Meaning and Purpose in a Conscious Universe

A Physicist's Meditations for a Post-Material Paradigm Shift Bridging Science, Philosophy, and Spirituality

Marco Masi Ph.D.

.

Contents

"I have mapped the heavens and analysed the stars,
Described their orbits through the grooves of Space,
Measured the miles that separate the suns,
Computed their longevity in Time.
I have delved into earth's bowels and torn out
The riches guarded by her dull brown soil.
I have classed the changes of her stony crust
And of her biography discovered the dates,
Rescued the pages of all Nature's plan.
The tree of evolution I have sketched,
Each branch and twig and leaf in its own place,
In the embryo tracked the history of forms,
And the genealogy framed of all that lives.
I have detected plasm and cell and gene,
The protozoa traced, man's ancestors,
The humble originals from whom he rose;
I know how he was born and how he dies:
Only what end he serves I know not yet
Or if there is aim at all or any end
Or push of rich creative purposeful joy
In the wide works of the terrestrial power."

Sri Aurobindo – Savitri, Book VII, Canto VII

Preface

When I was eight years old, my family went camping in Sardinia, an island in Italy known for its beautiful beaches and turquoise sea. But what struck me, as a child who was born and had lived until then only in a big city like Milan, wasn't so much the sea but the starry sky. In the 1970s the light pollution in Sardinia wasn't as invasive as it is nowadays. While in big cities it was already out of the question to admire the wonders of the firmament, it was still possible to find a pitch-black sky on a dry and stony island unaffected by light pollution. It was the first time that I could see the sky as it is.

The first thing I noticed was the strange white stripe that crossed the sky. While walking with my father, I pointed at that strange 'cloud.' He quickly made it clear that it is not a cloud but a myriad of dense stars–that is, the Milky Way. I couldn't believe that to be true. Thousands of stars so densely packed that we could no longer discern them? I felt such a sense of awe and wonder that I could hardly sleep that night. Thanks to that sleeplessness, I made another discovery: The stars change their position in the sky! Wow! What a groundbreaking finding. Of course, the next morning my father enlightened me about how this happens due to the Earth's rotation. I quickly learned that, despite all the senses' suggestions, this was also an illusion.

Such was my introduction to the world of appearances. Though I didn't know it at the time, I can see in hindsight how my young mind went through a similar historical process that led humanity from a geocentric to a heliocentric worldview. But what most impressed that mind was the clear perception, sensation, feeling, and intuitive seeing–I would almost call it a mystic experience–that we don't live in a dead and meaningless cosmos. Because, again, appearances betray. While physically the universe is mostly a chilly and empty place, I could feel the omnipresent vibration that supports it behind a veil. Since then, my conception and perception of the universe and Nature[1] have dramatically changed. Nothing is really dead. In a sense, all is alive. Even those rocky and dry asteroids or icy comets are perceived as entities having their place in space that is not coincidental but instrumental.

Therefrom I developed, at a very young age, my interest in the meaning of life, our place in the universe, the origin of all there is, and all things about natural sciences and philosophy. While other children were playing football or hide-and-seek, I was asking myself Parminedean questions such as "Who am

[1] I will write 'Nature' with a capital 'N' when referring to the proper noun that represents the phenomenal world (e.g., 'Hurricanes are a power of Nature') and 'nature' with a lowercase 'n' when referring to the common noun that designates qualities (e.g., 'It is in the nature of my character to be picky').

I?" and "What does it mean that something exists?", or I was caught by the Heideggerian rumination "Why is there something rather than nothing?"

Later on, however, everything conjured against this philosophical style of living and grounded me back into the bubble we call "reality." I enrolled in college and university and did my Ph.D. in physics because deep down I was driven by the naïve idea that this could help me answer the existential questions that greatly interested me. As usual, life taught me another lesson. No space whatsoever was available for such contemplative topics, and I found myself fully caught up in the typical "shut up and calculate" academic environment detached from any deeper insight into reality and life.

In hindsight (the miraculous educational power of sufferance is always recognized in hindsight), I realize this was an extremely useful life lesson. I learned the dry technicalities of science, especially of physics. I learned how to work professionally in an environment that does not ask you to investigate the secrets of Nature but demands pragmatism and efficiency. Ultimately, I learned how to play the game.

