibiotics, and vaccinations as well as sanitation have become critical. And as we well know, culture can be left behind in this transition - the hospital can become cold, the surgeon can lose his humanity as technological fixes dominate. The views of the patient are not listened to. Instead of a system shift, we search for the silver medical bullet. This especially becomes an issue in transitional periods when new paradigms emerge and there is a loss of trust in old systems.

Sarkar offers us ways out seeing reality at many layers: as a body, mind, layers of mind, and pure consciousness. It is a both/and approach, using modern medicine and goes deeper toward other modalities, goes inwards. This is all about ensuring inclusion (Mylan, 2021), that all have the right to health, education, shelter, and education. In this transition to the Age of Microvita – the radical inclusion of neohumanism (Sarkar, 1987c) – both the purity of the tribalists and siloed world of the modernists are challenged, as the new world emerges. Yet as Sarkar has warned over and over, this transition will lead to greater polarization (1986: 44) best expressed by the words of Gramsci (1971): "The crisis consists precisely in the fact that the old is dying and the new cannot be born; in this interregnum a great variety of morbid symptoms appear."

The article, complete with all its references, is published on theneohumanist.com

The Human Right to Health

Dr. Rodrigo Bazúa Lobato

1. Introduction

Health systems are at a global crossroads due to significant demographic, epidemiologic, climatic, and technological changes. On the demographic front, the world's population has doubled over the past 50 years and is expected to double again by 2050 in some regions (World Bank, 2018). The globe has also experienced a continuous decrease in fertility rates and an increase in life expectancy, leading to an older global population (World Bank, 2022).

Epidemiologically, the leading causes of disease and mortality have dramatically changed. In 1990, 34% of global deaths were caused by communicable, maternal, neonatal, and nutritional diseases, which primarily affect children and pregnant women, while 56% were due to non-communicable diseases affecting mainly adults and older individuals. In contrast, by 2019, deaths from communicable, maternal, neonatal, and nutritional diseases had decreased to 18%, while deaths caused by non-communicable diseases had risen to 74% of total deaths (Global Burden of Disease Collaborative Network, 2020). Figure 1 illustrates the demographic transition.

Simultaneously, climate change is dramatically changing weather patterns and accelerating local and international migration by generating extreme weather events, including floods, heat waves, droughts, wildfires, and intensifying water stress (Prange, 2022), which by 2050 could force 216 million people to migrate within their countries (World Bank, 2021) To put it in perspective, of the 46.9 million people internally displaced in 2023, 56% were driven to migrate due to natural disasters linked to climate change (Internal Displacement Monitoring Centre, 2024).

Furthermore, a dramatically accelerating technological change, particularly related to digital technologies, including increasing internet accessibility, social media penetration, robotics, and artificial intelligence capabilities, is quickly changing how we live and interact with each other and our environments. This technological revolution is both generating new health challenges and creating new possibilities to address major health needs (Valkenburg, Meier, & Beyens, 2022; Alowais et al., 2023).

Along with the major demographic, epidemiologic, climatic, and technological changes mentioned above, over the last centuries, the world has experienced a major shift in how societies respond to the health needs of individuals through policies and institutions, which, for most of history, had been limited to the household and carried out by the family nucleus. In 1883, Bismarck instituted the first social security health insurance scheme for guild workers in Germany, framing healthcare as a right for workers to keep them healthy and productive, and as an instrument to prevent strikes. In 1948, Beveridge established the National Health Service in Britain, representing the first health institution covering the whole population of a country through general taxation, focused on solidarity, social cohesion, and universality (Delnoij, 2013).

In addition to country-specific organized social responses to the health needs of the collectivity, the world saw the birth of a new way of conceptualizing and institutionalizing the inherent value of human life and the human right to health, first articulated in the 1946 Constitution of the World Health Organization (WHO), and reaffirmed in 1948 with the Universal Declaration of Human Rights, adopted in the aftermath of the Second World War (WHO, 1946; United Nations, 1949).

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The aspiration of the human right to "the enjoyment of the highest attainable standard of physical and mental health [...] without distinction of race, religion, political belief, economic or social condition" (WHO, 1946) is still far from being realized. To continue the progress towards attaining the right to health for all in a rapidly changing global landscape requires creating policies and institutions that operationalize the inherent value of every life.

The remainder of this article first provides an overview of the unequal global distribution of the burden of disease and the resources to address it. It is followed by a review of the long struggle for health equity. The third section briefly presents the progress made towards achieving the right to health for all. The article ends with an exploration of how the long walk to achieving the right to health could be continued by expanding the ideals of humanism with neohumanism.

2. The Unequal Distribution of the Global Burden of Disease and of the Resources to Address It

The global distribution of disease follows patterns of geographic and social clustering of morbidity and mortality related to ecologic, economic, social, and political factors, among others. The life expectancy of a child born in 2021 in Japan, Liechtenstein, Switzerland, and South Korea was 84 years, while a child born in Chad, Nigeria, and Lesotho had a life expectancy of 53 years (World Bank, 2021). These disparities are also observed within countries and smaller geographical units. For example, at the local level, in the city of Boston, in the United States, life expectancy in the affluent neighborhood of Back Bay is nearly 92 years, while it decreases by 23 years in the poorer neighborhood of Roxbury, with a life expectancy of 69 years (Boston Public Health Commission, 2023).

This disparity in life expectancy is primarily driven by a higher burden of disease in poorer countries and localities, coupled with limited resources to address it. The overall burden of disease worldwide is highest in low- and middle-income countries (LMICs), which have the least resources for healthcare. While 77% of global deaths due to non-communicable diseases occur in low- and middle-income countries (WHO, 2022), LMICs spent in 2019 between $34 and $551 USD per capita on healthcare, a minimal amount compared to the $5,635 USD spent per capita on healthcare in high-income countries in that same year (World Bank, 2022). Figure 2 shows the total burden of disease by country in 2019, measured in total disability-

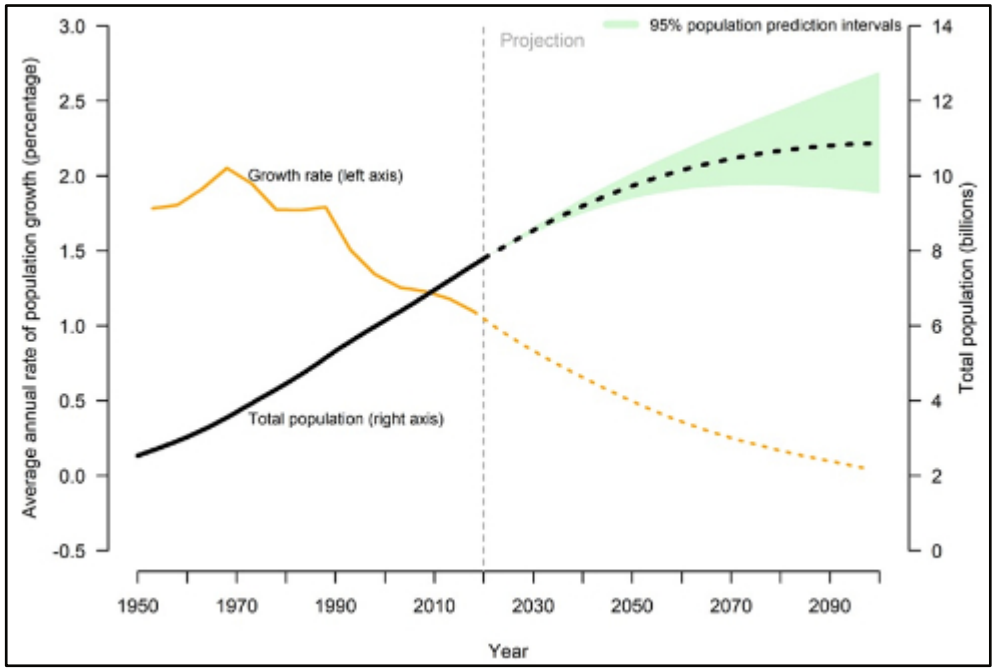


Figure 1. Global population growth rate and total population projections, 1950 – 2100. (Reproduced from United Nations, 2019).

adjusted life years (DALYs) from all causes per 100,000 individuals. One DALY represents the loss of the equivalent of one year of full health, either due to years of life lost due to premature mortality (YLLs) and years of healthy life lost due to disability (YLDs) due to prevalent cases of the disease or health condition in a population (WHO, n.d.).

Although it is outside the scope of this article to explore the historical forces that have shaped the aforementioned global inequalities, it will be only mentioned here that the inequalities observed have been significantly shaped by slavery, colonialism, resource extraction, and other different forms of oppression, which selectively benefitted a few and profoundly disenfranchised large part of the global population, among other factors (Mukherjee, 2021).

3. The Long Path to Health as a Human Right

As was mentioned in the introduction, for most of history, responding to the health needs of individuals in a community or a society had not been a collectively organized endeavor but rather limited to the household and carried out by the family nucleus. The first recorded collective responses to disease were focused on prevention efforts related to the provision of clean water, sanitation, and the management of "pestilential" diseases, such as the Roman aqueducts and the implementation of "quarantines" or isolation of individuals suffering from what would be considered infectious diseases nowadays (Porter, 2005). However, some of the first documented organized collective responses to treating disease for "others" can be found during the expansion of European empires and colonialism, as health was a priority of European imperial endeavors in the New World, Africa, and Asia (Rose, 2001).

Colonial medicine was first developed to support colonial military endeavors and then expanded to protect the health of the laboring populations required for large plantations and mines to operate. For example, Britain established a Colonial Medical Service, with clinics in particular areas of the empire, recruiting physicians trained in England to work in the colonies. The facilities offered curative medicine, public health campaigns, and collected data regarding epidemics (Crozier, 2007). European colonial health efforts were both directed at treating disease and at "implanting" disease. For instance, British officials were documented distributing blankets intentionally infected with smallpox to American indigenous people as late as 1763 (Jones, 2004).

Alongside the expansion of colonial empires worldwide, effective drugs for previously incurable diseases and microorganisms as causative disease agents were discovered, extending medicine's capabilities, such as the advent of quinine as an effective treatment for malaria, which allowed European colonialists to expand their colonization of the tropics further. With these developments, by the end of the 19th century, western medicine had been split into "tropical medicine," which focused on specific diseases found in tropical latitudes, many transmitted by vectors, and "cosmopolitan medicine," which addressed diseases that mostly occurred in Europe or anywhere in the world, like tuberculosis (Worboys, 1976).

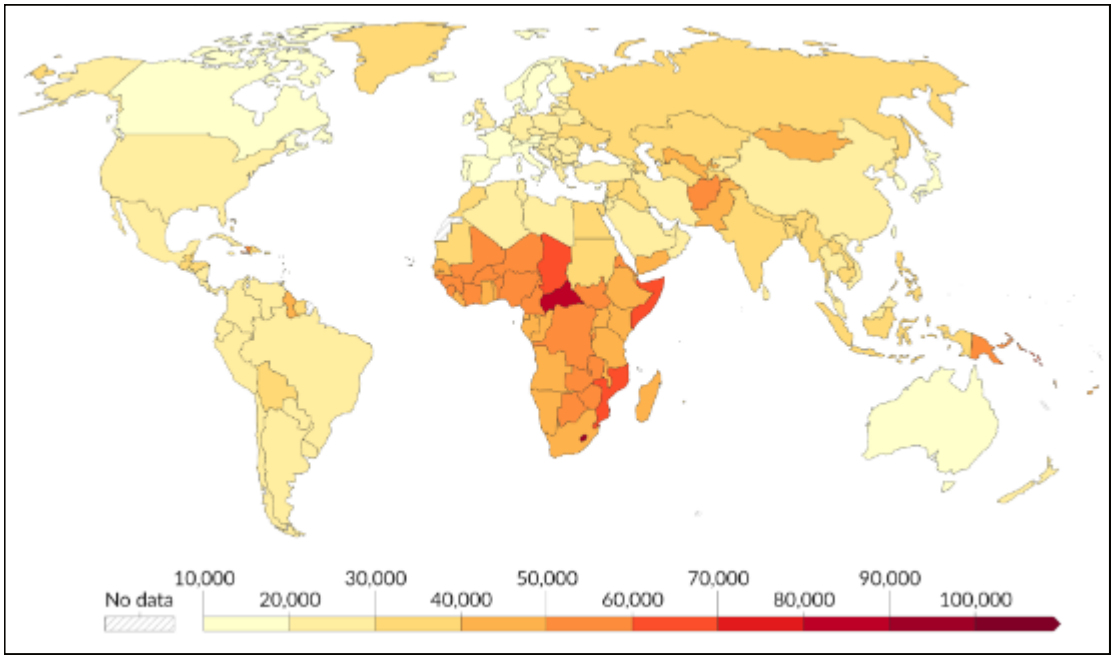


Figure 2. Burden of Disease per 100,000 individuals by country. (Reproduced from OurWorldInData.org, 2019 with Data from IHME, 2019.)

Colonial, tropical, and cosmopolitan medicine were not the only healthcare models during the colonial period. Missionary medicine, in contrast to colonial medicine's economic incentive, was primarily provided on moral grounds. Missionaries focused on Western culture, hygiene, early biomedicine, and Christianity as a solution to illness and a pathway to salvation (Farmer et al., 2013).

During the 18th and 19th centuries, with the beginning of the fragmentation of European empires, the independence of previous colonies, and the rise of the United States as a global power, came a significant increase in international maritime trade. These developments incentivized collaboration between countries to exchange epidemiological information. In the Americas, the main concerns were the arrival of yellow fever, cholera, and the bubonic plague through ports. As a result, the first international organization focused on health and inter-country collaboration for preventing disease was born in 1902, the Pan American Sanitary Bureau, which later became the Pan American Health Organization (Cueto, 2006).

At the international level, only in the aftermath of the Second World War did collective efforts to protect human health globally shift from primarily economic concerns, such as allowing safe international trade by controlling the spread of infectious diseases through epidemiologic intelligence. In 1948, the Universal Declaration of Human Rights (UDHR) was adopted as an aspirational but not legally binding document to prevent the events of the Second World War from occurring again. It underlined that all human rights are interdependent and that they cannot be hierarchically ordered.

One year later, legally binding documents on human rights were drafted for all United Nations member states to adopt formally. Still, the two predominant world powers, the United States and the Soviet Union, could not agree on a single document. While the United States favored rights such as freedom of expression and association, the Soviet Union claimed that the right to education and health were more important than those favored by the United States.

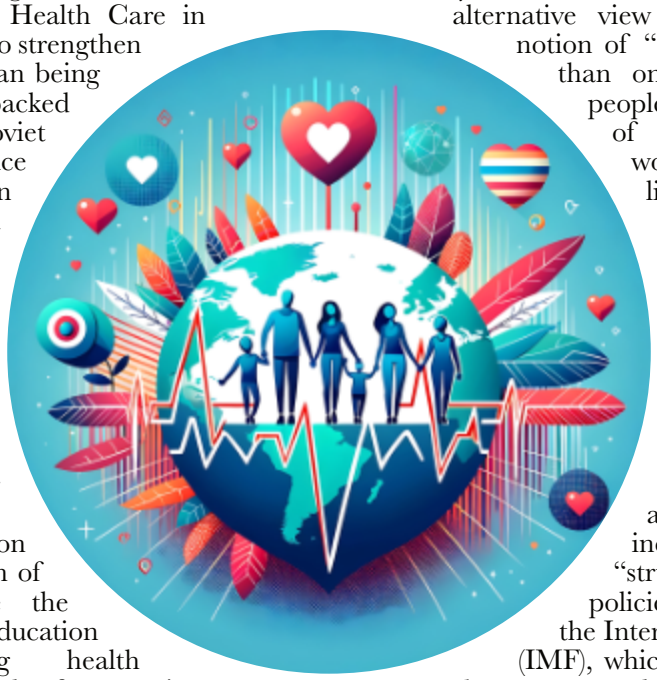
Consequently, the formalization of legally binding documents on human rights was postponed until 1966, when two legally binding treaties on human rights were signed. These treaties divided the UDHR into two covenants: the International Covenant on Civil and Political Rights (ICCPR) and the International Covenant on Economic, Social, and Cultural Rights (ICESCR), the first one endorsed by the United States and the second one endorsed by the Soviet Union. The Soviet Union

signed and ratified the ICCPR years later (United Nations, 1966), while the United States has not ratified the ICESCR to this day (Piccard, 2010).

The countries aligned with or under the influence of the United States signed the ICCPR, and those aligned with or under the influence of the Soviet Union signed the ICESCR. The human right to health was only found in the ICESCR in its article 12, which defines it as the enjoyment of the highest attainable standard of physical and mental health (ICESCR, 1966).

4. The Right to Health: From Paper to Practice

In 1978, the WHO organized an international conference on Primary Health Care in Alma-Ata, Kazakhstan, to strengthen the idea that every human being deserves health access, backed primarily by the Soviet Union. The conference produced the Declaration of Alta-Ata, which stated the commitment of the 134 signing countries, including the United States and the Soviet Union, to bring primary health care to everyone under the slogan "health for all by the year 2000" (Farmer et al., 2013).



The Declaration included in the definition of Primary Health Care the following elements: "education concerning prevailing health problems and the methods of preventing and controlling them; promotion of food supply and proper nutrition; an adequate supply of safe water and basic sanitation; maternal and child health care, including family planning; immunization against the major infectious diseases; prevention and control of locally endemic diseases; appropriate treatment of common diseases and injuries; and provision of essential drugs" (WHO, 1978a).

Even though several countries made progress in bringing access to health care, the progress expected by 2000 was not achieved. One major factor for the nonsuccess of the Declaration was that it did not specify the financial mechanisms to pay for primary health care and its scale-up worldwide. Only one paragraph of its 80 pages discussed financing as follows: "The affluent countries would do well to substantially increase the transfer of funds to the developing countries for primary health care" (WHO, 1978b).

Another factor hindering the success of the Declaration of Alma-Ata was a parallel effort led by the Rockefeller Foundation. The Rockefeller Foundation organized a global Conference in Bellagio, Italy, months after the Alma-Ata Conference, to discuss the impact of population growth on health. However, the product of this conference was an alternative plan to improve health worldwide, which contrasted with the goal of "primary health care for all by the year 2000." The Bellagio conference championed the concept of Selective Primary Care, which offered an alternative to the comprehensive view of Primary Health Care offered by the Declaration of Alma-Ata. This alternative view focused more on the notion of "cost-effectiveness" rather than on the overall needs of people, identifying a package of discrete services that would offer high returns in lives saved per dollar spent (Farmer et al., 2013).

A third factor halting the progress toward health for all was the rise of economic neoliberalism worldwide during the 1980s, coupled with an international debt crisis. Developing countries across the globe were incentivized to conduct "structural adjustment" policies by the World Bank and the International Monetary Fund (IMF), which dramatically increased the amount and magnitude of loans they provided to developing countries, with the condition of adhering to specific economic policies and government structures, which emphasized market-oriented policy reforms and a diminished role for the state as a provider of services, such as healthcare (Farmer et al., 2013).

With these reforms, health care was defined as a commodity, not a right, which should be allocated by the market, favoring Selective Primary Care for the impoverished and underserved. The impact of the structural adjustment policies on healthcare was most severely suffered by the poor in developing countries. For instance, researcher David Struckler, King & Basu (2008) estimated that participating in a structural adjustment program was associated with an 8% decrease in government spending as a percentage of gross domestic product, a 7% drop in the number of physicians per capita, and a 42% drop in the percentage of the population covered by

P.R. Sarkar's neohumanism describes two main sentiments that underlie the significant gap between countries and between socioeconomic and ethnic groups in terms of wealth and health: socio-sentiment and geo-sentiment.

directly observed therapy for tuberculosis control (Struckler, King & Basu, 2008).

A new momentum for the right to health came with the turn of the century when, in September 2000, the United Nations presented the Millennium Development Goals (MDGs). The MDGs were a list of eight goals for member states and development partners to achieve by 2015. Four of these goals were partially or directly related to health: the eradication of extreme poverty and hunger, reduction of child mortality, improvement of maternal health, and combating HIV/AIDS, malaria, and other diseases. MDGs brought an unprecedented mobilization of resources globally, fueling a 66% increase in official development assistance between 2000 and 2014. The goals also informed global health priorities and incentivized the formation in 2002 of the Global Fund to Fight Aids, Tuberculosis and Malaria. With the MDGs, from 1990 to 2015, the prevalence of undernourishment in children went from 23% to 13%, child mortality fell by 53% and maternal mortality by 43%, and the targets for HIV, TB, and malaria were met (WHO, 2015).

Even though the MDGs generated significant momentum towards improved health for all, they fell short of recognizing that progress towards the right to health must be broader than focusing on a limited set of health needs and conditions. With this in mind, with the arrival of the MDGs target time (2015), the United Nations adopted a revised development agenda, which included 17 Sustainable Development Goals (SDGs) to be achieved by 2030 (WHO, 2015).

In the SDGs, there was only one health goal (goal number three), which was deliberately framed with a much broader approach than the health goals of the MDGs: Ensure healthy lives and promote well-being for all at all ages. This SDG also included specific targets, one of which is Universal Health Coverage, exemplifying the need to extend health care for all from basic, cost-effective interventions to consider the broad spectrum of health needs that generate a substantial amount of the burden of disease (WHO, 2015).

Universal health coverage seeks to ensure that every person has access to the quality health services they need, when and where they need them, including during emergencies, without risk of financial hardship. Furthermore, according to the WHO, UHC involves the entire continuum of care, including health promotion, prevention, treatment, rehabilitation, and palliative care (WHO, 2023).

Even though UHC is a much more comprehensive aspiration to address human health needs, progress towards achieving it has been limited, particularly since 2015. According to the WHO, improvements to health services coverage have stagnated since 2015, the proportion of the population that faced catastrophic health expenditures has increased since 2000 across all regions and the majority of countries. Additionally, the proportion of the population not covered by essential health services decreased by about 15% between 2000 and 2021, with negligible improvements made after 2015, leaving about 4.5 billion people, the majority of the world's population, without access to essential health services (WHO, 2023).

5. Neohumanism as a Framework Forward to Achieve the Right to Health

As has been covered in this article, the last centuries have experienced a steady progression towards creating policies, institutions, and systems that increasingly recognize the right of every human being to health and the need to protect it. However, it has also been covered that the objective of bringing health care for all is far from being achieved, with the majority of human beings still not having access to essential health services.

One way to explain the mismatch between the global recognition of the human right to health and the lack of actually achieving it for all is that this mismatch is a reflection of how the globalization process has taken place under an international system of dependency.

Dependency in global affairs refers to "a situation in which the economy of certain countries is conditioned by the development and expansion of another economy to which the former is subjected. The relation of inter-dependency between two or

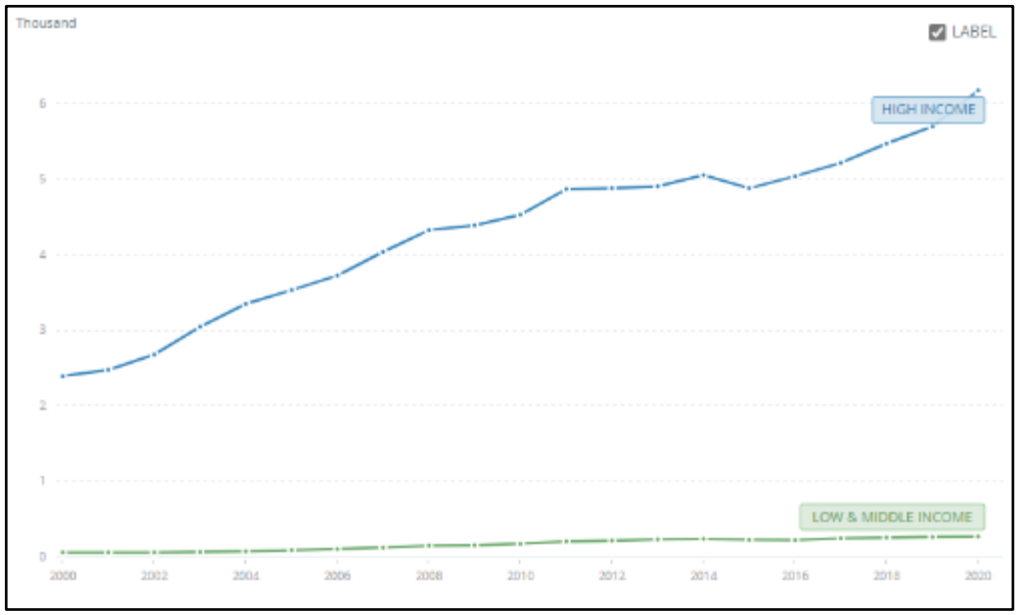


Figure 3. Growth of the per capita health expenditure in HICs and LMICs, 2000 – 2020.
(Reproduced from the World Bank, 2024.)

more economies, and between these and world trade, assumes the form of dependency when some countries (the dominant ones) can expand and can be self-sustaining, while other countries (the dependent ones) can do this only as a reflection of that expansion, which can have either a positive or a negative effect on their immediate development" (Dos Santos, 1970).

Considering as a starting point the year 1950, two years after the adoption of the UDHR, when the per capita income of the industrialized, developed, or dominant countries was $3,841 USD, while that of the low-income, developing or dependent countries was $146 USD, we may observe that the trajectories of dominant and dependent countries were starkly different. Although thirty years later, in 1980, the per capita income in dominant countries had expanded to $9,648, the per capita income in dependent countries only rose to $245. In thirty years, the gap in per capita income gap between dominant and dependent countries grew from $3,695 to $9,403 USD (Namkoong, 1999).

Following this comparison, we find a similar progression when we observe the dynamics of health expenditure per capita. While in the year 2000, the per capita health expenditure in low and middle-income countries (dependent) was $60.57 USD, the same measure was $2,394.95 in high-income countries (dominant). By the year 2020, this figure had increased to $274.28 in dependent countries and to $6,176.46 in dominant countries, expanding the gap from $2,334.38 to $5,902.18 USD (World Bank, 2024). Figure 3 shows the per capita health spending trajectories in dominant and dependent countries.

As Figure 2 depicts, similar patterns in the distribution of the burden of disease can be observed between dominant and dependent countries, where dominant countries are healthier and dependent countries are sicker.

The neohumanist philosophy of P.R. Sarkar describes two main sentiments that underlie the significant gap between countries and between socioeconomic and ethnic groups in terms of wealth and health. Sarkar refers to the socio-sentiment and the geo-sentiment as the identification with and having higher esteem with a particular sociological group and geographical place, respectively (De Oliveira, 2023).

These sentiments underlie why, even though there has been a global recognition of the fundamental right to health of every human being for 76 years, the unprecedented economic expansion that the world has experienced over the last century has not translated into an equal expansion of health services available to the impoverished and underserved of the world, as wealth and disease follow social and geographical patterns.

If we want to progress forward to achieve the right to health for all, under the current trends of migration, climatic change, and technological transformations, it will be imperative for the global health policy framework to evolve in its institutional structures. One major flaw of the existing global policy framework related to the right to health is that they are primarily limited to setting aspirations and goals, without clear channels of global cooperation to materialize them. The next global institutional requirement to achieve the right to health is to generate a global health institutional network that

operates not only at goal setting, but also at other levels of traditional health systems structures, including mechanisms for global financing, payment, organization of healthcare delivery, and regulations, guided by a clear neohumanist ideal that excludes any geo- and socio-sentiments, but rather exalts the equal value and dignity of each human life.

Lastly, Sarkar's neohumanist philosophy extends beyond humanism, beyond recognizing the inherent value of each human life, but also recognizes the inherent value of each living being on this earth, and even the inherent value of the non-living matter. In his seminal work on neohumanism, Sarkar states:

> *...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. (Sarkar, 1982)*

The movement towards this universal aspiration has already started in the academic health sciences sphere, under the terms "Planetary Health" and "One Health," championed by different institutions (de Castañeda et al., 2023). One Health historically focused on zoonoses, proposed and led by veterinary communities, however, the concept has continuously developed. One Health is currently defined by the Food and Agriculture Organization, the UN Environment Programme, and WHO as "an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals, and ecosystems. It recognizes the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and interdependent. The approach mobilizes multiple sectors, disciplines, and communities at varying levels of society to work together to foster well-being and tackle threats to health and ecosystems, while addressing the collective need for healthy food, water, energy, and air, taking action on climate change and contributing to sustainable development" (One Health High-Level Expert Panel et al. 2022).

Planetary Health has been championed by the Rockefeller Foundation and the medical journal The Lancet. It recognizes that the impact of human activities on our planet's natural systems has led to the disruption and transformation of most natural systems, including the disruption of the global climate system; widespread pollution of air, water, and soils; rapid biodiversity loss; reconfiguration of biogeochemical cycles, including that of carbon, nitrogen, and phosphorus; ecosystems destruction and transformation; changes in land use and land cover, and resource scarcity, including that of fresh water and arable land (Myers, 2017). These disruptions are not only leading to the sixth major extinction of living species since the formation of our planet, but they also represent a serious threat to human health (Pievani, 2014). Planetary health recognizes that human health and well-being depend on protecting and restoring the natural environment we inhabit and share with other species on this planet.

While Planetary Health and One Health still revolve around human health, they represent some of the first attempts at expanding the underlying spirit of humanism to other animate and inanimate entities at the global academic and policy spheres. The struggle for the recognition of the human right to health was a multi-century effort that was catalyzed by the abominable events of the Second World War. It was not only an intellectual development, but rather it required a new ethical and philosophical conception of humanity under humanism, enshrined in the universal declaration of human rights.

We are living at times of abominable destruction of human lives, non-human lives and inanimate members of our planet. Global efforts recognizing the need to protect all lives as a shared international priority are quickly developing and expanding, but have lacked a comprehensive guiding philosophical and ethical viewpoint that could bring them to the general public. The time is ripe for a new ethical and philosophical viewpoint for all of humanity to reassess its relationship with the rest of the world, one which expands the spirit of humanism to everything, animate and inanimate, such as nehumanism.

After all, as Dr. Paul Farmer stated, "The idea that some lives matter less is the root of all that is wrong with the world."

The article, complete with all its references, is published on theneohumanist.com

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The Five P Health Model

The Emerging Health Paradigm

By Dr. Sohail Inayatullah

Emerging Issue

By 2040, the Five P health model becomes the dominant model of health. Its key messages are:

- The current health model does not match or meet the changing needs of patients, the health system, and dramatic changes in science and technology
- An alternative more holistic model is required
- The 5P model could possible be the innovation that creates far more inclusive, robust, and resilience
- It develops on Hood's 4 P health model

Policy Brief

There are weak signals in a shift to a new model of health. This is the 5p health model. Earlier signs of this have been the work of Leroy Hood, who has suggested a change from the current reactive (the doctor enters when the disease has appeared) system to the four P model. This is defined as preventive, personalized, predictive, and participatory (Hood, 2013; Cornell Tech, 2016). This is the convergence of systems medicine and the digital revolution along with the rights of the patient. To this we can add the fifth P, which is partnership (Inayatullah, 2020: 538).

The 5p model consists of:

1. Prevention (exercise, meditation, early check-ups, environmental design, health equity);
2. Precision/personalized medicine (tailored medicine);
3. Predictive health (anticipatory systems);
4. Participation (patients designing their health journey); and
5. Partnership (all agencies working together).

Done well, this vision would dramatically reduce costs. It would do so by focusing on individuals in the context of their communities, use advanced genomics medicine to tailor health solutions for the individual, predict an individual's health pathway, work with patients so they could participate in their health decisions, and create health systems that work in partnership with each other. This challenges the generic, silo based, reactive, problem-solving hospital health model.

This approach moves us from (Hood, 2013):

- Reactive to Proactive
- Past based to Anticipatory
- Disease treatment to Wellness maintenance and creation
- Population-based to individual-based
- Records fragmented to records on the cloud and linked
- Large scale diffusion to the Peer-to-peer health – social health
- Physical space (cities and neighbourhoods as inert to geography as smart and active)
- Single systems to Whole-of-Society solution

Prevention – the first P

The health system in the short (3-5 years) and medium (6-12 years) term is likely to experience higher demand as the population ages (Inayatullah, 2009). With more expensive medical technology available to prolong life we can expect costs to continue increasing. Wage demands (quite justifiable) by nurses and allied health workers are likely to also increase the overall costs to the health system. Citizen demands are not just in expensive new medical technologies but in a rethinking of the hospital itself, making it far greener, smarter, and patient friendly and with revolutions in ehealth, home based (Sheraz, Inayatullah, and Ali, 2013). As health continues to take on a higher percentage of GDP throughout the world, cost containment pressures are likely to increase, even as an ageing population changes the intergenerational electoral balance. But where can cost savings come from?

One way to reduce costs is to enhance the Prevention health model. This entails creating a healthier society so the pressures on the health system, particular the hospital system, are reduced. Prevention as a new health worldview stems partly from sage advice of the past – a stitch in time saves nine, an apple a day keeps the doctor away, wash your hands, and look both ways before crossing the street – and from public health pressures that understand that reckless individual behavior leads to overall cost increases for all. Empirical evidence suggests that prevention does work. In Australia anti-smoking public education and legislation has prevented more than 17000 premature deaths; and the 176$ million that Australian governments have invested in tobacco control over the past 30 years has

Partnership
(all agencies working together)

Participation
(patients designing their health journey)

Prevention
Exercise, meditation, early check-ups, environmental design, health equity)

Precision/personalised
medicine (tailored medicine)

Predictive health
(anticipatory systems)

delivered 8.6 billion in economic returns (The Weekend Australia, 2007; Tobaccoinaustralia.org.au, N.D.).

Personalized – the second P

Conventional research, medical research, argue critics is group focused, and more than that, assumes a norm – often a Caucasian male. They have far too little diversity (Scientific American, 2018). Personalized medicine both as research and practice takes a different tack instead of the one size fits all. It is tailored. Personalized medicine is focused on everyone's unique make up. This means an understanding of (WEHI, N.D.)

- Genomics to link changes in DNA sequences with responses to treatment.
- Proteomics, to determine treatment responsiveness influences changes in proteins
- Systems biology, that incorporates many types of information about samples to understand how they may respond to disease.
- Bioinformatics, to develop powerful methods to analysis complex data

Personalized medicine, because it is based on each patient's unique genetic makeup, is beginning to overcome the limitations of traditional medicine.

Argue proponents of the Jackson laboratory, it is increasingly allowing health care providers to:

- shift the emphasis in medicine from reaction to prevention
- predict susceptibility to disease
- mprove disease detection
- pre-empt disease progression
- customize disease-prevention strategies
- prescribe more effective drugs
- avoid prescribing drugs with predictable side effects
- reduce the time, cost, and failure rate of pharmaceutical clinical trials
- eliminate trial-and-error inefficiencies that inflate health care costs and undermine patient care

Personalized medicine is often also referred to as precision medicine (Marson, Bertuzzo, and Ribeiro, 2017).

Prediction – the third P

Prediction in this approach is used in multiple ways. First, for example, using AI and modelling to understand likely health problems for individuals if they do not change behaviour (Roy, Nikolitch, McGinn, Jinah, Klement, and Kaminsky, 2020). Second, prediction is used at the environmental level for early identification of disease. Third, prediction can be used to identify changes in the environment – pollution, congestion – that can lead to potential illnesses (Oni and Maulida, 2021). Fourth, prediction can be used for individuals to develop health pathways based on their genome or biome. Prediction can be used as well as systemic level, for workforce planning, for pandemic alerts and preparedness. It can also be used to anticipate emergency department visits, daily hospital attendance and admissions (Soyiri and Reidpath, 2013). Prediction thus can be individual based, systems/organizational based (hospitals/workforce), and the larger environment that health systems find themselves in.

Participatory – the fourth P

This approach as signalled by Clem Bezold and others over the decades is a shift from the "Doctor will see you now, "to the Patient will now see you." (Hancock and Bezold, 1994). Instead of the doctor knows best, solutions from conversations with the patient. The patient thus moves away from the factory model of medicine, which albeit efficient, is not as effective as a patient centred participatory model. Indeed, Bezold goes as far to call it the "I am my own medical home" approach, where the patient is truly first. This pendulum shift of course is extreme given that medical systems have been expert based first with the patient the problem. However, as many argue new digital technologies make participatory medicine far more likely. In the emerging future, we could thus see the model shift toward "well-being and wellness, convenience, flexibility, self-direction, and personalized experiences. This goes beyond 'sick care' to 'healthfulness' inspiring, encouraging, and teaching individuals to make positive care and lifestyle choices and be engaged in and accountable for lifelong health." (Coughlin, Roberts, O'Neill, and Brooks, 2018).

Partnership – the fifth P

The fifth and last aspect of the 5p model is partnership. Complex or wicked problems are not solvable but one aspect of government, community, business, or individuals. This is where the partnership model comes in. As a weak signal, in a workshop for a leading Australian mental health foundation, participants asserted that problems of suicide and other health issues could not be solved by the Foundation itself. They needed to partner with google, Meta, and other AI companies to help develop predictive models of illness. They also needed to ensure that states and the Federal government worked together. As well, in the workshop they wished to ensure that "everyone was in the room." To this end, along with social workers, persons with lived experience, corporate leaders, government representatives and others were all present. Similarly in a series of conferences on disability, the future, and strategy, government representatives ensured that as much as possible, all parties were engaged and present at the conference. Partnership, they rightly understood developed from inclusion.

Partnership of patient, business, the medical system, doctors and nurses, leading edge AI companies, innovation labs, the government, allows implementation to occur. Without partnership – a whole of interests approach – then the 5 model would fall apart.

While the traditional model of medicine is not likely to disappear as reactive medicine is built into the system, we are seeing weak signals of another approach, the 5P emerging.

The article, complete with all its references, is published on theneohumanist.com

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.

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Shrii Prabhat Ranjan Sarkar on Medicine:

MIND AIDS IN ACTIVATING NATURE'S HEALING POWER

Current methods of medical treatment can be roughly divided into three groups. The most common method is to fight disease with strong pills and injections. Allopathy, ayurveda and hekemii[1] can be included in this group because they use strong medicines and also poison as a medicine, although their methods of diagnosis and remedies differ. In this method of treatment the selection of medicines involves great risk, because more emphasis is placed on the indications of the disease than on those of the patient, and because of the possibility of causing death.

The great danger in diagnosing illnesses and prescribing medicines according to the germs and diseases present in the body is that it is nearly impossible to arrive at a firm conclusion about the precise nature of germs. Whether diseases are caused by germs or germs are created from diseases which are caused by other factors is a matter of controversy.

The symptoms of one disease may be identical to those of another, and the remedy for one may prove to be completely ineffective or even harmful in the case of the other. Moreover, as poisons are used, they may seriously affect the vitality of the patient. Just imagine, if the doctor is incompetent or is completely motivated by a business mentality, what will the plight of the public be?

There was a time when diagnosing illnesses and prescribing medicines were not very difficult because diagnoses were based on three constituents of the body – air, bile and phlegm – with blood as a fourth constituent. But increased physical and glandular complexity has led to a corresponding increase in the number and complexity of diseases. So to what extent can this method of diagnosis be useful to a doctor? Is it not simply guesswork to prescribe medicines for a particular disease when the medicine is prescribed for the disease but the disease is diagnosed according to the bodily constituents? If you mentioned this to an allopath, ayurvedic doctor or hakim he or she would probably hand over his or her stethoscope or mortar and pestle and reply, "Here you are, sir. You had better treat the disease yourself." This, of course, is an angry remark. While I recognise that a lay person should not have the audacity to counsel a doctor, I must also point out that everyone has the right to consider the merits and demerits of a particular type of medical treatment.

The welfare of the patient should be the main aim of the medical profession, regardless of the philosophical or logical ramifications of a particular system of medicine. Doctors may find it somewhat difficult to work with such a principle, because it is unreasonable to expect them to be experts in all the medical systems. In reality, it is highly unlikely. Nevertheless, what is not possible in a doctor's chambers may be possible in a hospital.

In the hospitals of some countries the welfare of the patient is given top priority and the patient is treated accordingly. Immediately after being admitted, he or she is thoroughly examined by an appropriate board of doctors who determine the most suitable system of medical treatment. In other words, if the patient's disease can be easily cured by allopathy, he or she will be treated by an allopath; if by homeopathy, by a homoeopath; if by naturopathy, by a naturopath; and so on. If various types of treatment are available, changing from one type to another will not be difficult in the event of the patient not responding to a particular type of treatment.

The Role of the Mind

The healing power of nature cures disease; medicine only helps nature. The mind of the patient helps to activate the healing power of nature. If a doctor in whom the patient has complete faith prescribes water instead of medicine the patient will be quickly cured, but if the patient regards the doctor as a quack the disease will not be cured, even if the purest medicines known to medical science are prescribed and properly administered. It is obvious then that the disease is actually cured by the power of the mind, the medicine being secondary.

A disease can be mental or can be physical. Similarly, medicine may be mental or may be physical; hence it is most desirable and productive if both kinds of medicine are administered

[1] Ayurveda and hekemii (Unani) are traditional Indian systems of medicine.

simultaneously in all diseases, whether they are physical or mental. Those who only believe in psychological treatment for mental disease know from experience that such treatment will not permanently cure the disease and the patient will soon relapse. Only where, along with psychological treatment, guidance concerning diet, bathing and behaviour is given, and to normalise the diseased glands of the body medicines prepared from the five fundamental factors are prescribed, can the disease be permanently cured.

In the same way, if patients suffering from a physical disease are given proper medicine, food, light and air but at the same time are subjected to constant criticism and humiliation, it will be difficult for them to fully recover. Even though some people have everything they physically need, they become mentally debilitated, like a worm-eaten, withered flower. So it is evident that patients suffering from a physical disease need proper psychological treatment and a congenial environment in order to maintain their mental health.

Homeopathy

The principles, application and philosophy of homoeopathy are completely different from the above medical treatments. Homoeopathy treats the symptoms of the patient, not the disease or its symptoms. So there is very little possibility of causing harm, even if the diagnosis is not quite correct. A doctor with good powers of observation and a subtle sense of discrimination can easily prescribe remedies according to the patient's symptoms. Another speciality of homoeopathy is that medicines are administered in subtle doses, not in the form of strong tablets, and such doses quickly become active in the molecules of the patient's body as well as in his or her mental sphere.

The greatest difficulty with homoeopathy is that it is based upon the subtle intellect of the doctor, and to achieve such a degree of subtlety regular, sustained effort is absolutely essential. Yet homoeopathic treatment is generally quite slack, and slackness is particularly evident in the proficiency of homoeopaths. Anybody can become a homoeopath by studying a few books. No one will object. In most countries there are no proper regulations either.

The value of the principle like cures like (*shama samaḿ shamayati; similia similibus curantur*)] has been understood by human beings since the age of the Mahábhárata, but it was Mahatma Hahnemann who brought it to the scientific level through his system of homeopathy. People realised the value of this principle during the Mahábhárata age from the poison treatment of the poisoned Bhiima. There were considerable advances in Ayurveda in poison research, especially with snake, scorpion, spider and hornet poisons. Within Ayurveda, members of the royal family of Cochin in the state of Kerala were pioneers in this. At one time there was a good deal of individual research into poison treatments. My maternal grandfather, the late Dr. U. M. Basu (allopath) conducted research into the medicinal use of scorpion poison, but he died before his research findings could be properly documented. The science of allopathy does not seem to have made much progress in these treatments, but there are endless opportunities for making progress in this respect.