But first and foremost, I learned not only what science is about but rather what science isn't. It became so adamantly clear what its strengths and limitations are when I compared my technical knowledge with the other kind of knowledge that I had nourished since my early celestial encounters but that I had to set aside for such a long time. This academic experience partially answered the how-questions but didn't answer my existential questions of what things are and, ultimately, why they are. Despite all the progress and insights of science, the mystery of existence, consciousness, evolution, and life remains essentially the same.

Could it be that the lack of progress in answering these deeper questions of a philosophical nature isn't due to a lack of information, discoveries, or technological advancement, but rather somehow inherent in science's way of seeing the world and its materialistic foundation?

Science, as a method, does not inherently require a materialistic ontology, although contemporary scientific theories often imply such an ontology. The scientific method doesn't need to assume a materialistic ontology, even though the theories we have today do. In our current cultural context, science is practiced based on the distinction between. What science as a method appears to presuppose is the distinction the subject and the object, the observer and the observed. However, this distinction need not be taken as an axiom; science could also expand and enhance the materialistic perspective without negating it, and ultimately transcend it.

The assumptions we nurture and how we look at things sometimes determine what we see and discover. What we see depends on how we see. No matter how powerful your microscope, telescope, or particle accelerator is, your belief system will determine how to interpret what you discover.

Sometimes facts are in front of our eyes, but we ignore them because they don't fit into our worldview.

At some point I began to study the spiritual traditions of East and West. For several years I was literally lost in its philosophy, metaphysical constructs, and spiritual practices. They answered several questions. Until I realized that these alone are not the key to an integral knowledge that I was, more or less consciously, seeking.

Slowly but steadily, I was able to piece things together and a more comprehensive and integral vision emerged in which both science and spirituality had to somehow be integrated into a third cognitive position, or what I like to call an "integral science," and that has yet to be born and developed.

Some could argue that we don't need a "new science;" we simply need to apply the scientific method to the claims made by spiritual traditions. However, while we shouldn't dismiss the valuable insights of the current scientific paradigm, and while empirical evidence and standard research procedures remain essential, the existing scientific method alone is insufficient. It's not only about evaluating spiritual claims supporting them with scientific evidence. It's also about developing a perspective on Nature that integrates those claims and sees them from a wider perspective. I feel that, without also adopting alternative ways of perceiving the world, we won't be able to extend our understanding beyond certain limits. Our view of the world is shaped by how we perceive and conceive it. As we will analyze, the cognitive approach influences the content of what is recognized.

Moreover, because the scientific method primarily relies—sometimes explicitly, but often implicitly—on a materialistic ontology, an intellectual perspective that challenges this assumption is essential to move beyond materialism.

It became clear how the materialistic sciences are only one way of seeing the world. Philosophy complements it with another perspective, and the mystic experience represents yet another approach. Synthesizing and transcending them into a position where they appear as the three distinctive 'windows' through which we can observe the same reality–none of which hold exclusive rights to what should be considered the "truth"–is the main objective of this volume.

I. Navigating This Book: What's It's All About and What to Expect

1. It's Time to Dispel the Myth of Naturalism

Before exploring existential questions and crafting a 'grand vision' in the upcoming chapters, I want to highlight the insights gained from my fifty years of experience: We must recognize the inherent limits of science by deprogramming our habitual materialistic thinking.

The dominant methodological approach is naturalism.[2] Naturalism is the philosophical belief that everything originates from natural properties and causes—specifically, from physical processes alone. It asserts that spiritual explanations must be excluded or discounted from the outset. Consequently, naturalism maintains that consciousness[3], mind, and life should be described solely in terms of material processes, disregarding any psychological dimensions and eliminating any consideration of sentience, feeling, or mentality. It then wonders why and how these could emerge from dead matter.

The lack of tangible progress and the shortcomings of this approach are becoming increasingly evident. There is now growing evidence challenging a strict naturalistic interpretation of the mind and consciousness. Although this new information is often disregarded for ideological reasons, the stalling of progress is persuading some scientists and philosophers that the purely naturalistic perspective is insufficient and needs revision. Additionally, several individuals have been influenced by skepticism toward neo-Darwinism as the ultimate framework for a materialistic, non-teleological[4] account of evolution, which also plays a role in this shift in thinking.

---

[2] Also known as "metaphysical naturalism," "ontological naturalism," "philosophical naturalism" or "anti-supernaturalism" that should be distinguished from "religious naturalism" or "spiritual naturalism." I will refer to the former simply as "naturalism." While the cosmology presented later could be loosely described as a form of spiritual naturalism, I will refrain from using this term, as it may suggest religious or metaphysical concepts that are not part of the integral cosmology I will discuss. Instead, I will refer to it as "spiritual emergentism."

[3] The term "consciousness" has taken on various meanings depending on the discipline and context. In this book, I will always refer to "phenomenal consciousness"–that is, subjective experience, sentience, qualitative perception–simply as "consciousness," unless stated otherwise.

[4] The term "teleology" originates from the Greek word "télos," which refers to the study of aims, purposes, and final causes in Nature. In contrast, modern science adopts a strictly non-teleological perspective.

There is a growing dissatisfaction with materialism, or more specifically, physicalism[5], as the definitive explanation, particularly in the fields of consciousness studies and evolution. This sentiment is emerging even among intellectuals who have traditionally supported a materialistic, Western analytical philosophical tradition. Although this material monism remains the dominant perspective, the notion that a strictly mechanistic, physical, and intellectual understanding of the world is the sole path to truth is increasingly unconvincing. What was once a small intellectual minority has evolved into a noticeable splinter group—still not a majority, nor a homogeneous one. However, it is likely that, over time, alternatives to physicalism will become more vocal, garnering greater attention and recognition and ultimately reaching a critical mass that will render them impossible to ignore.

A clear indication that Western philosophy is rediscovering its roots is the revival of traditional metaphysical worldviews, such as philosophical idealism, pantheism, panentheism, panpsychism, cosmopsychism, substance dualism, and substance monism, along with various developments and modifications of them. This diverse array of non-physicalist frameworks encompasses the philosophy of mind, consciousness studies, cognitive sciences, neuroscience, biology, and psychology, thus reflecting a significant trend toward both old and new ontologies that seek to explain our place in the universe.

However, this philosophical renaissance is not without its challenges. Many of these purely intellectual metaphysical speculations and conjectures rely heavily on a Western scientific, rationalistic, and third-person perspective. I argue that this reliance is a fundamental source of many inconsistencies and paradoxes that undermine their validity. This concern is one of the primary motivations for the present work. At this point, I would like to introduce this philosophical project, which, at least in theory, has the potential to transcend mere philosophy and foster a new practical approach in science, ultimately enhancing our understanding of the meaning of existence and the true and intimate nature of ourselves.

Though most scientists and philosophers would not describe themselves as supporters of a strictly materialistic worldview, nonetheless *'scientism'* remains a deeply rooted perception of reality and our nature. Scientism is a philosophical attitude that adopts an absolute faith in the efficacy of science; it says that science alone can render truth about the world and reality.

Science and scientism are not the same. You can deeply value the former while rejecting the latter. While science does not necessarily claim to be the only method by which to acquire knowledge about the world, life, and mind, scientism is a single-minded exclusively left-brain understanding of reality that

[5] Physicalism is a broader term because it encompasses not only matter but also everything described by physics, including both massive and massless particles (such as photons), the fundamental forces, the laws of physics, and space-time.

admits only to a strictly scientific, materialistic, or physicalist worldview. Any philosophical, metaphysical, spiritual, or religious claims are branded as nonsensical and superfluous. It is an absolute view of reality in which only science, rationalism, and empiricism can open the way to truth, and it found a large consensus, especially during the first half of the 20th century in the intellectual movement of logical positivism.

Nowadays positivism has lost its appeal, and most don't subscribe to such a limited worldview, at least not officially. Or, might we say, not consciously? Indeed, I contend that, unconsciously, it remains deeply anchored in our way of thinking and seeing the world, even among people who have a spiritual or religious view of life and the world. The overwhelming and undeniable success of science and its material achievements has conditioned our mental patterns and belief systems. In a subtle and not always explicit manner, nonetheless, scientism continues to condition us in terms of how we see life, our body, our psychology, and reality. Despite the recent revival in philosophical inquiries, the rediscovery of ancient spiritual traditions, and the awakening of interest for all that is extrasensory, materialism is still the predominant ideology framing our thinking and our choices, with its decision-makings, fundings, and our policies.

The belief that external changes—such as advancements in technology, new political systems, AI, Mars colonies, or hyper-technological transhumanist visions—will save us and create better worlds without necessitating an internal spiritual transformation is a dangerous illusion. This mindset, rooted in various forms of materialism (often unconsciously), is more prevalent today than ever. It is an illusion deeply entrenched in a materialistic perception of reality that is no less ingrained in spiritually inclined minds. On the other hand, pseudoscientific claims that lack rigor and fail under critical scrutiny are also widespread.