Naturopathy

Naturopaths do not believe in using medicine. They think that it is possible to cure patients through the gifts of nature only – through earth, water, light, heat and air, together with a proper diet. I do not deny that this is possible, but it is also often difficult to gradually and completely attune the body to nature. People should recognise that medicine does not cure disease, rather nature cures disease with the help of the body's own healing power. Medicine only helps to accelerate the activity and speed of the healing process.

In cases where disease is caused by unnatural activity, I do not see the harm in using medicines to help nature. Just as earth, water and air are medicines, are not various types of medicines also prepared by selecting ingredients from nature? Of course precautions must be taken when using medicines to help the healing power of the body, to ensure that they do not cause physical side-effects or psychic disturbances. Where a person has not engaged in unnatural activity, he or she may still contract a disease due to pollution in the air, earth or water. In such cases is it possible to attune the body to nature? Furthermore, the diets and lotions prescribed by naturopaths are often very expensive and beyond the means of the poor.

Fasting

Not only humans but many other creatures as well are more or less familiar with medicines. However, since ancient times many non-human creatures have considered fasting or deliberate abstinence from food as their natural medicine. You will notice that dogs and certain other animals abstain from eating if they feel a little ill. You also often do not feel like eating when you feel somewhat physically out of sorts.

Some contemporary physicians advise their patients, and even pressure them, to eat even when they do not have any appetite. This, however, goes against the laws of nature. It is natural for a sick creature to feel an aversion for food, unless they

suffer from the disease of overeating. By not eating, certain organs of the body enjoy a temporary rest. As a result, after the fast the organs are rejuvenated and reenergized and a feeling of wellbeing returns to the physical body. So not only in the case of prehistoric humans, in the case of the prehistoric animals as well, the ancient, pure and chief medicine was fasting or voluntary abstention from food.

Yoga Exercises

The object of the art of healing is to cure a patient, both physically and mentally. So the main question is not to uphold any particular school of medical science; rather, the key task is the welfare of the patient. Just as diseased body organs can be restored to normal by administering medicines internally or externally, they can also be healed, more safely and more perfectly, with the help of yogic ásanas and mudrás.

Sunlight

There are many healing elements in sunlight. The rays or pencils of rays of different colours in sunlight are medicines for different kinds of diseases – preventive and antidotal. Sunlight has different benefits during different hours of the day. Sun-warmed water also has different kinds of benefits. Thus sunlight has been regarded since ancient times as medicines for different bodily ailments. ... The medicine, that is, sunlight should be taken in through the dorsal spine, not through the chest or the abdomen.

Moonlight

Moonlight is not a medicine like sunlight is. Rather moonlight often overwhelms the mind with a different kind of emotion. However, the qualities of medicinal herbs and plants are affected according to the difference in moonlight, that is, in accordance with the lunar day and lunar fortnight. So there are rules for removing medicinal plants from the soil, preparation of medicines and their uses in accordance with the lunar day. The medicinal qualities undergo changes during the different periods of the day, so one should use medicines with that factor in mind; at least it is better if it is done so. Those medicinal herbs and plants or those medicines whose qualities are affected according to the difference in lunar day or planetary position are called *kulyá*.

Air, Water, Soil

The pure air of a secluded place is also an excellent medicine for the physical body. This medicine in the form of air should be taken through the back of the head and the upper part of the forehead. The earth from a riverside area near a forest in which there is a small amount of sand and a large amount of soil is also an excellent medicine for the physical body. This medicine should be taken bare-bodied on a bed of earth.

Odorless, tepid water, especially if it is sun-warmed, is an excellent medicine for the physical body. It has great healing qualities. Since ancient times, knowingly or unknowingly, human beings and different animals have also accepted water as one of their medicines.

Soil possesses great curative properties. With cuts, scratches, sores and boils, if soil is applied properly, it can be especially helpful in curing the disease and drawing out the poisonous substances. If the mud pack starts cracking within about three hours after drying, or if the pack becomes stale, then the pack should be thrown away. The wound should then be cleansed carefully with some antiseptic, and after giving it a sun-bath, a fresh pack should be applied. Healthy persons or persons suffering from skin disease should smear their bodies with yellow soil, massage themselves, then immerse themselves in a river or in a pond. This will certainly give good results. It is desirable for everyone to use this mud-massage now and then when they bathe. Those who are suffering from leprosy or other diseases characterised by contaminated sores should definitely have such a mud-massage followed by a bath every day.

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On the Sustainability of AI Growth

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Artificial Intelligence (AI) denotes the intelligent behavior of computer programs and machines that depend on these, in contrast to the "natural" intelligence of biological species. It can be argued that since silicon, one of the elements used in computer chips, is a naturally-occurring resource, and programming languages are invented and programs are written by (biological) humans, there is nothing "artificial" in AI. The term AI, however, has become synonymous with technological superiority and development. It was first coined by John McCarthy, one of organizers of a workshop at Dartmouth College in 1956. Earlier, the British mathematician Alan Turing had already stated that "machine intelligence" is possible in 1950 article "Computing Machinery and Intelligence".[1] A rapid progress in AI ensued thereafter but came to a halt due to a sudden drop in research funding, in part triggered by a report from the British mathematician, Sir James Lighthill said that many of AI's most successful algorithms would not work for real world problems. Apart from mathematical logic and programming, human language and its processing were recognized as being closely-linked to intelligent behavior of computers. In that era, it was thought to be nearly impossible to teach computers the nuances of language such as context. What followed until early 1980s is sometimes termed as 'AI winter' with very little research progress. Thereafter, since the late 1980s, the research progress in AI accelerated with the advent of internet, availability of large quantity of data, lowering cost of computer hardware which became smaller and faster, and the invention of Graphical Processing Units (GPUs) for fast parallel processing. Though it has been researched on and talked about for several decades now, it only since 2010 that AI along with its associated mathematical methods, often termed as "Deep Learning" or Machine Learning (ML), has seen an unprecedented growth in terms of visibility and adoption, so much so that it has now become a fashion to add ".ai" in the internet domain addresses, as an expression of modernity and technical strength. The recent progress in the last five years has been claimed a huge breakthrough, some have claimed that it is perhaps as big as the invention of modern computers or that of electricity or even that of fire![2] While these may seem exaggerated, it true that some of the awe-inspiring tasks that can now be performed by computers were once only a part of imagination and science fiction.

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ChatGPT, an AI tool introduced by OpenAI, is both a symbol as well as a driver of recent growth. (Here, GPT stands for Generative Pre-trained Transformer and "Chat" is perhaps used due to the fact that one can interact with the AI-tool as if it was a human). Such was the buzz around it that ChatGPT acquired 100 million users worldwide in

AI will soon affect all our lives in some way or another

just two months. Similar tools have emerged from other major companies, Google, Amazon and Meta and there is a fierce competition among these to attract more customers and retain their advertising revenue. The most recent version of ChatGPT, called GPT-4o (where 'o' stands for 'omni') includes a "chatbot" which can communicate in a 'human-like' way, along with giggles, pauses, exclamations, and understand other nuances of a natural language, such as the context.[3] It can even help solve math problems, analyze plots, translate, write or troubleshoot computer program along with human-like voice assistance. Even though it is still in its infancy, this is indeed a phenomenal achievement that was once thought to be impossible. There is a lot of debate in the news on the advantages and caveats associated with the ever-growing capabilities of AI. On the one hand are the strong proponents who promise that, just as the computers made our lives more comfortable and advanced the society in several ways, the adoption of AI by humanity is bound to make us more technologically "advanced" and even solve some of our major problems. On the other hand, there are the skeptics who ask if we should indeed allow the machines to become so powerful that they may take control of the human society one day. There is probably some truth on both sides of the argument and, as a result, the actual outcome of AI adoption may be somewhere in the middle – neither utopian nor dystopian. There is very little discussion in the mainstream media, however, on the resources needed to support this near-unstoppable growth of AI, and hardly anyone questions if we really have them. In particular, while there is a shortage of clean energy, where will be the energy needed for the tremendous amount of computing come from? It has been argued that by 2027, AI computer servers worldwide would consume similar electricity as Argentina consumes in a year, equivalent to about 0.5% of the world's electricity use (and these numbers may change in the future).[4, 5]

In this article, the questions "Is the growth of AI sustainable?" and "Is it really needed?" are discussed from various angles. The benefits of AI, that may perhaps justify the resources required, are discussed first. Thereafter, the energy and cooling requirements are discussed. I then move on to talk about the human vs machine efficiency that is closely linked to energy usage. Some thoughts on potential impact on human ingenuity, which is linked to efficiency, are portrayed before I summarize with final comments.

Necessity and Advantages of AI – recent progress

Over the course of history, the invention of better machines has helped save time, effort and money apart from making lives more comfortable. The potential in AI-based machines is usually demonstrated by its ability for fast object recognition, pattern matching, information and image processing that results in an associated "training" of the ML models. These models can then be used for applications such as self-driving

cars, or for diagnosing diseases quickly from a large number of available scans, for example. Potentially, there is possibility of time, money and human lives saved. While there are clear advantages, it is not easy to get accurate output from an AI model for an application other than the one it is trained on. Take for instance a self-driving car that is trained to run by itself in the US. It may find it extremely challenging to run in Europe (and nearly impossible in India!). Even within the US there have been several reports of fatal accidents due to self-driving cars, despite the fact that a lot of effort and money has poured in for research and development.

The development of Large Language Models (LLMs) has advanced the ways in which AI can be advantageous. For instance, if we travel to a country whose local language is completely unfamiliar to us, an AI-enabled phone camera can show the text in our native language, and an AI-enabled voice interpreter can help talk over a phone in the local language. Moreover, the advantages of ChatGPT (or its competitor tools such as Gemini by Google) are immense. These can generate a human-like text and/or voice response constructed from a database of existing knowledge on the internet. The language and paragraph-wise structuring of this response is often "too perfect" though the accuracy of content depends on the status of current knowledge. The ubiquitous "Google search" may be soon replaced (or augmented) by a response from a tool that can save a lot of our time and effort. Of course, sometimes its response may not concur exactly with the requirement(s), or it may take multiple iterations, but this technology will gradually become better.

Moreover, ChatGPT been trained to generate and correct (troubleshoot) computer code in many languages. This obviates the need to recruit and train a large number of software engineers, thus saving salary costs. Newer versions of ChatGPT, some available for free, have got several advanced features such as better understanding of nuances of natural language (including context, ambiguity and coherence), broader and more recent knowledge database in a large variety of domains (including technical, medical and legal), ability to respond based on image inputs, interactive assistance, better translation of multiple languages, enhanced ability to write creatively (e.g. poems, stories, scripts), suggestion of ideas based on inputs, better customization with the user, etc. An example of the usage is for disabled people in meeting their everyday challenges, such as a blind person trying to cross the road. Another example is as a personal assistant, or as a customized personal tutor for children who have no access to quality education, particularly in their language of choice. Khan Academy, the pioneer of digital education, has collaborated with OpenAI, the owner of ChatGPT, to come up with Khanmigo, a Chatbot designed to assist school students with subjects such as mathematics, science, humanities, and programming.[6] Rather than giving direct answers, the AI-tutor is designed to help step-by-step. For example, in order to calculate the area of a circle, rather than directly displaying the answer, the Chatbot will prompt the student to type the answer, or ask the doubts, offering hints and guidelines on the approach required. How many (human) teachers have been trained or have the ability or the patience to teach in the correct way? Whether students will really miss "the human element" of the interaction is a subject of debate, and is less likely to be a factor for the future generation of students who may be growing up with mobile phones. Let us now explore what are the energy and cooling requirements to enable a wider adoption of AI.

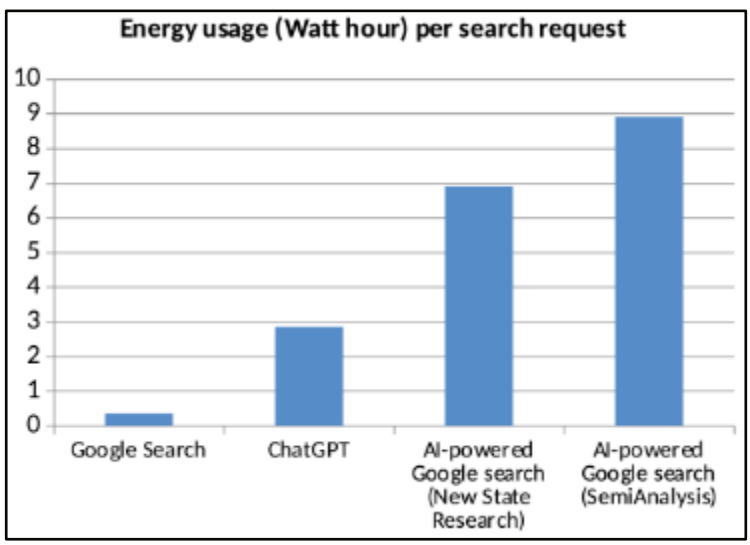

Fig. 1 Estimated energy consumption for various search technologies[4]

Energy Consumption, Growth and Distribution

There is a lot of ongoing debate on the impact of AI on jobs that may become redundant. However, here I will refrain from dissecting the potential labor market impact and discuss another relatively less-debated impact of AI, which has been pointed out, but probably not loud enough. According to de Vries,[4] by 2027, the total energy consumption by the AI sector could be between 85 to 134 Terawatt-hours (TWh) each year. (1 Watt-hour is equal to the energy consumed by

We, as a collective society, should get to decide how much technology we must allow into our lives, so that we are its master and not the slave.

a 1 Watt electrical device in 1 hour). This is equal to (or more than) the energy demand of many countries such as Argentina and Netherlands. A recent report by the International Energy Agency[7] offered similar estimates, suggesting that the annual energy usage at data centers, where all the internet data is stored, was around 460 TWh in 2022 and could increase to the range 620-1050 TWh by 2026. A comparison of the novel internet search methods by de Vries[4] shows that the energy consumption rises several manifolds for AI-integrated technologies as compared to the simple Google search (Fig. 1). It is possible that the hardware will also get more efficient with time, and there is indeed some evidence of this, however, the pace of this increase in efficiency is unlikely to match the phenomenal growth of AI.

Recently, attempts have been made[8] to study the carbon emissions due to ML models. However, this is specific to the computer server and its location and it is difficult in the absence of data. A wider adoption of AI-ML models requires a higher accuracy and a better training of these models. This requires more data and consequently a larger computation time to generate that data and as well as for training the model. This clearly translates to an ever-increasing energy usage. Some good practices that can be followed by the AI companies are: choosing energy-efficient hardware and computing servers or cloud storage from carbon-neutral companies, quantifying the emissions, reducing wastage of resources, identifying the problems where there is a real need of AI tools & avoiding frivolous usage, having local renewable energy sources such as solar panels along with storage, etc. While some companies such as Microsoft have initiated efforts in this direction others need to adopt. It has been argued[9] that perhaps AI can help in better (and faster) adoption and optimization of renewable energy. Even the Oil companies such as ExxonMobil and SinoPec have used AI-ML tools for improving productivity and efficiency.[10] Google has used its DeepMind technology to decrease the cooling power requirement and its cost by 40 percent.[11] An interesting technology that is being adopted in the industry is that of a "Digital or Virtual Twin".[12] For instance, in the digital twin of a power plant, all the actual production processes can be simulated on a computer in order to optimize the resources and minimize the energy intensive trial-and-error approach. As the primary goal of a business is to have a net profit, there need to be sufficient incentives for adopting renewable energy for the use of AI. Having said this, no matter how much are the efforts, efforts must also be made to encourage consumption for need rather than for greed, in the spirit of "Aparigraha" and "Santosha" as per the cardinal rules of Yama-Niyama from Ashtaanga Yoga.[13] We all are aware of the massive degree of income and wealth inequality where many people around the world may not even have electricity for basic use, or others are facing massive outages due to shortfall. However, prioritizing need over greed is easier said than done if the society is driven by profile maximization and human comfort as compared to the well-being of all. In a warming climate, we prefer to be inside air-conditioned (AC) rooms – however, this heats up the planet even more as the heat removed is vented out to the atmosphere. (This is mandated by the laws of thermodynamics). This leads to even greater warming, and greater electricity consumption, that may sometimes come from non-renewable sources such as coal, and the cycle goes on. Those who can afford can buy comfort, but what about those cannot or those who do not have a voice, for examples plants and animals? Should they be allowed to suffer? The principles of Neo-humanism by Shrii P R Sarkar,[14] which advocate the well-being of all are, therefore, even more relevant than before in this age of digital consumerism.

Need of Alternate Cooling Technologies

Computations such as those that happen in our laptops and mobiles produce heat that must be constantly removed by the use of a fan or other cooling methods. This is because of the Joule (also called Ohmic) heating that is proportional to the square of the current and electrical resistance of the material. As a consequence, doubling of power requirement means quadruple heat generation for

If humans learn to realize their true potential then the human may be far superior to AI. No matter how powerful or efficient AI is at generating text, writing codes, or creating art, it will never be conscious in the same way as the humans are.

the same device. At present, air or water cooling are the most popular cooling techniques for the removal of heat. Servers produce a lot of heat in very less time, which must be removed quickly, so this requires high heat transfer rate. A "thermal paste", which has large thermal conduction properties, is typically placed on a computer chip to enable this, and recently liquid metals such as Gallium have also been explored.[15] These elements must have high thermal conductivity, a property that conveys the capability of heat transfer by conduction. Metals also have high electrical conductivity so they must be used safely. Another promising technique that has been explored for data-centers is called Liquid Immersed Cooling.[16] Here a computer server is immersed in a dielectric, a thermally-conducting but not electrically-conducting liquid, which gets heated and flows to a secondary cooling circuit, transferring its heat. If this becomes economically-viable, it is an excellent option. Researchers are also exploring the use of mathematical optimization techniques combined with the laws of thermodynamics to minimize the cooling requirements and maximize the efficiency of data-centers.[17] At present water or water-based liquids are the best (and cheapest) coolants. However, given that there is a scarcity of drinking water in many parts of the world, such as in the Indian IT city, Bangalore, how appropriate is the usage of enormous amount of clean water for cooling the computers?

Human vs Machine Efficiency

When discussing the energy requirements, the question of efficiency (e.g. energy usage per calculation) naturally arises. It is without any doubt that mathematical calculations by even an old desktop computer are much, much faster than the speed what (most) humans can perform. It may seem that computers, therefore, are more efficient than humans but that is not always the case. According to an estimate, human brain uses roughly 20 Watts to work,[18] which is less than a laptop (with consumption ~ 50 W). In the future, the laptops may come closer. However, other abilities in which humans still excel are imagination, ingenuity, ability to think out-of-the-box, discerning & judgment capacity, connecting the seemingly dissimilar ideas, etc. Indeed, in his article,[19] Noam Chomsky writes: "The human mind is not, like ChatGPT and its ilk, a lumbering statistical engine for pattern matching, gorging on hundreds of terabytes of data and extrapolating the most likely conversational response or most probable answer to a scientific question. On the contrary, the human mind is a surprisingly efficient and even elegant system that operates with small amounts of information; it seeks not to infer brute correlations among data points but to create explanations." Of course, some of these human abilities may take years to build, and even then may be present only in a tiny fraction of the population. That said, there are some abilities even in toddlers, such as learning of nuances in their mother tongue, which are acquired without a formal training, that are not easy to create in a computer with so few training resources. A couple of points in this regard that may be important in the foreseeable future are:

i. For complex AI tasks it is not just the energy consumption but also the power (that is energy per unit time) consumption that will matter. If the required power becomes lesser, then these machines will clearly be more efficient.

ii. A larger population does mean greater competition for the finite resources such as land, water, energy and food. The total cost of energy required in training a human mind (and this includes more than a decade of education and training) will very likely be more than the total cost involved for producing and creating a computer (perhaps this can also be quantified).

This is certainly controversial and may have unpredictable consequences. For example, those governments who are spending merely a pittance of the budget on education may become even more callous towards the citizens who depend on Govt. support. Energy-efficient humanoid robots will increasingly be used in the future, especially in countries where the population is declining. Perhaps an increasing focus on AI may even help reduce the carbon footprint of humans on the planet, as has

Immobile humans living in an artificial world controlled by computers – a still from the animated movie WALL-E (2008)

been claimed by some researchers.[20, 21] What may be difficult to replace is a creative and skilled/intelligent human. But, what percent of the world's population fall in this category?

A small digression seems apt here as we have attempted the difficult comparison of a human mind with a computer. The philosophy called "computationalism" argues that the relationship between the computer software and hardware is similar to that between the mind and body. Arguing that the human mind is the neuronal activity inside the (physical) brain, New York university philosopher David Chalmers identified the so-called "easy" and "hard" problems of consciousness.[22] The easy part is to know how the brain processes and control signals, makes a plan, etc through the complex electrical activity. The harder problem is explaining how why there is a consciousness or how it rises in the first place. However, this is not such a "problem" in the Indian philosophies of Vedanta and Tantra according to which consciousness is independent of the brain, and is projected from the supreme consciousness ("Shiva") to the unit ("Jiva") through the physical brain. Similar thoughts are echoed in Buddhist and Jain philosophies as well. As per these philosophies, if the humans indeed learn to realize their true potential (one of the objectives of "Yoga") then the human may be far superior. Continuing further on this line of thinking, it is not difficult to conclude that no matter how powerful or efficient AI is at generating text, writing codes, or creating art, it will never be conscious in the same way as the humans are.

Impact on Human Potential and Ingenuity

The impact of generative AI on human potential is a topic of intense debate. On the one hand, the use of tools such as interactive AI agents that can "talk" in a native language can be of massive help in filling the huge gap in facilities available in urban and rural parts. For instance, let us consider the status of education and the availability of trained educators in remote Indian villages. An estimate suggests the total number of students to be around 521 million and the number of teachers as 9.5 million, out of which a majority are in rural parts.[23] Over the last 6-7 years, "smart" mobile handsets (but this is still limited to one handset per family) and high-speed internet network connection have reached the Indian villages, along with the electrical power. This can be leveraged to help students learn with a personalized AI-based-tutor tailored to their needs, and in their own native language. Google Research, India has already built Multilingual Representations for Indian Languages (MuRIL), a ML-based model to help people build local language technologies supporting 16 Indian languages. This is being extended to 100 languages now[24]. The teaching standards in some schools are often so low (partly because teachers are poorly paid, and no one aspires to be a teacher!) that it is likely students may prefer AI-teacher. However, how this may impact the creative potential of young children remains to be seen. If the models are designed keeping this aspect in view, for example interactive tools that provoke interest and curiosity, they will be very useful, particularly at the level of school education.

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The New Physics

The Physics Of Information, Computation, Self-Organization and Consciousness

Many researchers are dissatisfied with physics' current Standard Model (SM), pointing out its shortcomings despite several successes and achievements. They are openly calling for a new approach or new physics. Furthermore, the writer points out the lack of references to consciousness in all the major theories of physics, as the founders of quantum theory gave it a special place. In this article, the author calls for an interdisciplinary perspective and proposes a new approach to physics that considers recent advances in theoretical physics, computer science, self-organization theory, and consciousness to develop a new physics theory.

Keywords: Information, Computation, Self-organization, Standard Model, Intelligence, Consciousness, New Physics

Dr. Ediho Lokanga

1. Introduction

Despite over a century of research in theoretical physics to find the theory of everything (ToE), no tangible result has come out. Physicists are hard-pressed to produce an extraordinary theory explaining everything in the universe. They are busy attempting to synthesize quantum and relativistic physics. The overwhelming view of physics is based on particle physics' standard model (SM). For an interesting discussion, consult the writing by Papazoglou (2023). The SM of physics is the theory of particles, fields, and the fundamental forces (electromagnetic, weak, strong, and gravitational) that govern them. The SM informs us that everything in the universe comprises atoms; in turn, atoms are composed of electrons, protons, and neutrons and are made of elementary particles called quarks. There are six types of quarks. These are named up, down, charm, strange, top, and bottom (CERN, 2024).

In total, an atom is made up of seventeen particles: these particles are: up quarks, down quarks, strange quarks, charm quarks, top quarks, bottom quarks, electrons, electron neutrinos, muons, muon neutrinos, tau, and tau neutrinos, etc. These are the particles that make up matter and mass according to the SM. Figure 1.1 shows an illustration of the SM of elementary particles.

The SM has several successes and achievements, which are well documented. One of them is the coherent explanation of the three primary forces of

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nature: the electromagnetic, the weak and the strong. But so far, gravity has remained elusive. In this course, several approaches have emerged. The most prominent include:

• String theory (ST): Replaces the point-like particles of particle physics with one-dimensional objects known as strings (Brian, 1999). Each string vibrates at different frequencies, and each vibration gives birth to a different particle, see Figure 1.2.

• Loop quantum gravity (LQG): This theory of quantum gravity attempts to develop a quantum theory of gravity based directly on Albert Einstein's geometric formulation rather than treating gravity as a mysterious force. One of its main conclusions is that gravity should be quantized (Rovelli, 1998).

• Causal sets: This approach to quantum gravity postulates that spacetime is fundamentally discrete. The spacetime continuum is replaced by locally finite posets, alternatively known as causal sets (Surya, 2019).

• Euclidean quantum gravity: This is another approach to quantum gravity that uses the Wick rotation to describe the force of gravity according to the principles of quantum mechanics.

Topological quantum field theory (TQFT): Topological field theory is a quantum field theory that computes topological invariants.

• Etc.

In the following pages, I discuss SM's achievements and shortcomings and explain why physicists should consider incorporating new elements into the model or move on. Although several alternatives have been put in the past, I will show why they have not been successful. One of the leading ToE is known as string theory, which has been very successful in its applications in various fields of mathematical physics (Smolin, 2008; Maldacena, 1998), but unfortunately, despite the billions that have been invested over the last fifty years or so it cannot, at this stage, offer any falsifiable predictions. Consequently, this is one of the reasons its validity is questioned, as it cannot be experimentally tested.

One of the main reasons may be that string theory and all the above-named quantum theories of gravity were built without incorporating information and consciousness in their makeup. The other reasons are about what matter is made of. We are fully aware of what matter is made of according to the SM, but at the same time, we learn that when a quark and an anti-quark meet, they annihilate and become a photon. The latter is an electromagnetic wave, which moves around and carries information. Now, let me ask a question: Is matter made up of a physical entity? The answer seems to be no.

Atoms are tiny so-called particles that move around and carry information. For instance, when hydrogen and oxygen atoms combine to produce water, they compute and exchange information. Oxygen and hydrogen bind together to form water molecules. As they merge, each atom

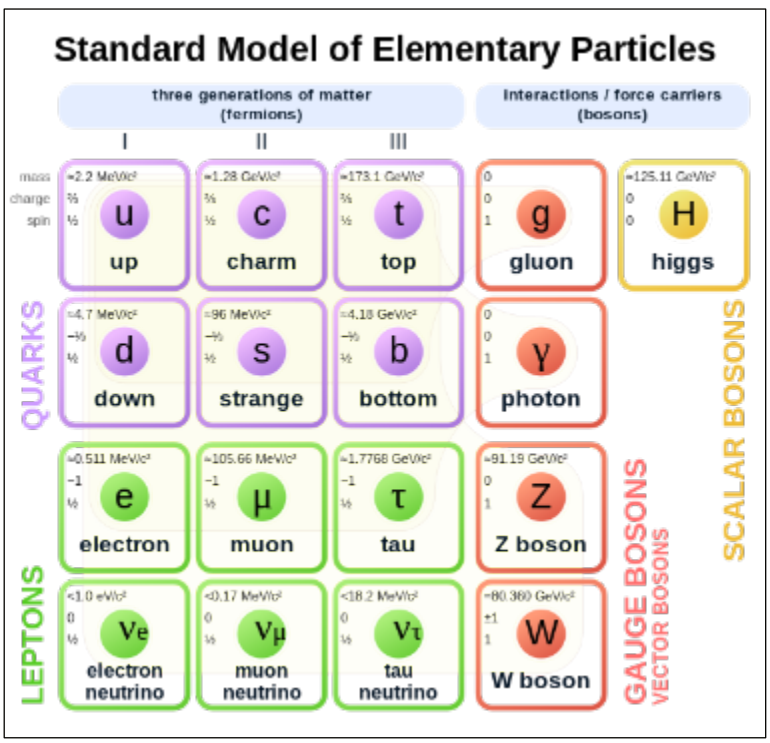


Figure 1.1: Fundamental particles of an atom (Study, 2024). Image via en.wikipedia.org/wiki/File:Standard_Model_of_Elementary_Particles.svg (copyright-free).

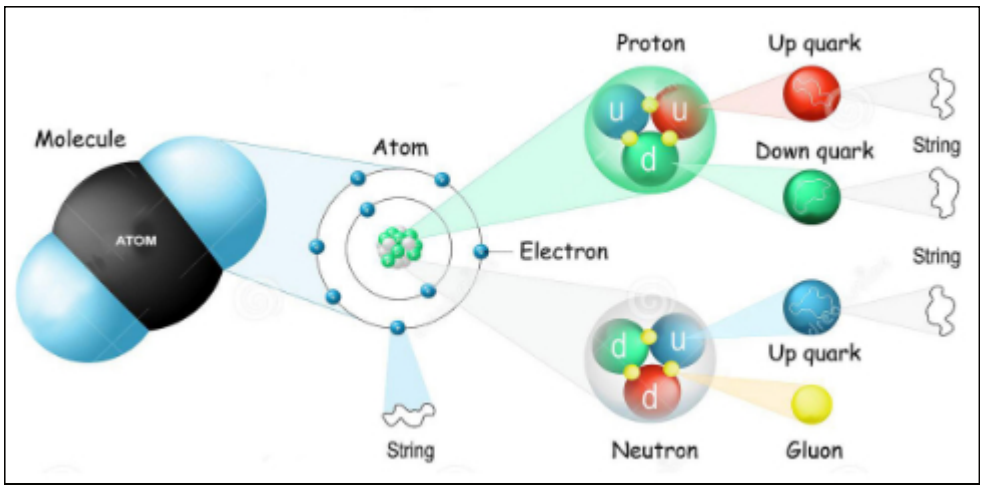


Figure 1. 2: Vectors diagram of particle (Brian, 1999). Image via researchgate.net/publication/359480985_Problems_of_Standard_Model_Review

calculates the optimal angle and distance to attach it to the others - the three atoms behave intelligently. Kelly (2004) informs us that oxygen uses yes/no decisions to evaluate all courses toward the hydrogen atom and then usually selects the optimal 104.45 degrees by moving toward the other hydrogen atom at that very angle.

The hydrogen atomic number is 1, made of one electron and a proton. It does not have a neutron. On the other hand, the atomic number of oxygens is 8, meaning it has 8 protons, 8 electrons and eight neutrons. The outcome of their reaction is a water molecule with 10 protons, 10 electrons and eight neutrons. When hydrogen and oxygen combine to produce water (computation is at work) and self-organization by moving closer to each other, the information each other holds (atomic number) cannot do anything apart from its movement, carried by energy, and it needs intelligence to organize itself.

We have now learned that everything in the universe is made up of atoms but also of information (Dodig-Crnkovic, 2012). When atoms combine, they perform several operations, self-organize themselves and present us with what we see and touch. Various theories of physics have neglected this vital aspect, only focusing on matter and energy. Other variables are in action whenever atoms combine. Matter and energy are not enough to understand the universe. Other factors such as information, computation, and self-organization must be considered to progress in the ToE quest. In this paper, I argue why a new physics is needed. Let us welcome what I call:

The New Physics: The Physics of Information, Computation, Self-Organization and Consciousness.

2. The Standard Model of Physics (SM)

Here, I would like to put things into perspective and explain why a new physics model is needed. Therefore, I would like to discuss the successes and achievements of the SM and its shortcomings, including the outstanding problems that have not been resolved so far.

2.1 Successes and Achievements of the SM

Hirschauer (2017) discusses the many achievements of the SM and points out that it has successfully explained many aspects of the natural world. Furthermore, Pomeroy (2022) stresses that the SM is our most successful theoretical physics model despite its inability to explain everything in the universe. Some of these successes and achievements include, but are not limited to, the following:

- Experiments have confirmed the predictions of the SM of particles and illustrated in the electroweak sector and quantum chromodynamics.
- The SM predicted the existence of the W and Z bosons, gluon, top quark, charm quark, and many of their properties before they were observed.
- The predictions of the existence of the Higgs boson were successfully confirmed experimentally with good precision.
- How particles and three of the forces are related to each other.
- A solution to how gravity works at the microscopic level may be getting closer. Researchers from the UK, Netherlands, and Italy have detected a weak gravitational pull on a tiny particle (Leach, 2024). But I would like to add that this is ongoing research and is yet to be replicated.

2.2 Shortcomings of the SM

Despite its successes, it has several shortcomings. An article in *The Economist* (2022) informed us that

We should change our approach to the overwhelming mechanical and materialistic view of the universe and think of an atom as an intelligent entity that processes information, computes, self-organizes and is embedded with consciousness.

several experiments conducted over the last few years contradict the SM. For instance, it has been found that some bosons, quarks, and muons are not behaving as they should have or as expected. The theory appears incomplete and cannot be considered a complete description of nature.

• One of the most significant shortcomings to date is gravity. Pomeroy (2022) laments that SM cannot explain gravity at the microscopic level. Fardaei has described the issue of gravity in detail. He argues that we have been wrong in our belief and understanding of gravity. He says:" Gravity is not an unknown force coming from a mass." (Fardaei, 2018, p.1). Using a quantum mechanical approach, he explains that an internal force within the atom creates gravity and that we should look at the building block of atoms, not anywhere else.

• Another one is the cosmological constant problem (the small but non-zero measured value of the cosmological constant).

• Investigation into the possible existence of dark matter and energy has been inconclusive (Sawangwit and Shanks, 2010; Ascensio and Kroupa, 2023).

• The fine-tuned description of the Higgs boson mass (Riva, 2021).

3. Beyond the Standard Model: The Physics of Information, Computation, Self-Organization and Consciousness

Discussing the SM, Zhang et al. (2023) suspect somehow that there is a new physics beyond the current model and that we should be searching for it. Similarly, Paudel (2021) discussed the problems with the SM and possible solutions to move the theory forward. Lokanga (2022) addressed the need for a new physics in many of his publications, including his last book. Furthermore, in the book The Universe Revealed by Fardaei (2023), one can find several propositions and recommendations regarding atoms' behavior that may advance the field of theoretical physics. For instance, Fardaei argues that atoms are not mechanical entities but rather intelligent and that the intelligence embedded in them runs the universe, thus emphasizing the role of consciousness. It appears now that because of the several shortcomings, many theoretical physicists are calling for an alternative or a new physics that goes beyond the current SM and answers several fundamental unanswered questions.

The author hopes that the new field of the physics of information, computation, self-organization, and consciousness may offer a possible solution. However, despite considerable academic interest in the field, as mentioned above, only limited research exists concerning physics. The new model encompasses the successes and achievements of the SM but takes it a step further. The new field (new physics) is based on the universe's computational, self-organization, and consciousness model (Lokanga, 2017a, 2017b, 2018a, 2020a, 2020b, 2022, 2024). In the following pages, I will discuss the model, starting with the computational model and then the self-organization and consciousness models.

3. 1 The Computational Model

The computational model is a theoretical attempt to build a new physics, or a ToE based on the concept of information and computation (Lloyd, 2006; Wolfram, 2002; Landauer, 1999; Wheeler, 1989; Lokanga, 2017a). Some of the proponents of this model argue that the universe computes and is a self-computing consciousness (Sas, n.d; Lokanga, 2022). First, let me discuss the meaning of two of the most critical aspects of the computational model. These are information and computation.

3.1.1 Information

What is the meaning of information? Information is not self-explanatory. It exists only as a potential and needs a medium to manifest. Also, we know that information can be transmitted or communicated instantaneously, this is because the universe has a holographic structure. The holographic universe theory teaches us that there is no energy transmission between particles or objects during entanglement, but only information is exchanged or shared (Bohm, 1981). As a result, it appears that there is no violation of Einstein's special theory of relativity (Lokanga, 2018, p.127). Furthermore, several researchers argue that the holographic principle shows that the universe fundamentally operates as an information system, with reality holographically encoded ('t Hooft, 2000). Everything in the universe is interconnected through information rather than energy transmission.

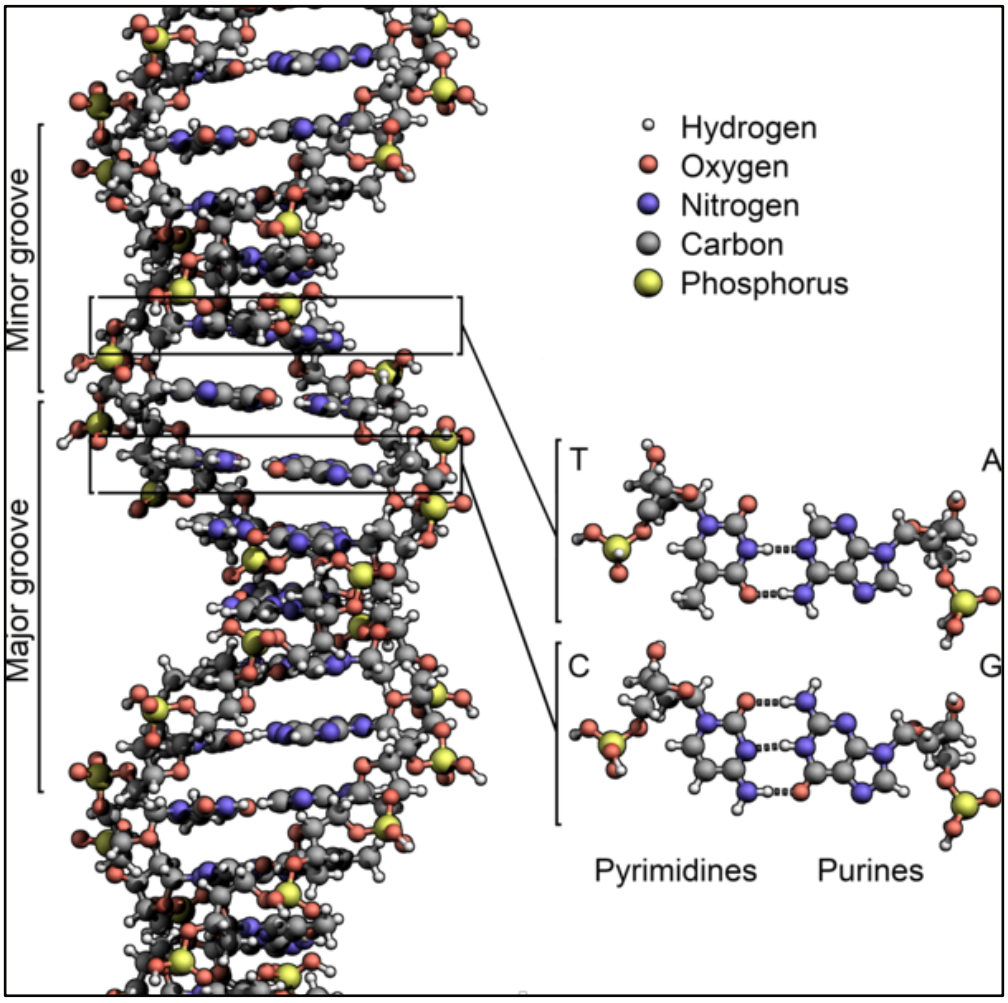


Figure 3.1: The structure of DNA, showing in detail the design of the four bases—adenine, cytosine, guanine, and thymine—and the locations of the major and minor grooves. Image by Zephyris via commons.wikimedia.org/wiki/File:DNA_Structure%2BKey%2BLabelled.png (Creative Commons Attributions Share Alike 3.0 Unported license)

Entangled particles are non-locally connected with their properties and are instantaneously linked regardless of distance or spatial separation (Lokanga, 2018).

For instance, one can get direct information about a physical object's properties, such as a star in the sky or a nearby tree. Amongst several of the definitions, Bates defines information:" as the pattern of organization of matter and energy" (Bates, 2006, p.1033).

There are many types of information, such as biological, physical, chemical, and holographic. Let me discuss the three types of information.

Biological information (Gene): A genetic program found in living organisms - a gene is the fundamental unity of heredity passed from parent to child. Genes are made up of DNA, each chromosome contains many genes, figure 3.1. The biological information is transmitted to our offspring.

Physical information: We have two types of physical information: binary digits (bits) and quantum bits (qubits).

A *bit* stands for binary digit, the smallest unit of computer data. A bit has a single binary value, either zero or one. An example is shown in Figure 3.2. In addition, the growth and knowledge amassed in the technology of digitization over the last ten years or so have seen a significant amount of work done in science, literature, and technology, such as biology, genetics, books, novels, music, film, scientific equations, encapsulated into the basic notation of computation. For instance, how is this information on a CD or DVD represented and encoded? Under the commonly agreed coding scheme, ASCII (American Standard Code for Information

Interchange), each letter or keyboard character is given a seven-bit code word. For instance, the following letters (THE), see table 3.1. correspond to the characters:

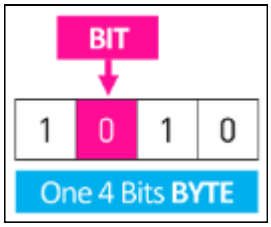


Figure 3.2: Bit. Image by Mike Oakley (2019) via mikeoakley.com/wiki/101-bit-byte-bitdepth/

Characters	Numbers (Bit codeword)
T	1110100
H	1101000
E	1100101

Table 3.1: Characters THE and the bit codeword

A word such as "THE" comprises bits 1110100 1101000 1100101, showing that adding more bits can produce a thousand pages of a book.

A *qubit* stands for a quantum bit. In quantum computing, this is the basic unit of quantum information and is the quantum version of the classical binary bit, as shown in Figure 3.3. Quantum computing is a branch of physics that studies and uses the laws of quantum mechanics to solve problems too complex for classical computers.

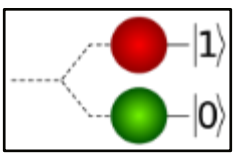


Figure 3.3: A quantum state of a two-level quantum system. Image by Clemens Adolphs (2007) via en.wikipedia.org/wiki/Qubit#/media/File:Simple_qubits.svg (copyright-free).

Chemical information: Chemical information (atomic number) encoded by a structure; for instance, the atomic number of sodium is 11. That means sodium has 11 electrons, 11 protons, and 12 neutrons surrounding it. The nuclear structure of sodium is shown in Figure 3.4.