However, my critical attitude should not be seen as an attack on science. On the contrary, it is a defense of science and an appeal to expand and complement it. Precisely because of the alarming recent rise in anti-science attitudes, this shift has become even more essential. Despite all the wonderful things science has given us it left a void: A mechanical universe without meaning and soul.

We are told that science should be kept separate from any deeper philosophical, let alone spiritual quests, and that it was never intended to tackle questions of transcendental kind, and many still believe it will, sooner or later, be able to eradicate all metaphysics. Yet, in these times dominated by a materialistic paradigm tainted by pseudo-scientific beliefs, we must rediscover and return to a deeper spiritual and post-material understanding of reality, ourselves, and Nature. This perspective does not exclude critical thinking and discernment; in fact, it emphasizes them even more than traditional analytical thinking does.

We must not abandon discernment, which relies on rigorous scientific methodology, including experiments, observations, and data collection. However, it is time to move beyond a narrow naturalistic paradigm that confines itself to a worldview of nothing but matter and the so-called 'laws of Nature.' This perspective has repeatedly failed to address several foundational questions, which will be discussed here. This form of scientific realism has evolved into an ideological belief system that significantly shapes academia, dictates the allocation of research funding, and excludes brilliant minds from academic and research positions if they propose ideas or curricula that diverge from established orthodoxy.

Whereas, we need something that encourages a culture and science that challenge the notion that everything must fit into a strictly materialistic and mechanical view of reality. It's essential to find a middle ground that incorporates some form of trans-physicalism, idealism, or spiritualism—one that transcends the often simplistic, or even pseudo-scientific approaches, of religious or New Age thinking. A good starting point could be a non-teleological idealism, as rejecting materialism does not necessarily entail embracing teleology. However, I believe that promoting a teleological perspective that acknowledges meaning, purpose, and agency in Nature will ultimately be an essential goal in the long term.

If humanity seeks a better future, science must embrace deeper and more expansive ways of thinking, moving beyond a superficial understanding of life, mind, consciousness, and the world around us. We urgently need a post-material science that recognizes the possibility that we are more than mere biological lumbering robots. It is time to question whether consciousness might be more than the result of neuronal interactions arising from a bottom-up process that once originated in a primordial soup.

One of the key priorities of our modern age is to bridge the gap between science and spirituality. We should move beyond the predominant materialistic paradigm and the exclusively rationalistic mindset to advance toward a post-material society—a trans-rational age. This new perspective should not be limited to a purely physical understanding of Nature and ourselves or confined to a religious mindset based on dogmas and scriptures. Instead, it should strive to broaden our awareness and enhance our worldview by incorporating elements such as spirit, spirituality, intuition, introspection, and a more expansive view of life.

This also implies that, if we want to avoid falling into the trap of a materialistic society that is blind to its spiritual origin, we should realize how the future of humanity will be determined much more by the individual and collective evolution of consciousness rather than its technological progress. The understanding of how the dignity of the individual will have to be harmonized with the wellbeing of the collective will play a more central role,

than a conception of society that pursues the solutions to its riddles only by purely technocratic means.

The integral cosmology we are going to discover in Chapter X, describes how, while life on Earth is evolving, we are transitioning toward a new species, rising at a higher state of consciousness, though, to some, facts might suggest otherwise. We are now on an evolutionary verge and transition. Fast and abrupt changes are unavoidable. We are progressing toward a new world and are becoming aware of how, despite its superficial appearances, this is a conscious universe. Recent scientific discoveries that challenge a reductionist materialistic worldview, along with the inability to understand and control various aspects of life and human psychology, highlight a deep longing for meaning, purpose, and goals. These factors will invite us to heed the message of Nature: "I'm conscious."

We start to develop a spiritual awareness that what occurs in life is not a cruel, meaningless, or purposeless play of destiny. Instead, it serves as an external sign of a new consciousness emerging—like labor pains that herald the birth of a better humanity.

'Better' means that, despite all evidence to the contrary, we are moving toward harmony and unity, evolving into a species that is less selfish and less ego-centered, that will eventually have a collective non-dual realization, and that is moved more by an inner spiritual force rather than the outer instincts of survival, greed, and the sense of separation that still conditions us so strongly. It is an integral vision of the evolution of consciousness and an evolutionary journey leading us to the integration between Western materialism and Eastern spirituality, between Spirit and Matter, Spirit and Life, Spirit and Nature.

Many scientists feel the need to go beyond the preconceived and prescribed paradigm but don't really know what to look for and where to go. This spiritual awakening in science and philosophy still manifests itself in a confused manner, resorting to simplistic worldviews that much too often cannot go beyond one's own inherited cultural educational or religious context. The awakening is individual, personal, or expresses itself in small groups, but resists an institutional, academic, let alone political change.

To go beyond, we need to overcome our habitual thinking patterns, transcend beyond binary thinking, learn to realize the limitations of the mind, and transcend the dichotomy of science and religion in favor of the development of a more integral, new way of seeing all of Nature, the universe, science, philosophy, evolution, spiritual teachings and, especially, ourselves in a holistic complementarity. Failing to do so is one of the main reasons why this evolutionary progress, unfortunately, moves from one disaster to the next instead of becoming a more harmonious adventure of consciousness.

Here, I will highlight the necessity to overstep this binary thinking, especially in the domain of science, philosophy and spirituality. I invite people to look beyond matter and body and beyond that kind of purely analytic

philosophy that doesn't allow for anything other than rigorously logical-based reasoning, obstructing further development toward an intuitive vision of Nature and our place in the universe. I reexamine many of the basic tenets of past and modern science, philosophy, and spirituality and show what kind of limitations we have, with what kind of unwarranted assumptions we work, and with what kind of fallacies modern science jumps to conclusions, especially when it comes to consciousness, mind, evolution, divine determination, and philosophical questions with a metaphysical bent.

Modern science and philosophy have rediscovered the mind-body problem, the hard problem of consciousness, the question of free will, of whether the mind is computational, and are beginning to realize that there is a plant and cellular cognition. However, this is only the tip of the iceberg. A whole conscious universe remains to be discovered but it still lingers under our surface awareness because of a short-sidedness and a too-limited perspective that we need to learn to transcend.

One of the main themes will be the introspective turn complementing the rationalistic and scientific approach. I invite readers to contemplate and look beyond the exclusively third-person perspective of science and examine what the introspective first-person approach suggests. I propose a synthesis of knowledge that integrates science, philosophy, and spirituality, rather than excluding any one perspective. This integration creates a whole that transcends each discipline, becoming greater than the sum of its parts.

However, this can be achieved only if, besides a spiritual transformation, we pursue a cognitive transformation that requires a radical change in human nature. We can't get there in one step.

We should first cultivate an awareness of not only what needs to be done but, more importantly, what should not be done. We should become aware of our biases and of the background ideology we still firmly believe and cling to and what kind of thought patterns prevent us from seeing further and proceeding toward this new state of consciousness. We should learn to connect the dots between a materialistic scientific worldview and a subtler spiritual, non-religious approach, avoiding falling into pseudo-science—that is, being careful not to throw the baby out with the bathwater.

In practice, this means that we must first become aware of our limitations; second, deprogram specific thought patterns; and third, learn to see things from different points of view at once–that is, we should become multi-perspectival.[6]

The aim is to shift away from a material, hyperrational worldview and toward a post-material, post-rational, and intuitive, comprehensive, and spiritual mindset–a trans-rational way of seeing and perceiving that makes us aware of how we live in a conscious universe. This transformation is now

[6] Not to confuse with what is nowadays called "multi-" or "inter-disciplinary."

essential, much like how pre-scientific natural philosophy required empiricism to evolve into a Galilean and Newtonian science.

2. Beyond the Naturalist's Meaningless Universe

Fundamental existential questions persist regarding the origin of consciousness and life, particularly how animated matter could emerge from the apparent chaos of inanimate substances. These inquiries delve into the meaning of life, our place in the universe, the universe's origin, and other profound mysteries that are challenging for human reason. There is even a lack of consensus on whether such questions are meaningful at all. Despite centuries of philosophical inquiry and decades of scientific exploration, these phenomena continue to elude definitive explanations.

Perhaps the solution lies not in isolating them but in embracing their interconnectedness as expressions of a deeper, universal principle. We have reached a point where we must seriously question whether the seemingly insoluble mysteries surrounding the origin and true nature of what we call “consciousness” and “life” stem from a rigid philosophical commitment to a strictly mechanistic understanding of reality. This perspective often prevents us from exploring broader possibilities and instills a fear of looking beyond the narrow horizon materialism paints.