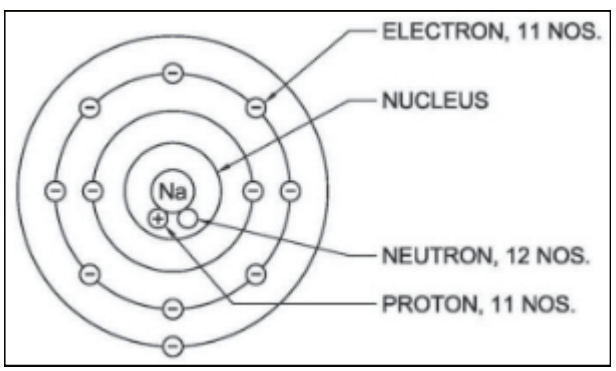


Figure 3.4: Atomic structure of sodium atom. Image by Rajan (2021) via https://www.researchgate.net/figure/Atomic-structure-of-sodium-atom_fig1_349498027 (copyright-free).

3.1.2 Computation

What do I mean by computes? There is some ambiguity in defining the word computation (Akl 2013). There are several definitions. However, to date, several researchers agree that:

- Computing is about processing information.
- Computation is a mathematical calculation that includes both arithmetical and non-arithmetical steps.
- Everything in the universe processes information, which means that it computes. Some examples of computation are illustrated in Table 3.2. These examples demonstrate that the universe is simply an information-processing system programmed to do specific tasks and that natural computers are information-processing systems.

Natural computers	Operations conducted
Plants	Plants' leaves appear to regulate their "breathing" by conducting simple calculations; green plants engage in problem-solving computation. The ongoing computation process appears to take place when tiny holes in leaves open and close. Plants seem to regulate their uptake and loss of gases by what appear to be distributed computations. Chemical reactions in plants help cells perform fundamental computations, such as addition, subtraction, or multiplication (Lokanga, 2017b).
Brain	The brain computes, performs holographic computation, and communicates nonlocally and holographically (Lokanga, 2018a, 2020a, 2020b, 2022).
DNA	Perform replication.
Cells	Perform multiplication.
Particles	Atoms register bits of information. For instance, when two particles collide, each registers information that is transformed and processed. When two atoms combine, they perform and, or, not, or copy operations (Lloyd, 2006).

Table 3.2: Examples of computations. Adapted from Lokanga (2024).

3.1.3 Summary of the Computational Model

The computational model of the universe teaches us that:

- Everything in the universe is made up of atoms but also of information (physical, chemical, or biological).
- Atoms register bits or qubits of information, which is then transformed and processed.
- When atoms combine, they perform several types of operations.
- The universe is the result of information processing.

• The universe computes and is a self-computing system.

• Computation takes place at the smallest spacetime scale.

• The universe is a computational machine or a network of computational processes.

3.2 The Self-Organization Model

Table 3.2 shows several examples where computation and self-organization are taking place at the same time. For instance, when two atoms combine, they can compute, self-organize, and produce a molecule. What is then self-organization?

• Self-organization is the physics of information processing in complex systems.

• Self-organization is the evolution of a system into an organized form without external pressures (Lucas, 1997).

• Information tends to its preferred most probable state" (Gershenson, 2012, p.8).

• Self-organization is achieved in nature through different means. In natural phenomena, such as biological systems and physical systems, information organizes itself.

• Self-organization shows the presence of intelligence, a lower form of consciousness that helps organize everything.

• Consciousness is at the center, though it is often not recognized.

• Information cannot do anything. Apart from its movement, carried by energy, it needs intelligence to organize itself.

3.2.1 Examples of Self-Organization

Snowflakes Figure 3.5 exhibits complex patterns—the result of the chaotic process of supercooled water droplets colliding and freezing as they fall from the sky.

Molecular self-assembly: Shown in figure 3.6 is a chemical process whereby molecules self-organize into a predictable structure without outside control.

Self-organization of atoms: Figure 3.7 shows that atoms can automatically arrange themselves into an orderly row with equal distances between neighbors when trapped between a pair of optical fibers and hit with laser light.

3.3 The Consciousness Model

3.3.1 The views of the founders of quantum theory

I understand that the pioneers of quantum theory gave a central position to consciousness. Unfortunately, because of the theory of evolution and the rise of the Bing Bang theory, many scientists wanted nothing to do with non-material things. I have some reservations about the Bing Bag theory, which has been discussed in some of my publications. The laws must precede the action or the chemical reaction; they must be there before the beginning. Similarly, I have doubts regarding some of the explanations of the theory of evolution in its current form. There are still several unanswered questions. For instance, has the process of evolution stopped in monkeys? Despite several centuries of evolution, the latter cannot build houses, go to school, etc. I should know!

Let me get back to the views of the founders of quantum theory. Some of their perspectives include:

Max Planck: "I regard consciousness as fundamental. I regard matter as derivative from consciousness "(quoted in Sullivan 1931).

In addition, as rightly pointed out by Sunderland (2015):

Von Neumann: "Consciousness, whatever it is, appears to be the only thing in physics that can ultimately cause this collapse or observation."

Eugene Wigner: "It is not possible to formulate the laws of quantum mechanics consistently without reference to the consciousness."

Figure 3.5: Snowflakes. Image by Janeklass (2021) via commons. wikimedia.org/wiki/ File: Snowflake_ (lumehelves).jpg (copyright free)

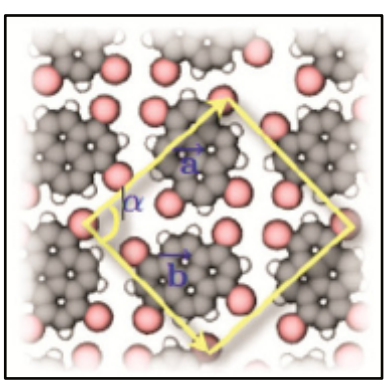


Figure 3.6: STM image of self-assembled Br_4 – pyrene molecules on Au (111). Image by Tuan Anh et al. (2014) via en.wikipedia.org/wiki/ Molecular_self-assembly#/media/File: Br4Py_self-assembly_on_Au_2.jpg (copyright free)

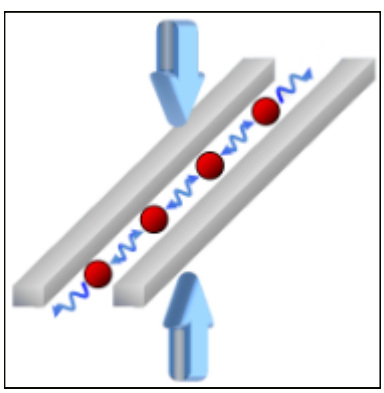


Figure 3.7: Trapped atoms by (Chang, Cirac, and Kimble, 2013) via physics. aps.org/articles/v6/30

3.3.2 What is consciousness?

In my preceding discussion, I mentioned that self-organization shows the presence of intelligence or a lower form of consciousness that helps organize everything in the universe. I mean here that consciousness is the master key, but it is often not recognized or acknowledged. In addition, information in the universe cannot do anything by itself; apart from its movement, which is carried by energy, it needs intelligence to organize itself.

There are several definitions (Lokanga, 2024, p.19). Some of them include:

- "The faculties of mind, intellect, and personality are simply manifestations of consciousness."
- "The non-material part of us is consciousness, soul, or spirit, and the body is simply the means through which consciousness expresses itself and experiences the world."
- "Spirit, consciousness, inner self, anima/animus, life energy, essence, or "I" are mostly synonyms for the word soul."
- "Consciousness operates throughout the body. It is not the physical body responsible for our actions but the consciousness or thinking that forms the body's operating system."
- "It is I, the self, or the soul. The soul uses the word "I" for itself and "my" when referring to the body: my hand, my mouth, my brain, and so on. I am different from my body."

3.3.3 Types of Consciousness

Ullman (1999) argues that there are two types of consciousness: waking and sleeping. These two forms of consciousness are found in human beings and other entities, such as animals, who experience them differently.

Waking consciousness is associated with being awake, which means that consciousness is active when we are awake and that throughout the day, our level of awareness varies depending on what we are doing. During the day, we are aware of our surrounding environment.

During sleep, our sleeping consciousness can see, hear, and move. That is why, in a dream, there is no need for a physical body. Furthermore, we can perceive without a brain and move around without our physical body. Therefore, consciousness is a multidimensional, timeless entity with access to the present, past, and future simultaneously.

3.3.4 Properties of Consciousness

Several scholars have discussed several properties in various publications. Among the few:

- Africans posit that consciousness is a creative force that shapes the universe or nature (Lokanga, 2022).
- Consciousness is everywhere – a field that extends through all of space (Matloff, 2017).
- Consciousness is an independent entity capable of living outside the body (Froböse, 2014).
- Creates time or the perception we call time.
- Moves from one body to a new one at the time of death.
- Can see, hear, and feel.
- Consciousness is not restricted by spacetime.
- Immune to pressure, temperature, or any other external conditions, etc.

I have discussed the four combined models that form a coherent model of the new physics. It is now time to summarise and conclude with suggestions regarding the way forward.

4. Conclusion

We have learned from the SM that everything in the universe is composed of atoms; in turn, atoms are composed of protons and neutrons made of elementary particles called quarks, etc. But we now know from the physics of information, computation, self-organization, and consciousness that the universe comprises information beneath the particles. It computes (process), self-organizes itself and is embedded with consciousness. It behaves like an intelligent, self-computing consciousness. One of the outstanding issues is what matter, or the universe, is made of. We learn from information, computation, self-organization, and consciousness that an atom also comprises information, computes, self-organizes and behaves as an intelligent entity. To solve several of the issues surrounding the SM of physics, we should embrace and incorporate the new physics, change our approach to the overwhelming mechanical and materialistic view of the universe and think of an atom as an intelligent entity that processes information, computes, self-organizes and is embedded with consciousness. The writer believes that this is one of the approaches we should use to solve the many outstanding issues in physics and the quest for the theory of everything.

The article, complete with all its references, is published on theneohumanist.com

Dr. Ediho Lokanga is a theoretical physicist from the Democratic Republic of the Congo. He is the best-selling author of two books: Digital Physics: The Meaning of the Holographic Universe and its Implications Beyond Theoretical Physics and Digital Physics: Consciousness is Primary. Currently, he teaches physics at Oncampus Aston, Birmingham, UK.

Beyond Things That Matter

An essay reviewing Iain McGilchrist's *The Matter With Things* comparing it with P. R. Sarkar's biopsychology, neohumanism and spiritual philosophy

Dr. Sid Jordan

Introduction

This review of *The Matter With Things: Our Brains, Our Delusions and the Unmaking of the World* will contrast and compare the views of Iain McGilchrist and P. R. Sarkar concerning the truth, biopsychology, consciousness, nature, morality, spirituality, and social philosophy. A primary question to be answered is how both approach the "what" and "how" to save humanity from the grasp of materialism. Iain McGilchrist, a psychiatrist with a background as a neuroscientist, researcher, philosopher and literary scholar offers his bipartite brain hypothesis that the current threat to human society and its relationship with "Nature" is a dominating, materialist-minded "emissary "of a left hemisphere of the brain that denies the values of the intuitive-minded "Master", the right hemisphere of the brain. Prabhat Rainjan Sarkar, spiritual leader (known as Shrii Shrii Anandamurti), philosopher, scientist and social philosopher, offers contrasting view of spirituality and social philosophies that embrace a similar anti-materialistic view of the "what" ails society but offers an alternative view of "how" to escape the dilemma of materialism in his spiritual practices and social philosophy of Neohumanism. This comparison of McGilchrist and Sarkar will hopefully have heuristic value to promote further scientific investigation into the bipartite theory of McGilchrist's bipartite theory of the right and left brain and Sarkar's bipartite theory of the right and left pituitary gland.

McGlichrist presents a rather dystopian view towards the end of the book: "I believe that without an overarching understanding of the 'All' of which we are a part, however tentative and incomplete it must necessarily be, we are bound to go on acting in such a way that we lose everything we value – or all that, when in our right minds, we value. The left hemisphere has dismantled the universe and is unable to put it back together again. Without a radically different understanding we just can't carry on. That is why I have written this book." (McGilchrist, 2021 p 2051) He counters this pessimism with, "What is wonderful about us is not our pitiful lust for power, our self-absorption and our armour-plated invulnerability, but precisely our capacity to be vulnerable, to wonder, and to love: which alone makes what we most value possible." (McGilchrist 2021 p 2054).

He offers that the restoration of these values is dependent on the right hemisphere of the brain's intuitive and holistic perspective of the 'All' remaining the Master of the left hemisphere. His approach to the "what" and "how" of this salvation of the human society that he supports, as best I can discern, is the restoration of the "truth" as involving a "process", not "things", that involves relationships; "matter" as an emanation from "consciousness". In answer to "who are we?" he poetically paints a picture of humans as "beings that emerge out of the original consciousness, eddies in a seamless flow that embraces everything that is and was and will be." (McGilchrist 2021 p 2054). He, like P. R. Sarkar, perceives a free will that chooses between embracing a short-sighted and impulsive egoistic left hemisphere's materialism or the right brain's intuitive and benevolent universalism.

Dr. Sid Jordan, clinical psychologist and meditation teacher

McGilchrist draws a parallel between the materialist tendencies of modernity to the findings of left-brain dominance in schizophrenia: "In schizophrenia, as in modernity, there is a relentless antagonism towards nature – both in humanity and in the whole natural world… all tending to the view that we are machines." (McGilchrist 2021 p 523) He questions this notion with, "Might it be, then, that as a culture we were exemplifying not, of course, a sudden epidemic of schizophrenia, but too heavy a reliance on the world as delivered to us by the left hemisphere, meanwhile dismissing what it is that the right hemisphere knows and could help us understand?" (McGilchrist 2021 p 464)

Supporting his bipartite theory of the brain he quotes Roger Sperry, Nobel Prize winner for neurology of the bipartite human brain, "What it comes down to is that modern society discriminates against the right hemisphere. Any attempt to directly attack the overt symptoms of our global condition – pollution, poverty, aggression, overpopulation, and so on – can hardly succeed until the requisite changes are first achieved in the underlying human values involved. Once the subjective value factor has been adjusted, corrections will follow readily in the more concrete features of the system." (McGlichrist 2021 p 2056-2057)

Part I of the book goes into detail of how right hemisphere deficit syndromes are more impactful than left hemisphere deficit syndromes for most human experiences. McGilchirst states, "The left hemisphere is, compared with the right hemisphere, unreliable in just about every way that matters. In terms of attention to the world, and its role in thereby constructing, and understanding, experience; in its inability to comprehend time, space and motion; in its lack of skill in conveying and interpreting emotion; in its (lack of a) sense of the body as a living inseparable part of the self; in the comparative weakness of its faculties for direct perception, for the evaluation of beliefs and for making judgments; and indeed in terms of its lesser intelligence (which means understanding): in all of these it is more vulnerable to falsehood, more likely to deceive us, than the right." (McGilchrist 2021 p 555)

This review will deal with contrasting and comparing how McGilchrist and Sarkar approach moral and ethical values of the "truth" in Part II. The major portion of the review will involve contrasting their views on the role of consciousness in levels of the mind and our relationship with the world of matter, nature and the ephemeral "sacred" in Part III.

We begin with exploring how both men dedicate themselves to establishing a fundamental "ground" of what is "true reality". While both embrace love and relatedness as essential ingredients of the truth, Sarkar emphasizes unity with a Supreme Consciousness as an aspect of the "ultimate truth" for everyone. However, they both adopt a needed balance between individual and collective truths to insure a common welfare.

Truth: Benevolent Relatedness to Self and Others

Regarding the etymology of the word "truth" McGilchrist offers, "The Latin word *verum* (true) is cognate with a Sanskrit word meaning to choose or believe, like one's loved one, the one in whom one chooses to believe and place one's trust, to whom one is true". (McGlichrist 2021 p 576)

He offers three fundamental questions as a path to a truer account of our shared reality. His account of the first question, "What is the true reality?", contrasts how the right hemisphere grasps the truth by, "Rather than conceiving it as a thing, it would experience it as a process, one that, in this case – not just for now, but in principle – has no ending. More importantly, it would see that truth is a relationship." (McGilchrist 2021p 573)

For the second question, "What account of reality emerges?", he posits, "It is a world in which relationships are ontologically primary, foundational; and 'things' are secondary, emergent property of relationships. It is one where matter is an aspect of consciousness, not consciousness an emanation from matter." (McGilchrist 2021 p 2052)

To the third question, "Who are we?", he offers this poetic description, "We are temporarily material entities, capable, we do not know how or why, not just of awe before creation, but of playing a part in creation itself; beings that emerge out of the original consciousness, eddies in a seamless flow that embraces everything that is and was and will be; for a while distinct, but never wholly separate from the flow, since we are for a while that flow, wherever it finds itself. (McGilchrist 2021 p 2054)

Sarkar's notion of a bipartite pituitary raises the question of whether he is referring to a bipartite brain division or bipartite glandular plexus involving the right and left pituitary gland.

For Sarkar (1996, p 15) the truth is known in part as *satya*, "action of the mind and the use of speech in the spirit of welfare for all." Like McGilchrist the "truth" is relational and benevolent.

Sarkar and McGilchrist take a different perspective on the support of truth and moral values. McGilchrist finds that the efforts of religion to maintain some semblance of moral values has been too readily shunned by modernism. He says, "When our society generally held with religion, we might indeed have committed many of the same wrongs; but power-seeking, selfishness, self-promotion, narcissism and entitlement, neglect of duty, dishonesty, ruthlessness, greed, and lust were never condoned or actively and openly encouraged – even admired – in the way they sometimes are now. In other words, we have lost all shame. And that can't help but make a difference to how we behave." (McGilchrist 2021 p 2000) Sarkar sees religions as purveyors of dogma that has led to many wars and social divisions. Sarkar calls these social divisions "socio-sentiments" that have been promoted by religious differences. (P. R. Sarkar, 1982)

In place of a morality that is infiltrated by dogmas of "never do this", "always do that" Sarkar supports a universal ethics called Yama and Niyama that is based on time, place and person. The first of five principles of Yama, how to relate to others (animate and inanimate entities), Satya, "truthfulness", Ahimsa, "non-harmfulness" does not preclude the use of force if necessary to protect the common welfare. Other elements of Yama include asteya, non-stealing, not taking something that belongs to others, and Brahmacarya, move towards a state of oneness with Cosmic Consciousness and fifth, aparigraha, to live simply, taking only what is needed individually and collectively. (Sarkar 1996)

The second set of five principles, called Niyama, for self-regulation to maintain inner harmony involves first principle of shaoca, purity of mind and body, again to serve to common welfare; Santosa, related to maintaining contentment but also relates to the experience of joy and awe, mentioned by McGilchrist; Tapah, willingness to undergo hardship to serve others needing help; svadhyaya, to have an understanding of spiritual literature and great books and the fifth principle, Iishvara Pranidhana, to meditate on and become one with Cosmic Consciousness. (Sarkar 1996)

As with yama and niyama, McGilchrist offers a balanced application of moral judgement that supports the coordinated cooperation of the individual and society, "Thus a good society is not one in which individuality is lost, but one in which it is fulfilled; yet, at the same time, that individuality must not be a threat to the cohesion of the society. There is such a thing as tyranny of individuals over society, as well as society over individuals." (McGilchrist 2021 p588)) Sarkar confirms this point of view with, "One must not forget that collective welfare lies in individuals and individual welfare lies in collectivity." (Sarkar 1992 p 8)

Regarding a foundational truth both men agree on the basic "ground of being" or that consciousness precedes matter in the ontology of the universe. This preeminence of consciousness is grounded again in a process of interconnected relatedness that is omnipresent. In the next section we will also deal with the limits of the brain as the sole arbiter of consciousness and the preeminence of Supreme Consciousness as the final goal on the journey of levels of the mind.

Consciousness: Foundation of Reality

Ian McGilchrist's exploration of consciousness is deeply informed by his background as a psychiatrist and neuroscience researcher and added to greatly by his background as a philosopher and literary scholar. He leads with the stance "that consciousness precedes matter is an idea that has an ancient lineage, and more than a little, I shall suggest, going for it. Matter could be born of consciousness without either being the same as, or wholly distinct from, the other. And if true, a form of asymmetry familiar to the readers of this book would operate, mind and matter being aspects of the same thing, but that not of itself making them equal." (McGilchrist 2021 p 1619)

McGilchrist reflects on the limits of the brain: "I do not suggest that the brain originates anything. I do not know that the brain 'causes' consciousness: it might or might not. For example, it might transduce, or otherwise mediate, consciousness." (McGilchrist 2021 p 56) These limits make room for what might be referred to as the "bodymind", a term offered by Candace Pert the author of *Molecules of Emotions: The Science Behind Mind-Body Medicine* (Pert 1997). Her extensive research as a neuroscientist and

An element of 'control' or inhibitory actions implied by the right and left wings seems to be central to achieving balance and apexed intellect.

pharmacologist on neuropeptides asserts that the mind's activity is not confined to the brain but replicated throughout the neurohormonal system of the body; thus she coined the term, "Bodymind". She states that the polypeptides of the neuroendocrine system function just as the neurons of the brain and bring into our awareness the emotions expressed in the bodymind thereby avoiding the Cartesian body and mind duality. These neurotransmitters called peptides carry emotional messages throughout the body and brain. Emotional expressions could begin with thoughts associated with the brain or the body's reflex glandular response that interacts with the autonomic nervous system operating at first beyond conscious awareness but coming into awareness. These alternative origins of emotion are coupled with the brain/glandular response, mediated by the hypothalamus and the pituitary gland, another flow state of "betweenness" that McGilcrist supports.

Sarkar (aka Anandamurti) expands this bodymind model with his "Biopsychology", a science of intuition and yoga that includes five levels of the mind associated with the first five of seven cakras. (Anandamurti, 1968) He defines a cakra as a plexus of subglands. From some of the endocrine glands identified by the author we can postulate that the eight classical endocrine glands identified here are related to what Anandamurti identifies with plexi of glands located vertically along the spine from the muladhara cakra (Kamamaya/conscious mind) at the base of the spine ascending to the sahasrara cakra (beyond qualities/things) associated with the pineal gland. Ascending from the cakra at the base of the spine is the svadhisthana cakra (Manomaya/subconscious mind) associated with the prostate gland and the ovaries; the manipura cakra (Atimanas/supramental mind) associated with the adrenal gland and pancreas; the anahata, cakra, (vijinanamaya/subliminal mind) associated with the thymus gland; vishuddha cakra (hiranmaya/subtle causal mind) associated with the thyroid and parathyroid glands and just below the crown cakra the ajina, cakra, associated with the pituitary gland. (2013 p 107-112) Anandamurti states, "The main controlling station of the citta and mind is located in the sixth plexus – the pituitary plexus (ájiṇá cakra).. .The right petal (the acoustic root of which is Ha) controls the…propensity of extroversiality of the human mind. In this it is assisted by the right subtle

nerve current (the piuṇgalá), which primarily controls the left portion of the body and secondarily the right portion. The left petal of pituitary plexus (whose acoustic root is kśa) controls the force of spiritual inclination." (1968) These descriptions of the cakras and subtle nerves are of a psycho-spiritual nature combining the western science of neuroanatomy/endocrinology and eastern metaphysics.

This collection of subglands at these cakras, the known endocrine glands and some glands yet to be discovered by science, are associated with fifty sounds that constitute the Sanskrit alphabet. These root sounds are like a symphony that regulate our internal and external balance with the world and our deeper contact with our inner-most selves. This deeper self-knowledge is developed by the practices of meditation, asanas (yoga postures) and a sentient, holistic lifestyle, the goal of which is to become self-realized by attaining unity with Supreme Consciousness.

Sarkar further defines this process of self-realization as "If, by dint of sadhana (spiritual practice), a person can elevate his or her unit existence (consciousness) and bring the crude, or conscious mind to the level of the subtle, or subconscious mind, and thereafter, going even higher, elevate the subtle or subconscious mind to the level of the causal, or unconscious mind,…This experience or realization in the path of sádhaná comprises a state similar to the stance of the supreme attainment of intuition. In this supreme state all mind, all consciousness, is merged in the Supreme Cognitive Force. They become one. This state is the supreme attainment, the supreme stage, or unbounded consciousness." (Anandamurti 1985, Discourse 11)

Sarkar's notion of a bipartite pituitary raises the question of whether he is referring to a bipartite brain division or bipartite glandular plexus involving the right and left pituitary gland. He states the locations and functions as: "The lunar plexus, or ájiṇá cakra: 1.aparâ [mundane knowledge] kśa, 2. parâ [spiritual knowledge] ha…the area between the two end points of the eyes is the area of the lunar plexus. Persuing Sarkar's division of the right and left functions of the pituitary he designates, "That the right wing of the pituitary plexus controls the qualities, attributions and quanta of the leftistic propensities.which have degenerating and depraving effect, such as shyness, shamefulness, melancholia and fear which are associated with the manipura cakra (lower body). The left wing of the pituitary controls the rightistic propensities, attributions and quanta associated with the above the ajina cakra (upper body) which pave the way to supra-consciousness…When both sides of the pituitary plexus are fully developed and fully utilized, one attains apexed intellect." (Anandamurti, 2013, p 123) He stated, "Hence, this is a completely new science." (2013, p 145)

This element of "control" or inhibitory actions implied by the right and left wings seems to be central to achieving this balance and apexed intellect. This is a similar notion to McGilchirst's notion of the right brain being the "master" of the left brain "emissary" but that the right brain is paradoxically and secondarily dependent on the functions of the left brain. McGilchirst confirms that there are more inhibitory nerve networks in the brain than facilitating nerve networks that would account for balance and control of expression of propensities that involve thought, emotion and action. He goes so far as to say, "The inhibitory action of the corpus callosum enables the human condition. Delimitation is what makes something exist..(p 1250) and adds 'balance needs to be constantly disturbed and restored. Symmetry-breaking is everywhere in living organisms; it may be argued that all qualitative cellular transitions and cellular decision-making are forms of symmetry-breaking, and it is indeed 'fundamental to every physiological process." (McGilchrist 1282) As with the needed balance suggested by both authors the left side of the brain/pituitary gland, the "ego", needs to be the servant of the "intuition" on the right side brain/pituitary gland. It is interesting that Sarkar's biparitite theory of the right and left pituitary is focused on the pituitary gland that is considered the "master gland" of the neuro-endocirne system in contrast to McGilchrist's right brain as the "master" of the left brain. This idea of opposite poles balancing one another to achieve wholeness is echoed in Anandamurti's sutra that states, "Obstacles are the helping forces that establish one in the goal." (Anandamurti 1967)

It is noteworthy that Sarkar's biopsychological model of levels of the mind describes the spiritual and intuitive knowledge as associated with the right side of the pituitary, whereas the the left side of the pituitary, deals with the world of things or worldly knowledge. This bipartite pituitary theory of Sarkar parallels McGilchrist's bipartite theory of the brain regarding the right side of the brain containing the intuitive holistic perspective, while the left brain deals with the limited view of "things". However, McGlichrist opines, that the brain may not "originate anything" or "cause consciousness" but that it might "transduce or mediate" consciousness. Sarkar's model of biopsychology as a science of intuition and yoga offers an expansion on the bipartite model of the brain offered by McGilchrist that includes the neuroendocrine system mediated by the two hemispheres of the brain.

McGilchrist unites in himself the scientist and philosopher to join those who aspire to combine a subjective psychology and objective science.

It is understandable that modern science would begin its research on the well-developed brains of mammals as the "command center" of a machine model of awareness and the obvious "pathway to perception". However, the ancient Tantric science of intuition and yoga (union), estimated to be seven thousand years old, without the benefit of modern scientific technology began to fathom, through meditation, a metaphysical model of cakras and primordial sounds emanating from the body that became the Sanskrit alphabet of 50 sounds associated with the seven cakras. (2013, Chapter 19) Sarkar combined this Eastern mysticism with Western neuroscience science to offer a model of biopsychology that needs careful study that combines the arts, humanities and modern science. I think that Sarkar and McGilchrist would resonate with the science of sound and the neuroendocrine system being worthy ingredients to be included in a synthetic science of the mind.

The next section affirms the authors views on the ontology of consciousness and matter while differentiating qualities associated with matter and human consciousness in the objective and subjective realms.

Consciousness and Matter

McGilchrist states that when he uses the word consciousness, "I refer very broadly to all that we might call 'the experiential'. This covers all the activities that go on, for each of us, as we say, unconsciously and preconsciously, as well as consciously; but could not go on without what is conventionally referred to as subjectivity, or inwardness, of some kind." (McGilchrist 2021 p 1597) Later in the text he continues, "I would say that matter appears to be an element within consciousness that provides the necessary resistance for creation; and with that, inevitably, for individuality to arise" (McGilchrist 2021 p 1612) To repeat his comment for emphasis "that consciousness precedes matter is an idea that has an ancient lineage, and more than a little, I shall suggest, going for it. Matter could be born of consciousness without either being the same as, or wholly distinct from, the other." (McGilchrist 2021 p 1619) He quotes Max Planck who was asked whether he thought consciousness could be explained in terms of matter and its laws. "No, he replied. 'I regard consciousness as fundamental. I regard matter as derivative from consciousness." (McGlichrist 2021 p 1620)

Sarkar refers to "unbounded consciousness" to connote the universal application of consciousness to all, not separating it from matter but seeing consciousness as the fundamental ground that precedes and encompasses matter. McGilchrist quires whether matter and consciousness are the "same" or "distinct" from one another. Sarkar would simply say matter and consciousness are "associated". Regarding the quality of this consciousness Sarkar says, "When the knowership of the Cognitive Faculty remains associated with matter, that is to say, when it remains associated in such a way that there is no realization of existence, nor the capacity for doership or active experience, then that state of matter we call crude matter. The manifestation of consciousness…is greatest where the sense of existence is most pronounced. For this reason, human beings are considered the most developed beings". (Anandamurti 1985, Discourse 4)

Regarding the relationship of the subjective mind and objective mind Sarkar maintains that "In fact, you never come in physical contact with anything. Your contact with everything is through your mind, through your nerve fibres, through your nerve cells, and your entire objective mind. When you feel you see, it is an internal projection with the help of your nerves…… The subjectivated mind is the witnessing counterpart of the objectivated mind and may take its object both from the external physical world and the internal psychic world. It may create an object within itself…… In other words, all the objectivities of the world together are the object of the Supreme Subjectivity.

Sarkar shares a similar view to McGlilchrist that, "All so-called materialistic ideologies have devastating effects on human beings. Where the object of adoration is matter, as in the case of materialism, the mind will certainly become matter, and when the mind takes the form of matter a vacuum is created in its place. Thus the very existence of human beings is converted into matter." (Sarkar 1988)

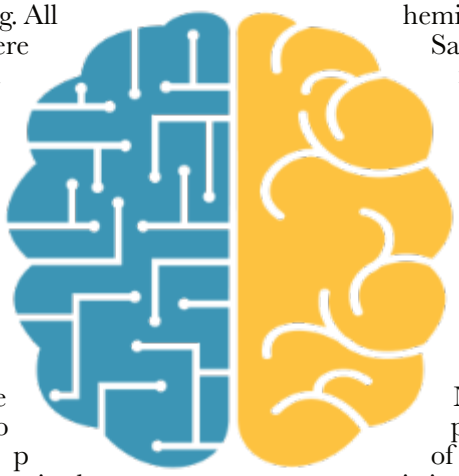
The next section explores the expansion of the human identity to include nature's animate and inanimate world. Both authors explore the primacy

of love and devotion as primary for the human experience of unity with the natural world of people and nature. Sarkar offers Neohumanism, the love of all creation, as an expansion of humanism and offers an "awakened conscience" as a path of social equality and oneness with Supreme Consciousness.

Consciousness and the Natural World

McGilchrist and Sarkar both express a universal love of all of nature which includes the cosmos of all entities. McGilchrist expresses this sentiment as, "Any love, goodness and beauty we can bring come out of Nature and out of the cosmos in the first place: where else can they possibly come from?" (McGilchrist 2021 p 1846) Whereas Sarkar states, "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." (Sarkar 1982 p 7)

McGilchrist cautions," Nature, that we are reviling and doing our best to devastate – is the great whole to which we belong. All the elements of the left hemisphere insurrection can, individually and together, be seen as an attack on Nature – and, with it, on the body; and hence on life itself." (McGilchrist 2021 p 2048)



Regarding love or the devotional sentiment McGlichrist says, "In relation to the divine, unlike spacetime, there is also a realm of spiritual gnosis that does not apply to physics, since God is far more accessible to heart and soul than to intellect." (McGilchrist 2021 p 1865) Neohumanism's heart inspired universalism, according to Sarkar, helps transform geo-sentiments regarding place, socio-sentiments related to groups and human sentiments that deny the devotional love of all of creation. (Sarkar 1982 p 7)

Sarkar's Neohumanism offers a path of liberation of the intellect from the shackles of sentiments related to identification with place, groups and narrow human values which fail to promote social equality. This review does not lend itself to an extensive review of the many strategies for overcoming these narrow sentiments that can be approached by a careful reading of the book, *Neohumanism: Liberation of the Intellect*. (1982) Here we will look at the method of "Awakened Conscience" (Sarkar 1982, p 69) offered by this Neohumanist text as an approach to the study of actions and goals that serves the general welfare of all beings.

This awakened conscience approach begins with a synthetic or Gestalt-like, systems approach of the study of whether suggested solutions serve the general welfare. Each suggested action and alternatives (the parts) are questioned as to whether the source of information (pros and cons) supporting these actions collectively (as a whole) reflects the truth as intuitively weighed against the ethical principles alluded to earlier as Yama and Niyama. The final arbiter in this process of awakened conscience is the intuition of an individual or group decision as to what serves the general welfare that balances individual and collective welfare.

According to Sarkar (1982 Discourse 11) the evolution of the expression of Neohumanism happens in the three stages. The first stage of "practice" involves the application of the spiritual practices similar to yoga and intuitional science, grounded in a universal ethics. Stage two occurs when there is a critical mass in humanity's "collective mind" of what Sarkar and McGlichrist have characterized as shared spiritual and "right hemisphere" values. According to Sarkar this ubiquitous collective mind will bring about a "new era" of spirituality replacing the values and practices of a materialistically oriented society. The final stage of union with the Supreme Consciousness will then be individually self-realized by many who have applied the spiritual practices of these three stages. These stages of Neohumanism involve first a personal practice, then an essence of collective spirit and finally a mission where each individual has a link with the Cosmological Hub and the spirit of optimism in taking action to liberate society and planet.

Consciousness and the Sacred

The final topic deals with the acceptance of the "sacred" meaning of "God". Whether considering McGlichrist's "coordinating principle of the universe" (McGilchrist 2021 p 1865) or Sarkar's "dancing on the bosom of Consciousness" (Sarkar 1956) with a capital "C" both appear to accept an anthem dedicated to God.

McGilchrist suggest that the "placeholder' terms – *logos*, *lǐ*, *tao*, *ṛta*… "suggest a coordinating principle in the universe which is evidenced in order, harmony

and fittingness; a principle that is not only true, but the ultimate source of truth." (McGilchrist 2021, 1865) On parallel Sarkar states, "Those who regard atoms of energy as the initial manifestations of Prakrti (nature) and want to deny the existence of consciousness beyond them, should know that these so-called atoms of energy are indeed dancing on the bosom of Consciousness." On our relationship with God Sarkar states, "Your relationship with God is personal. No one can sever this relationship. It is part of your being, your birthright." (Sarkar 1971)

In a self-revelatory manner McGlichrist refers to his own "religious disposition" as having "resulted from a largely private lifelong exploration of the experience of being alive, guided by meditative reading of the spiritual texts of different cultures, experiencing holy places in different lands, encounters with human beings who seemed to me to be deeply spiritual people, sporadic attendance at rituals of great beauty, a lifelong celebration of art, and poetry, but of music above all; and love; and long communing with the astonishing beauty of the natural world." (McGilchrist 2021 p 1865)

Sarkar and McGilchrist seem to use the words Consciousness and God interchangeably. McGilchrist offers, "What the term 'God' requires of us is not a set of propositions about what cannot be known but a disposition towards what must be recognised as beyond human comprehension." (McGilchrist 2021 p 1866) In sync with his bipartite hypothesis he proclaims, "The right hemisphere is better at accepting uncertainty and limits to knowledge. An understanding of the divine must rely on indirect and metaphorical expression, not direct and literal expression… It involves appreciating a Gestalt, not a construction of parts; entering into an 'I–Thou', not just an 'I–It' relationship," (McGlichrist 2021 p 1873) "It seemed to me that there was something 'beyond', in some sense, that drew me forward; something I had intuitive acquaintance with but could say almost nothing about, except that it seemed both real and beautiful…. In fact it seemed to me that Nature in all her forms, including those we call inanimate, was alive." (McGilchrist 2021 p1879) He concludes, "What underlies and unites all these aspects of experience for me is the conviction of a direct and reciprocal engagement with whatever-it-is that is the ground of Being, and which we call God." (McGilchrist 2021 p 1881)

McGilchrist contends "It is often said that we are experiencing a crisis of meaning. Not coincidentally, far more of us than ever before in the history of the world live divorced from Nature, alienated from the structures and traditions of a stable society, and indifferent to the divine. These three elements have always been what have provided us with an overarching sense of belonging: our relations with the living world, with one another, and with a divine realm." (McGilchrist 2021 p2025) He muses "I have been forcibly struck by the remarkable similarities in the wisdom enshrined in writings coming out of a breadth of traditions – Hindu, Taoist, Buddhist, Christian, Hebrew, Islamic, those of the ancient cultures of North America, or those of ancient Greece – that I have encountered." (McGilchrist 2021 p 2058) To add to these great sources of wisdom we have reviewed elements of Sarkar's inspiring spiritual discourses that weds Eastern mysticism and western science.

In a concluding remark McGilchrist pleads. "It is easy to misunderstand what cultures wiser than ours were trying to express by speaking of God; still easier to reject the idea of God entirely. But easy is not enough. It is our duty to do the more difficult thing: to find out the core of wisdom in this ill-understood, though universal, insight, for that there is such an inestimably valuable core seems to me more credible than anything else I know. (McGilchrist 2021 p 2059)

Conclusion

McGilchrist unites in himself the scientist and philosopher to join those who aspire to combine a subjective psychology and objective science that straddles the divide that exists between scientists and philosophers today. Sarkar has taken a similar path in synthesizing a subjective approach to an objective adjustment in science, spirituality and social philosophy. There is a vast array of leading scientists and philosophers quoted in *The Matter With Things: Our Brains, Our Delusions and the Unmaking of the World* that support McGilchrist's bipartite brain model that moves a reductionist model of science towards the subjective realm that embraces consciousness as foundational to understanding the objective world. McGilchrist and Sarkar, though having traveled different roads as scientist and spiritual leader, have ended up at home with "Consciousness" as the ultimate truth of our shared reality.

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The Role of Ideation in Tantric Meditation

Ladli Prasad Bhargava

The late Professor L.P. Bhargava was a Faculty Member, Tantra Vidyapeeth, Ananda Marga Gurukula

A SERIOUS STUDENT of Tantra must have knowledge of the origin of the Sanskrit alphabet, and of the basic principles of Sanskrit grammar. The entire Tantra literature has two meanings: the exoteric and the esoteric. The former gives us the meaning as designated by words, and the other their inner meaning embedded in the sense as implied by the author. Only by clear under-standing of the philosophy, the spiritual *Sádhaná* will bear fruit. The base of spiritual Sádhaná is *Bháva*, the sentiment, the feeling, the ideation because that alone which has been conceived by the mind, that which has been ideated upon is capable of being manifested. The importance of Bhávaná and its relation to spiritual Sádhaná has been dealt with in *Bhávanopanishad* and a great Tantra scholar and adept (Siddha) Bháskararáya (1690–1785) has written a commentary on it. Without the Bháva spiritual Sádhaná becomes a mechanical exercise which does not bear any fruit. It is said:

Mantrártham nantracaitanyaḿ yonimudrá na vetti yah,
Śatakoťijapenápi tasya vidyá na sidhyati.

"One who does not know the meaning—the esoteric meaning; the underlying sense, the method of awakening the *Mantra*; i.e., activating the Mantra and the *Yonimudra* —cannot realise the fruits of the Mantra even if one recites it a billion times."

The importance of Bháva or *Bhávaná* (ideation) cannot be underestimated by a Sádhaka and therefore to understand it the knowledge of the significance of the Sanskrit alphabet and its origins, and the basic principles of Sanskrit grammar are essential.

The letters of the Sanskrit alphabet are called *akśaráhh*—the immutables. They represent the immutable sound vibrations which are the cause of creation as the manifestation of pure Consciousness. They were produced from the drum of Siva, from the *damru*. They are contained in the 14 sutras called *pratyáhárasútráńi* or *máheshvaráńisútráńi*. These sútras have been attributed to Shiva by Páńini.[1] The order of these alphabets has baffled the greatest of grammarians. From the view point of *Tantra* their order represents the stages of Cosmic Creation; the transformation of subtle Consciousness into crude matter. These original sounds represented by these letters are also called *Mátrkáh*—"the little Mothers". They are called "mothers" because they are the mothers of all Mantras. According to Tantra, the accomplishment of all objectives and the fulfilment of all desires whether mundane (worldly) or supramundane; i.e., pertaining to the world beyond senses, is brought about by Mantras. These Mátrkáh are the source or the origin of all gods and goddesses, which only represent different powers. The study of the relationship between different Mátrkás and their manifestations, and the method of invoking or activating the powers the Mátrkás represent, is the subject matter of *Mantra Shastra*. There are dictionaries of Tantra, called *ekáksariimátrkákośah*, "single-lettered dictionaries",

[1] Páńini, the "first descriptive linguist", "the father of linguistics", lived in India some 2500 years ago.

which give the potentiality of different manifestations of each primary Sanskrit letter.

Most of the literature on Tantra available today is written in classical Sanskrit. Classical Sanskrit strictly follows the grammar of Páńini. As previously mentioned, all Tantra literature has two meanings: the exoteric and the esoteric. Both meanings must be understood by any scholar of Tantra. The latter meaning is especially important to a *Sádhaka*, a spiritual aspirant, initiated in Tantra Sádhaná. For this reason alone some basic rules governing Sanskrit grammar must be known and understood.

The first rule to be remembered is that only those Sanskrit words which qualify to be a *pada* can be used in Sanskrit. Pada is that which has either a verbal termination (*tiñanta*) or a nominal termination (*subanta*).

The second rule to be remembered is that all words including verbal stems, nominal bases, pronouns, indeclinables and adjectives are formed from a verbal root, *dhátu*, by adding a suffix (an affix at the end), *pratyaya*, and sometimes a prefix (an affix added in front), upasarga.

There are about 2000 verbal roots as given by Páńini in his *Dhátupáthah*, that is a list of verbal roots given as an appendix to his grammar called *Ashtádhávi*, so called because it has eight chapters. There are two main types of suffixes: Primary suffixes which are affixed to verbal roots directly to form nominal bases, adjectives, and indeclinables called *krta* suffixes. The other type, the secondary suffixes which are affixed to nominal bases to form special nominal bases, are called *taddhita* affixes. The prefixes which are indeclinables are always affixed in front of a verbal root. They change the meaning of the root and are called *upasarga*. They are 20 in number.

The origin of the Sanskrit alphabet (*varńamala*) is attributed to Shiva, the Supreme Consciousness, while Páńini refers to the verbal roots, suffixes and

Everything in this created Universe is designated by a name and because of the inherent Divine character of the Sanskrit alphabet and the affixes, the relationship between the word and the thing which that word denotes remain permanent, Divine and natural.

prefixes. Páńini refers to them as "original revelations", *ádyocárańam*, confirming their Divine origin. Verbal roots denote a particular action, which is a necessary element of the relative world. The action which a verbal root denotes gives a particular characteristic to it, which is passed on to the word formed by that verbal root.

Similarly, the suffixes give a sense and a relationship of that word with other relative factors. Because of the Divine character of the verbal roots and their affixes, the characteristics and the sense are embedded in that word. Everything in this created Universe is designated by a name and because of the inherent Divine character of the Sanskrit alphabet and the affixes, the relationship between the word and the thing which that word denotes remain permanent, Divine and natural. This is the foundation of Mantra Shastra.

Thus, the characteristics attributed to that word and inherent in it, represent the Dharma of the thing designated by that word. This not only helps in manifestation but also in ideation during Sádhaná.

The substance of philosophy of Ánanda Márga, propunded by Shrii Shrii Ánandamúrtiji, is contained in his work *Ánanda Sútram*. This work is composed by 85 Sanskrit aphorisms in five chapters. Shrii Shrii Ánandamúrtiji's choice of writing his treatise in Sútra form has further enriched the Sútra literature. To mention a few, we have Patanjali's *Yogasútras*, Páńini's *Ashtádhyáyii*, Nárada's *Bhakti Sútra*, Jamini's *Vaisheśika Sútra*, and the famous *Brahma Sútra*.

The first four chapters of Ánanda Sútram exclusively deal with spiritual philosophy and the last chapter with his socio-economic philosophy Progressive Utilisation Theory (PROUT), *pragatishiila upayoga tattva*. Shrii Shrii Ánandamúrtiji was a Tantric Guru, so his philosophy is based on Yoga and Tantra. He was not only a *Śiddha* but was the embodiment of Shiva, Cosmic Consciousness of the modern age. His own commentary on his work is in Bengali, which has already been translated into many languages of the world. It was translated by me into Sanskrit long time back but it has not been published so far.

Shrii Shrii Ánandamúrtiji gave numerous discourses to expound his philosophy all over the world. From his discourses it can be seen that he quoted extensively from Sanskrit literature, and always gave etymology of important Sanskrit words. In this way it was clear that for any Sádhaka or any student of Tantra, a knowledge of Sanskrit was necessary, and that the analysis of Sanskrit words by giving its etymology was an integral part of Sádhaná.

The significance of this fact in reading his discourses has perhaps not been given the importance it deserves. Sanskrit words cannot be accurately translated by single English words or in any other language. Each Sanskrit word has its own individual characteristic or Dharma. Its own ideogram is totally different from the ideogram of a similar word. To take an example: one word for "world" is *Jagat*, which is formed from the verbal root *gam*, "to go" and by the addition of the suffix *kvip*. This forms an adjective meaning that which is "moving". And as a noun it has been used for the "world," "sun," "wind," etc. That is to say that the entity which is connected or designated by the word jagat must have the particular attribute of "motion". In other words, when we use the word Jagat for the world, we are emphasising its characteristic of movement. Another word for the world is *Lokah*. This word is formed by the verbal root *lok* meaning 'to see" with the addition of the suffix *ghain*, implying that the world is limited as an object of the sense. Sanskrit is a very sophisticated language. In fact, it is a science fit only for scholars and true spiritual aspirants. There are more than 500 roots in Sanskrit signifying "motion" and as already mentioned each one of them has its own individual characteristic.

Excerpted from the foreword to Ananda Sutram Word-Index, *Gurukula Publications, Anandanagar, WB, India, 1991.*

Ideation and Meditation

Shrii Shrii Anandamurti

With spiritual progress the mind grows in magnitude, the mind increases its periphery, until it finally merges in the Supreme Entity. During the course of this progress a spiritual aspirant will develop many faculties or attributes, but one must always be vigilant that these faculties do not divert one from the chosen path, from the cherished goal.

What is the meaning of faculty and thinking? Faculty means a special type of quality or attribute that separates one entity from other entities. Thinking is the subjectivisation of external objectivity; that is, creating an external object within one's mental plate and making it a part of one's inner existence.

Thinking should be done in a methodical style. For example, try to imagine an elephant of Indian or African variety. To think of this one should start from the tail end and visualise all the parts of the elephant's body systematically. If the tusk is there, it must be male. If the cranium is small, with a bulky body, it is of African variety. If the cranium is big and the body is less bulky, then it is the Indian variety. Thinking as per a method is called "methodical thinking".

Knowledge should be imparted in this methodical way. It should not be imparted in a galloping style, because the gaps created by imparting education in such a manner will destroy intellectual continuity.

Now, what is the meaning of "discover", of "invention", and of "remember"? "Discover": "dis" + "cover"; "dis" means "against", "anti" or "not". So "discover" refers to that which exists but is not known to us. "Discover" means "removing the cover and knowing what was there but not known". For example, Vasco da Gama discovered the Cape of Good Hope while in search of India and the "land of coconuts", or Kerala – South India. "Invention": "in" (prefix) – "vent" (root verb) + "ion" (suffix). It means "to find out something which did not exist earlier, and then know it"; for example, saccharine. "Remember": "re" + "member". "Member" means "in existence". Are you a member of the Gym Club? It means you are in existence with the Gym Club. "Remember" means "to bring back what was in existence under dark cover". When the dark curtain is removed, one remembers. Remembering involves removing other pabula, diminishing the mass of appearances.

Concentrated thinking is called "meditation". How can one develop concentrated thinking? Suppose you want to visualise what Mr. S is doing in the city of Berlin. How is this meditation to be practised? It concerns something physical and multi-coloured, so one starts with the vishuddha cakra, which controls the idea of colour. Then one is to visualise the glands and sub-glands: the Brhaspati Granthi (thyroid gland) and the Brhaspati Upagranthi (parathyroid gland). This is the first phase. Then come to the *kúrma nádii*, sinusoid nerve, and finally to the controlling brain cell. This is the process of withdrawal or pratyáhára. Then visualise the panorama, the sound, the colour, and focus on the object of meditation. This is the inner secret. In order to visualise odour, we should start from the *múládhára cakra*. If it is uni-odour, it will take less time; in case of a multi-odour object, it will take a bit more time. In this way, one is to withdraw the mind and bring it to the particular brain cell inside the skull. It is necessary to know the biology of the human structure. But spiritual aspirants will not attach any importance to occult powers. It is not their goal. They will only attach importance to the Supreme Entity.

In spiritual parlance, when the mental flow is directed towards the goal, that is, the Supreme Entity, it is called concentration, but in metaphysical terms, it is a concept of dharma.

Every cell has a controlling point. The controlling point of all the controlling points of all the cells is the Guru cakra – the common controlling point. The sahasrára cakra is the psychological name and the Guru cakra is the physical name. The *sahasrára cakra* has no corporal structure. Its spiritual location is on the outer portion of the cranium, the point is called *Brahmarandhra*. The *Guru cakra* is just inside the cranium and is the controlling point of all the controlling points of all the brain cells on the physical, psychic and spiritual planes. In the Guru cakra lies the supreme potentiality of omniscience. Knowing the Supreme Entity means knowing the secrets of all the cells. The lower functions of the blended mind and spirit can be controlled even by elevated magicians, but the upper portion is beyond their power. In the upper portion of the blended mind, higher intellectuality merges with spirituality.

Now, what is the difference between deep thinking and meditation? You already know what deep thinking is. (Deep thinking is thinking deeply about any subject.) Meditation is trying to make the "I" feeling coincide with the subjectivated form. Because it is a coincidence of "I" feeling, it is concentrated thinking. In other words, the endeavour to make the controlling point of the "I" feeling coincide with some other subjectivated form is called meditation.

Mental flow is concerned with both theory and practice. When the unit mind is established in psycho-spiritual parallelism, it is called "idea", while the psychic conception of psycho-spiritual parallelism is called "ideology". When idea maintains adjustment with the glands and sub-glands, it is called "ideation". But to effect psycho-spiritual parallelism, knowledge, action and devotion are required. In spiritual parlance, when the mental flow is directed towards the goal, that is, the Supreme Entity, it is called "concentration", but in metaphysical terms, it is a concept of *dharma*.

Concentrated thinking leads to the development of positive ideas and occult powers in the process of constant mental flow towards the goal. In the process of meditation the following things are involved – brain cells, apexed or pinnacled psychology, concentrated thinking, Guru cakra and ultimate devotion. All these are utilized in *dhyána yoga*, meditational yoga, which ultimately ensconces the spiritual aspirant in complete omniscience: *Rtambhará tatra prajiṇá*, "The intellect at that stage becomes omniscient".

Some form or other of ideology is to be related to meditation, whereas ideation is connected with the plexi, glands and sub-glands, and with a clear-cut idea. For ideation the base is idea, but for meditation the base is ideology.

Tarka – vimarsha – viveka. Suppose there are two opposing ideas. The initial idea is tarka and the opposing idea is vimarsha. These two will produce a resultant which is called viveka or "conscience". This entire procedure is called *vicára*. When one moves along the path of viveka, that movement is called rationality. Now, avoiding unnecessary curvatures, avoiding unnecessary hindrances and time-taking, when the path is straight, that straight path is rationality.

The work of five thousand men may be done by one man with a machine. If such an ultra-modern machine is introduced in industry, it will surely save labour. This is rationalisation – rationalisation in the realm of industry. You may term it as "physical rationalisation".

Now, what is psychic rationalisation? It is the effort to rationalise dogmatic religious beliefs and practices, but the principle remains the same. Traditionalism is to be rationalised. The curvatures are to be avoided and straightforwardness is to be adopted. This is what has been done in Ananda Marga philosophy. Ananda Marga does not accept curvatures. It adopts a straight path. You may call it psycho-spiritual rationalisation. Traditionalism is outdated. The times call for rationalisation. Rationality and rationalisation provide the scope for physical, psychic and psycho-spiritual evolution.

Subjectivity is of two types – mental and spiritual. In mental subjectivity the mind merges into its own enhanced subjectivity, and in spiritual subjectivity the mind merges into spirituality.

The area of the mind depends solely on its subjectivated pabula. The area of the subjectivated pabula increases or decreases the jurisdiction of the mind. The subjectivated pabula have their definite periphery. Suppose you see the face of any person then close your eyes. Now, suppose you compare how much of your mental field is occupied with this image. Say one-fourth. Then try to increase its size. Again try to increase its size up to your capacity. This is the jurisdiction of your mind. This is subjectivated pabula. When you are seeing some external object with your eyes, that is objectivated pabula. Your mind has more space than the objectivated pabula. Hence the jurisdiction of the mind depends on the subjectivated pabula, not the objectivated pabula. External objects are objectivated pabula.

The diversion of pabula is possible in the physical and psychic spheres, but not in the spiritual realm. In the physical sphere both the internal and external transmutation of pabula is possible. In the psychic sphere only internal transmutation is possible. In the spiritual realm no diversion is possible.

Changing the psychic pabula or mind is risky in twenty-five per cent of cases. If there is maladjustment, there is every chance of insanity. In the case of the change of mind, there will be a sensation of *jhin-jhi*, twinging in the nerves, and then the personality will change. While changing soul, there is also the risk of death. If there is no adjustment, the person will die in two or three days. Just as transmutation can be done in the physical pabula externally, it can also be done internally by the application of microvita.

Suppose there are two people of the same race or sub-race. Suppose they are Austrico-Negroids. The people of South Bengal, South Orissa, Coastal Andhra and Eastern Tamil Nadu are Austrico-Negroid. Suppose one has thinner skin and lips than the other. While lying on the floor, the person with the thinner skin will feel that the ground is harder and colder, while the other will feel that it is softer and warmer. If the racial characteristics of a person are changed, then the entire personality will be changed. I do not accept any racial barriers. To recognise differences from human to human is utter futility. Internally, there is no difference between one person and another – there is no fundamental difference between one human being and another.

The greater the size of the periphery of the subjectivated pabula, the greater the jurisdiction of the enhanced mind. The spiritual pabula of an individual influences the process of diversion and transmutation of pabula in the minds of other people. By your pious thoughts you can divert the thought-waves of others. This is also an example of diversion. If you ideate on someone in a pious way, the object – that is, the person – will change accordingly.

The entire world wants our service: in the physical, psychic, spiritual, socio-economic and political realms. It brooks no delay.

Discourse delivered on 10 June 1990 in Kolkata, India. Published in Yoga Psychology, Ananda Marga Publications

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Healthy Lifestyle

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Meditation for Higher Consciousness

PROUT: Progressive Utilization Theory

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On Consumption And Profit

Shriraksha Mohan

Consumerism-based economies like capitalism view the consumption of commodities as the primary driver of profits. Hence, limitless consumption of goods and services is encouraged, whether one needs them or not. Capitalism encourages a high degree of debt among consumers.

According to French philosopher Gilles Lipovetsky, we are at a stage in capitalism marked by the global rise of 'hyperconsumption'.[4] Lipovetsky opines that in this stage, we are seeing a massive expansion in the quantity of consumer goods available to individuals and households. An ever-increasing opportunity to consume more, aided by globalization of trade, has increased per-capita consumption in the developed parts of the world. He observes an increase in hedonistic consumption more than need-based consumption.

When profit motive drives consumption, companies are heavily invested in advertising their products to their consumers. Advertising to imprint a desire for consumption in the minds of consumers leads to a waste of resources and capital that could have been better utilized to improve the quality of the product itself. Furthermore, the goal of advertisements is to encourage the behavior of 'hyperconsumption' among customers.

Conscious consumption

The Progressive Utilization Theory or Prout is an alternative and holistic socio-economic system proposed to replace the failing capitalist model of economy. With an emphasis on rational utilization and equitable distribution of the planet's resources, Prout offers a model to build a world in which all people and the planet thrive harmoniously.

Prout advocates for improving the living standards of all through guaranteed necessities, rights to jobs, and balanced economic growth in a three-tiered economic system. In this system, locally owned cooperatives play a significant role in the economy alongside private businesses and the public sector.[2]

Prout advocates for the organization of an economy based on five principles of decentralized economy:[3]

1. Local people control the local resources of a region.
2. Production is based on consumption, not profit.
3. Local cooperatives produce and distribute essential commodities.
4. Full employment of local people in local cooperatives and economic enterprises.
5. Regulation of local markets by removing non-locally produced commodities.

The second principle of a decentralized economy suggests production is based on consumption, not for profit. This raises many questions:

- What does production only for consumption mean?
- Why should there not be a profit motive? Does this mean economic enterprises receive no profit at all?
- How is this implemented and what does it change about how we think about the economy?
- What is consumption in a Prout system?

Answering these questions brings clarity about the nature of consumption and production in an increasingly ecologically and human rights conscious world.

While Prout supports an economic growth model, in which an increase in purchasing capacity and consumption leads to improved living standards for all, 'hyperconsumption' by a small group of rich

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individuals at the cost of the environment, and wellbeing of the less privileged is not supported.

Communism, on the other hand, is a command economy in which the nature of consumption is decided by the government or central authority, without consideration of the diversity of human needs and choices. Under communist regimes, a person with special skills and education is made to work and live at the same level as anybody else. Most communist economies have resulted in depriving the people of their agency to determine their economic future. In a Prout model, mindless consumerism is discouraged, while consumption based on the diversity of human needs and tastes is supported.

Needs and amenities

Prout, with its decentralized approach to planning, is a bottom-up economy that starts at the grassroots and works its way up. In this system, there are several stages of consumption. Consumption in the first stage is needs-based, to guarantee the basic requirements of life to all. Consumption in the second phase provides additional amenities to meritorious people. After everyone's basic needs are met, these amenities create incentives for individuals to use their skills to contribute to society.

There should be a constant effort to bridge the gap between basic needs and extra amenities, to constantly increase the living standards and quality of life for everybody. This leads to a progressive increase in consumption. When viewed in conjunction with the first principle of economic decentralization in Prout, it is apparent that increased consumption should not overshoot a socio-economic region's resource capacity to produce goods and services, as local people manage their local resources.

Local people and planners of a socio-economic region, who manage their local resources, should be equipped with enough knowledge about the region's limitations and utilize their resources wisely, to prevent resource depletion or ecological degradation. Local people will be equipped to plan their economies based on their needs and the availability of resources. In such an economy, the likelihood of 'hyperconsumption' is low.

Consumption can also take the form of common amenities shared by the community and special amenities to help the sick and disabled. Excess production is distributed rationally among people to enrich the living experience. Common amenities can include art galleries, museums, libraries, sports facilities, swimming pools, concert halls, and parks. In a Prout system, these amenities are considered a form of consumption of goods and services and can contribute immensely to increasing the standard of living and growth.

No profit?

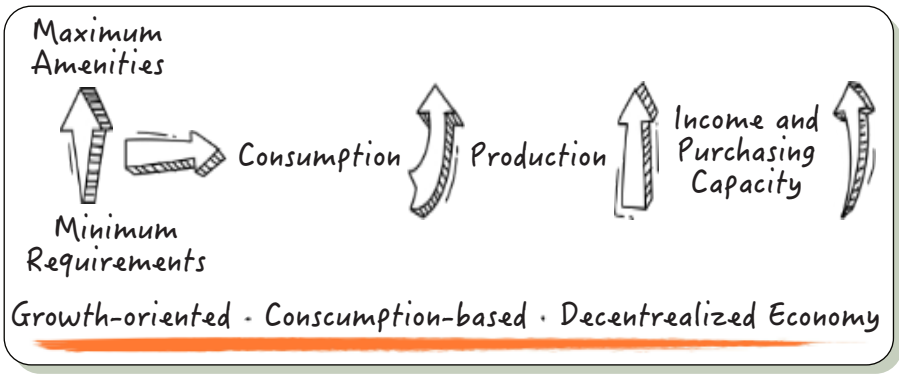
This brings us to the question, "Why should there not be a profit *motive*?"

When profit becomes the motive for production in an economy, economic enterprises fail to make good judgments about their production standards, the ecological impact of their economic activity, the working conditions of the labor force, and other such factors that affect lives and livelihoods. We come across many instances where there is a strong correlation between profits and disasters.

A train carrying toxic chemicals derailed[5] in East Palestine, Ohio, USA in 2023 causing pollution of soil, air, and water in the area of the derailment. The damage caused by this event to the environment and people may linger for many years to come. The railroad company operating the train that derailed did not want to assume responsibility for the disaster initially and later offered minimum assistance. Railroad companies ignoring critical safety standards to cut costs of operations and maximize profits have been identified as a root cause of many such disasters.

Similarly, think of the ecological damage caused by society's excessive reliance on fossil fuels, a reliance orchestrated to enrich some countries and corporations at the cost of worsening global warming and climate change. The Intergovernmental Panel on Climate Change[6] has published one report after another highlighting the dangers of extraction of crude oil without respecting the natural ecosystem's ability to support such an economy. Yet, profits from the commodification of fossil fuels make oil and gas companies extract oil relentlessly, and block efforts to end the reliance on fossil fuels.

Profit motive leads to production monopolies, the concentration of wealth in a few hands, and superfluous production that can overshoot a region's ability to regenerate its resources. In a profit-oriented system such as capitalism, solutions to day-to-day problems are commodified by attaching a price tag



to them. For example, healthcare is a basic requirement of life and a human right. But even basic medical care is unaffordable to many in the United States. When an essential industry like healthcare is run for profit, it leads to a situation where people are deprived of their basic right to live. Should this be an outcome of our economic activities?

A healthy economy should serve the people and the planet. But in a profit-oriented economy, people and the planet serve the economy to maximize the material gains of a few individuals. Prout, on the other hand, prohibits the production and distribution of essential commodities based on profit motive.

Does this mean economic enterprises receive no profit at all?

Rational Profits

How would any economic enterprise continue operating without making profits to reinvest in production and operations? Prout places emphasis on rational profits. The suggested upper limit for profits cooperatives under Prout can make is roughly 15% of the cost of production.[7] This profit is also based on rational costs of production, taking into account the cost of raw materials, cost of labor, cost of transportation and storage, depreciation, etc.

Most of the production, especially, the production of essential goods in a socio-economic unit is undertaken by local cooperatives that employ local people (principle #3 and #4 of decentralized economy), and non-local commodities are removed from the market for the sole purpose of supporting local cooperatives (principle #5 of decentralized economy). Progressive growth in consumption in a Prout model, as discussed earlier, creates incentives for local cooperatives to produce more and grow in safe spaces without competition from external market monopolies.

The profits these economic enterprises make naturally see an upward trend with an upward trend in consumption and production. Profits are reinvested in the local region as wages for local people, and for increasing production. Therefore, in a growth-oriented Prout economic model, profits are always ensured, even if they are not the primary goal of production. An increased purchasing capacity, improved living standards and economic security follow.

"To create 100% employment among local people, PROUT supports both a short term and a long-term economic plan. In the short-term plan, labour intensive industries based on the collective minimum requirements of life should be started immediately or made more productive where they already exist. These industries should be based on the consumption motive. They should also provide a rational profit in order to guarantee adequate purchasing capacity to those employed in them and to ensure their continued existence and growth."[8]

Growth in consumption, growth in production, growth in profits and wages

Prout also recognizes the need to have key industries operated by the public sector. These are industries providing services like transportation, irrigation, telecommunications, mining, water purification, flood control, production of fertilizers, etc., that require a bigger scale of operation and affect the lives of many, beyond the scope of a local region. These industries may draw upon resources across various regional boundaries to function at a larger scale. These enterprises must be run on a "no profit, no loss" basis, and must be managed by the immediate local government.

The private sector should be restricted to goods and services deemed as luxury or non-essential. This ensures private businesses with profit motives cannot adversely affect the livelihoods of common people, whose minimum necessities must be guaranteed. Prout's system of decentralized economy discourages monopolies that exist solely for profits.

Hence, the private sector too will be forced to adopt pricing strategies to gain a comparative advantage over competing cooperative enterprises, and not just focus on profits.

What may be deemed non-essential in this day and age, may become an essential commodity in a few years. Principles of economic decentralization are applied under the consideration of time, place, and personal factors. Production and consumption are adjusted accordingly in a Prout system.

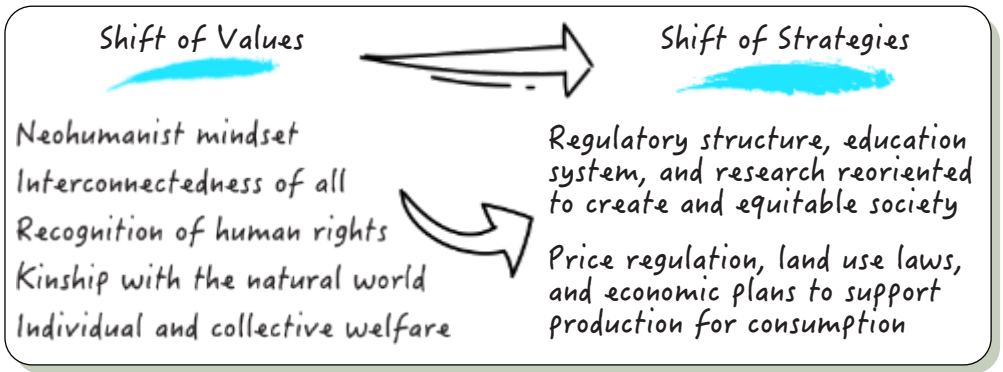
How is this implemented? What does it change about how we think about the economy?

"Production for consumption, not for profits"[9] – embracing this idea calls for a paradigm shift of mindset and values. A shift that requires unlearning the old ways of thinking about and organizing an economy that works for a few, and learning new ways of building an economy that works for all, "ground up".

Values

Our personal values determine how we structure our lives. Our values also determine how we structure the larger economy and society. The way we think about structuring our economies and society will also have to undergo a fundamental shift. A shift of values in the psychological sphere translates into a shift of strategies in the practical sphere.

The spiritual and ecological perspective to growth in a Prout system is firmly rooted in the integrated philosophy of Neohumanism, a worldview characterized by love, care, and compassion for all beings of the universe. Socio-economic strategies based on this worldview tend to be caring, inclusive, fair, and non-exploitative. When our strategies for consumption and production are based on Neohumanist values, then these strategies tend to support the idea of considerate consumption-oriented production, which is not motivated by profits alone.



"Prout is the path of socio-economic emancipation for humanity. Prout should go side by side with the psychic approach of Neohumanism. Neohumanistic ideas give human beings the impetus to move. They create a longing for subtler pabula, and that pabula is supplied by Prout. The spirit is to maintain a balance between the physical and psychic worlds and take human beings to the threshold of spirituality."[1]

A shift of mindset and values starts with Neohumanist education. Embracing Neohumanism empowers humans to take benevolent actions, to recognize the interconnected nature of all life forms, to acknowledge everyone's right to live a good life, and realize individual well-being lies in collective well-being. An ideal system of education must also inculcate a sense of morality and duty toward one's fellow beings, and develop one's ability to think rationally.

"The noblest form of social service is to educate the public and create a sense of consciousness in them. This sense of consciousness is to be inculcated in each and every human being. This is your duty. The goal of education is to elevate the all-round standard, and especially the intellectual standard. In addition, the elevation of the moral standard is extremely necessary in the sphere of education. This moral standard is deficient today. It is lacking in the present educational system also. You are to create a new social order. Therefore, you should first acquire more and more knowledge in different spheres of life and also you are to upgrade your morality. Along with your intellectual standard, if you have morality, then everybody will respect you. Try to acquire as much knowledge as possible through our own books. Education which leads to the acquisition of knowledge plus morality makes for a peaceful society."[10]

A shift of values that can occur with the wholehearted acceptance of Neohumanism leads to a shift of strategies for organizing our society and economy. Prout's economic decentralization principles guide the shift of strategies. A thorough

understanding of the nature of consumption and production within a Prout framework will influence this process.

A shift of strategies includes education and research to analyze society's consumption and production patterns. Strict regulations and Prout policies based on research outcomes could become strategies to move the economy away from an extractive, exploitative, and profit-oriented production model, and reorient it to create equitable socio-economic conditions for progress. Sound policies have the potential to foster behavioral change.[11]

Incentives, bans, mandates, etc are policy instruments that can nudge people to change consumption and production patterns and steer the economy in the right direction. These instruments can be used to implement Prout's principles of a decentralized economy. For instance, higher taxes on luxury or non-essential commodities can discourage the behavior of overconsumption, and reorient the production process to create more essential commodities.

A shift towards Neohumanism helps lawmakers frame laws to protect local cooperatives, human rights, and the environment through strong legislation. All these measures go hand-in-hand within a decentralized and democratic economic structure, where the focus is on socio-economic empowerment, and not on profits.

Neohumanism, as the bedrock of Prout's strategies, inspires inclusive and holistic economic growth. This model of organizing economies acknowledges that collective and individual well-being are interdependent, and also honors the rights of the natural world. Progressive socio-economic strategies, guided by Prout, follow a shift of values guided by Neohumanism.

The article, complete with all its references, is published on theneohumanist.com

Shriraksha Mohan is a student of Prout and an activist, who realized there is a dire need for systemic changes in the social, economic, and cultural spheres of existence to create an equitable and sustainable world. She has a Master's Degree in Computer Science and worked as a software professional for several years. She is now pursuing a Master's Degree in Heterodox Economics. As an active member of Prout Alliance and Proutist Universal, she is invested in Prout advocacy to raise socio-economic awareness through Prout education, writing, and outreach efforts on Prout's social media. She is the co-author of a chapter on Prout in the book, Climate Adaptation: Accounts of Resilience, Self-Sufficiency and Systems Change. *She serves on the board of Prout Research Institute in Asheville, North Carolina, USA.*

Letters to the editor

The CO2 Issue

Edvard Mogstad, Ørje, Norway, June 2024

First, I want to credit Dr. Towsey for his sober paper on the vast history of climate science (NR 2, March 2024). In the original paper, posted on your website, he refers to various astrophysical scientists before he gives his opinion apparently in favour of the current mainstream CO2-hypothesis; that man-made burning of fossil fuels since 18th century resulted in a "greenhouse effect" of global warming

Interestingly, Dr. Towsey also takes other geophysical aspects into account such as the shifting of the geographic poles. In a discourse in Kolkata in 1986, the seer-philosopher P.R. Sarkar predicted that such shift would result in major world upheavals. We who were there were all somewhat bewildered as to what sort of pole shift Sarkar was referring to. Dr. Towsey, in this paper, makes it very clear that the geographical poles, and not the magnetic, have the capacity to effect climate changes, and he gives proper scientific references regarding that phenomenon.

I have some reservations, though, for parts of Towsey's presentation. In Figure 5 in his paper he points to a strong correlation between global warming and CO2 contents. But when the graph is enlarged, it is seen that the warmth curve rises prior to the rise in CO2, about some five to six hundred years earlier. That is, global warming appears to be the cause, and the rising CO2 the effect, and not the other way round. The warming heats up the oceans, slowly, which in turn gradually have to let go of CO2, following Henry's law. The warming is primarily caused by variations of radiation from the sun, from its different cycles.

The shortest cycle is quite well known among the public, the eleven year sunspot cycle. There are, however, many other cycles, with time spans fitting inside the interglacial periods. In fact, several studies have determined that, in addition to Schwabe's 11-year sunspot cycle and its associated 22-year Hale magnetic cycle, solar activity is characterised by several longer oscillations. In the scientific literature these are now known as the cycles of Bray ± Hallstatt (2100±2500 years), Eddy (800±1200 years), Suess ± de Vries (200±250 years), Jose (155±185 years), from Gleissberg (80±100 years), the 55±65-year cycles and others: see the numerous citations in Scafetta (2020). Identical fluctuations are also observed in climate records, suggesting a close link between solar variability and climate.

Dr. Towsey does not deny or ignore Nicola Scafetta's research but maintains the mainstream

opinion, that "This proposal [i.e. that the solar radiance is more important than the rise of CO2] is rejected by the vast majority of climate scientists because there are no known mechanisms by which such gravitational interactions and the accompanying solar irradiance would be strong enough to exert the observed climate effects (Schmidt et al., 2022)."

But the fact of the fluctuations of Earth temperature before 18th century remains (Figure 5) and cannot be rejected, rather they should be investigated and tentatively explained. Scafetta tries to explore the reasons behind these fluctuations, which can not be burning of fossil fuels, they are too early. What "the vast majority" do reject, is that these mechanisms are more important than the modern rise of CO2.

Well, below is an attempted explanation for the "weak" mechanisms, by the Norwegian astronomer Harald Yndestad:

The position of the planets affects the sun's radiation

NASA started satellite-based measurement of radiation from the sun in 1979. In 2014, researchers from NASA were able to publish a coherent data series for the years 1700-2013. An examination of the data series, revealed the signature (periods) of the major planets Jupiter (12 years), Saturn (29 years), Uranus (84 years) and Neptune (164 years) (JSUN). The same signature was identified in the Sun's rotation around the barycentres of the Solar System (barycentres are centres of mass in the solar system, a common centre of gravity between the Sun and the planets). There is a direct correlation between the elliptical orbits of the planets, the rotation of the Sun around the barycentres of the Solar System, and total radiation from the Sun.[1]

[1] Yndestad, H., & Solheim, J. (2017). The influence of solar system oscillation on the variability of the total solar irradiance. *New Astronomy*, 51, 135–152. doi.org/10.1016/j.newast.2016.08.020. ntnuopen.ntnu.no/ntnu-xmlui/handle/11250/2473902.

"I am not a climate denier. I doubt, however, that there is any connection between CO2 and global warming."
- Norwegian State Meteorologist Gjertrud Røyland

The explanation is that the elliptical orbits of the planets change the speed of the Sun's rotation around the barycentres of the solar system. Changes in the Sun's rotation speed affect the Sun's internal dynamo and radiation from the Sun's surface. The Sun has the least radiation when the planets have the greatest speed closest to the Sun. The radiation from the Sun has a deep minimum when the UN planets are closest to the Sun at the same time, a Grand minimum when the SUN planets are closest to the Sun, and a Fimbul winter minimum when all the JSUN planets are closest to the Sun at the same time. The sum of the JSUN periods can be presented as a TSI index that represents how radiation from the sun varies over time.[1]

Scafetta admits that the mechanisms appears weak, but he challenges the astronomic community to find better explanations, since Scafetta himself has found no better that fit so well into the oscillations.[2]

Whatever the reasons behind pre-industrial cycles, what scares the public today is the unprecedented rise in CO2 level since 1950, Figure 6 in Towsey's article. Even if, in earlier periods, predating the Ice Ages, there have been much higher levels of CO2.

Accordingly, what seems relevant for our discussion is whether there is a greenhouse effect from manmade CO2, since 1950.

Personally, I have not reached any definite conclusion since there are many natural scientists here in the Nordics who go against the mainstream. Also, predictions, models and prognoses have proven chronically wrong—"grossly exaggerated", to quote Petteri Taalas, leader of World (and Finland's) Meteorological Organization.[3]

The natural conclusion to those prognoses is that it' is not real but rather fake science! Among others, State Meteorologist of Tromsø, Norway, Gjertrud

[1] Yndestad H. 2022. Jovian Planets and Lunar Nodal Cycles in the Earth's Climate Variability Frontiers in *Astronomy and Space Sciences*. May 10. 2022. doi.org/10.3389/fspas.2022.839794.

[2] Nicola Scafetta (2021): Planetary, Solar and Climatic Oscillations: An Overview. Science of Climate Change.

[3] talouselama.fi/uutiset/ilmastoguru-petteri-taalas-ilmastonmuutos-ei-ole-viela-riistaytynyt-kasista-mutta-keskustelu-siita-on-siina-on-uskonnollisen-aariliik

Røyland writes in an essay titled "I am not a climate denier. I doubt, however, that there is any connection between CO2 and global warming":

> *Future climate projections are presented as scientific facts, and this is where the big miss happens. Facts about the future will come in the future. Models will never be exact either at the micro level or at the macro level. To claim otherwise would be contrary to scientific working methods where different hypotheses are constantly tested, verified against reality (observations), improved models (algorithms) and tested again. Monopolizing the truth, such as claiming that "the average global temperature will increase by 2 degrees in 20 years", will prevent true research where one constantly searches further to find connections and produce new knowledge. True research depends on someone asking new questions, in order to find new answers.*
>
> *Then to the International Panel on Climate Change (IPCC), which appears as an auto-answer every time you ask questions about these "scientific facts" about the climate. I wonder, this 97% agreement in the UN climate panel, what is it about? Could it be that they have agreed to eliminate the uncertainties in the climate models? If so, they have lost their scientific integrity. Another thing I wonder is why it is so important to appear so cock sure? And this is where I sense that there has been an unfortunate connection between science and politics. If there is a political agenda behind it, science will no longer be open and searching, but will be steered in a controlled direction. Is this what makes it so uncomfortable to ask questions that are not politically correct? And is that why those who do not support current climate policy are labelled as climate deniers.*[1]

The first world leader who came out against manmade global warming, was Margareth Thatcher, who used the CO2 hypothesis in order to crush the coal miners' strike, the Miners Union and the labour unions in general. Immediately, funding for research related to global warming was easily obtained.

The political and plutocratic exploitation of global warming would be a theme for a future article.

[1] *"I am not a climate denier. I doubt, however, that there is any connection between CO2 and global warming," Gjertrud Røyland. Derimot.no, 21.5.2024. derimot.no/meterolog-jeg-er-ingen-klimafornekter-men-jeg-tviler-pa-sammenhengen-mellom-co2-og-global-oppvarming/*

Global Warming

Michael Towsey, Tasmania, Australia

Dear Editor,

Congratulations on your second edition of Neohumanist Review that featured articles about climate change. Concerning the article "Climate Change - from the deep past to the 22nd century", I wrote it in August/September of 2023. Climate change science is a rapidly evolving field with new research papers appearing every month. I would like to alert your readers to a couple of updates.

First, it was probably foolish of me to cite the Fairbridge paper from as far back as 1987 to argue that the so-called "snowball earth" episode never happened. In the intervening 37 years, the evidence for ice-cover extending to the equator for an extended period is now very strong. The Wikipedia page "Snowball Earth" (en.wikipedia.org/wiki/Snowball_Earth) provides an excellent summary of the evidence for and against snowball earth. And I strongly recommend the 2023 BBC 2 documentary series *Earth* for fascinating insights into the Earth's ancient ice-ages and climate.

Second, I made the comment: "There is no evidence that fluctuations or reversals of the Earth's magnetic field have had any effect on climate or biological evolution over geological time scales." True—until recently! A recent research paper (Cooper et al., 2021) claims that a geomagnetic field event 42,000 years ago "caused substantial changes in atmospheric ozone concentration and circulation, driving synchronous global climate shifts that caused major environmental changes, extinction events, and transformations in the archaeological record". What makes the timing so interesting is that 42,000 years ago coincided with the extinction of the Neanderthals and the rapid emergence of modern humans. It is also interesting that Sarkar (1986) states that geomagnetic phenomena will play an important role in future climate change events. But these ideas remain controversial. So watch this space!

This article will be updated periodically to accommodate new discoveries. It can be accessed at theneohumanist.com/2023/10/23/climate-change-from-the-deep-past-to-the-22nd-century/.

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Letters to the editor may be sent to
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On the Sustainability of AI Growth

... Continued from page 33 ...

A concern, if I can use this word, is at a higher education level, where once again there are complex challenges such as non-availability, enrollment, affordability, quality, relevance, etc. Of course, the AI-based tools can be very useful if they are made easily accessible. However, the style of education, will have to shift from the purely "content-delivery" mode to a "content- with-skill" mode, an approach which is more hands-on and includes projects rather than based merely on rote learning. This can help attract more students towards undertaking higher education and help them enhance their creative potential. This is easier said than done and it is very difficult to implement if the class size is large and the teacher, who was trained in the "older" ways, is unwilling to put in the efforts. There is, however, a greater concern. If students (or in general, the human population, that is distinct due to their thinking capacity) leaves the "thinking part" of the task to the advanced tools made available by generative AI, this is likely to be detrimental to the development of mental faculty. If the goal is only generating profit, as is the case with a typical business, which may need a high cost of resources, then the development of human potential takes a back seat. The end result may be a situation where there is a large of pool of humans with basic literacy who are addicted to the AI tools, and may even agree to pay for the use, but they are unable to earn a living as it may be more profitable to employ computer algorithms instead. This will create a different type of inequality in the society, one in which on the one hand there will be those who will develop & control the AI tools, and the others who will be controlled (evidence exists that this is already present for tools such as social media). This inequality will extend to the availability and cost of energy as well – those who need electricity will have a lot of it, others may or may not get the very basic. This may have other social consequences such as increase in crime.

Final comments

In his article,[19] Noam Chomsky says "AI's deepest flaw is the absence of the most critical capacity of any intelligence: to say not only what is the case, what was the case and what will be the case — that's description and prediction — but also what is not the case and what could and could not be the case. Those are the ingredients of explanation, the mark of true intelligence." He obviously argues that AI cannot match the likes of Albert Einstein or Steve Jobs, and the creative geniuses of their kind. They, however, represent a small minority of humans, and this will very likely remain so in the future. The majority wants peace and comfort in their lives, and they are happy to be the end-users and customers, who think of technology as a magical wand. If AI tools help them in this regard, they will be widely adopted without a concern for the energy consumption, cooling-resource's demand or its sustainability. For some causes such as that of education in remote areas, perhaps this is justified. However, given its high environmental cost, AI should be used sparingly, and only if it is actually needed to make the lives better. GPU-based computing by Nvidia is known to be more energy-efficient than CPUs, and continuous efforts are on to improve upon this. Some efforts by the big tech companies such as Google and Microsoft to achieve a net-zero carbon footprint are steps in the right direction. Increasing the capacity of renewable energy sources with adequate energy storage is another need of the hour for sustainable growth. We can hope that these will continue in the future, and the advancement of AI technology does not come at a cost of excessively warming our planet, depleting the resources, leaving it uninhabitable, increasing the already high inequality, and leaving the humans lazy, stupid and dependent. This was shown in WALL-E, the 2008 animated movie directed by Andrew Stanton, written by Stanton and Jim Reardon (image above). The film, which some would say was much ahead of its time, portrays consumerism, corporatocracy, waste management, human environmental impact and concerns, obesity/ sedentary lifestyles, and global catastrophic risk.[25] The danger is not so much from the so-called malevolent-superpowerful-AI which "will rule over the humans" as it is from the (human) leaders who are spearheading the AI development. It is crucial that these leaders have their moral conscience in the right place, and that there is some global organization that closely monitors the progress. We, as a collective society, should get to decide how much technology we must allow into our lives, so that we are its master and not the slave.

The article, complete with all its references, is published on theneohumanist.com

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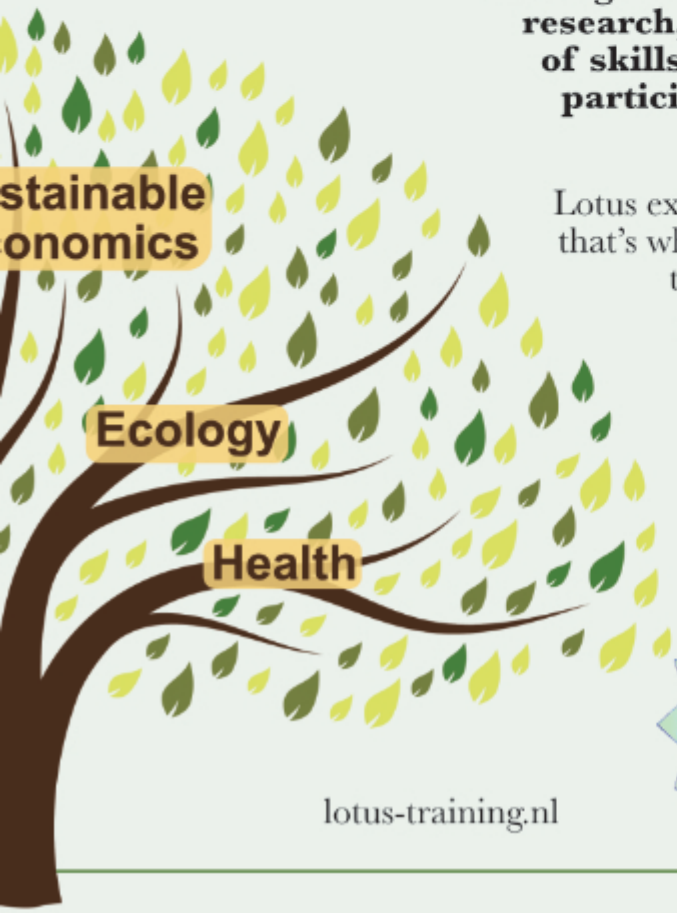

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NEOHUMANIST Review

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

NEOHUMANISM

The idea of neohumanism emerged from the need to extend human existential outlook and vision beyond the borders 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 various fields, 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."*
>
> - The Liberation of Intellect, Neohumanism

In particular, the philosophy of neohumanism deals with the role of sentiments in various forms, rationality, intuition and spirituality. It analyses social and socio-economic dynamics of the misuse and proper use of sentiments, and defines neohumanism as devotion to all of creation, based on rationality.

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