The belief that science should rely solely on a third-person perspective—grounded in experiments, measurements, and data, along with reason—has overshadowed the value of a more intuitive and imaginative first-person perspective. This narrow focus has resulted in a multitude of highly abstract theoretical frameworks, often at the expense of deeper cognitive skills rooted in imagination, inspiration, intuition, and curiosity. Ironically, these very skills were essential to the research efforts of the founding figures of modern science.

While science is often seen as a domain governed solely by logic, observation, and empirical rigor, it also relies heavily on human faculties such as intuition, imagination, and inspiration, which stem from a deeper sense of understanding. These elements are essential to scientific discovery, as they help to bridge the gap between the known and the unknown. They enable scientists to envision concepts and frameworks that go beyond immediate evidence. Intuition, in particular, is the ability to perceive connections or anticipate outcomes without conscious reasoning. It typically arises from a deep familiarity with a subject, allowing scientists to identify patterns and relationships that might not be immediately apparent.

Many of the most transformative scientific breakthroughs originated from these intuitive insights.

Contrary to common belief, Isaac Newton might have engaged in experiments and speculations about alchemy far more than he focused on the rational and scientific inquiries in physics as we understand them today. Something compelled Newton to maintain his passion for alchemical and

almost magical ideas. Modern scientific history often dismisses this as a nostalgic attachment to a bygone era. The prevailing interpretation suggests that Newton was still grappling with a pre-scientific tradition. However, his "nostalgia" might also reflect a yearning for a lost aspect of consciousness that he sensed was gradually diminishing.

Despite his lack of formal mathematical training, Michael Faraday relied on his intuitive understanding of physical phenomena to conduct experiments in electromagnetism. He discovered electromagnetic induction, which serves as the foundation for electric generators, and established the groundwork for modern electrical engineering. Most notably, he introduced the concept of the "field." By using his imagination to visualize invisible magnetic fields, he laid the groundwork for a concept that would later become central not only to electromagnetism but also to all of physics.

The German organic chemist August Kekulé famously described a dream in which he saw a snake biting its own tail. This inspired him to formulate the cyclic structure of benzene. Similarly, Dmitri Mendeleev claimed that he discovered the periodic table of chemical elements in a dream. He often remarked, *"No law of Nature, however general, has been established all at once; its recognition has always been preceded by many presentiments."*

In another example, the Scottish microbiologist Alexander Fleming observed that a mold called Penicillium notatum appeared to kill bacteria in a petri dish. Rather than dismissing this initial observation as a coincidence, his intuition compelled him to investigate further. This led to the identification of penicillin, the first antibiotic, which revolutionized medicine and saved millions of lives.

Albert Einstein relied heavily on intuitive reasoning, particularly through his thought experiments, which were deeply intuitive in nature. He used these mental images to grasp complex concepts such as time, space, and gravity. Einstein believed in the invariance of physical laws, asserting that they remain the same regardless of an observer's position or motion and that the speed of light is constant, no matter how fast one travels. However, there was no a priori reason to assume that the structure of physical laws is uniform across all contexts. The notion that the speed of light cannot vary for different observers in different states of motion is profoundly counterintuitive. Nevertheless, it was precisely a deeper intuitive insight that led Einstein to establish these principles as foundational. He accepted them without further questioning, which allowed him to explore the implications they presented.

Many other examples of this sort could be made. Many scientists were led by intuition, imagination, aesthetics, and inspiration that were harmonized with sharp analytic discrimination. Intuition often acts as a compass, pointing scientists toward fruitful areas of inquiry even before rigorous methods confirm the insights. Imagination explores scenarios beyond the constraints of current knowledge. Their synergy became the tool that allowed for creative

problem-solving and conceptual innovation. The interplay between intuition and imagination often defines scientific creativity and constructs hypotheses and models needed to explore them. Together, they drive the process of discovery, whereby ideas are tested, refined, and occasionally transformed by unexplainable insights and unexpected findings.

While empirical evidence, logical analysis, and methodical validation help us to ground creative insights, a sense of reverence for the phenomena of Nature remains the bedrock of philosophical inquiry and scientific progress. On the other hand, an exclusive focus on the power of reason and an almost disregard for the exercise of our innate intuitive and creative faculties hamper the very same scientific progress. This was clearly visible in many of the fathers of philosophy and science.

Aristotle once proclaimed: *"The ultimate value of life depends upon awareness and the power of contemplation rather than upon mere survival".*

In his famous Principia, Newton declared: *"I had the intention of becoming a theologian… but now I see how God is, by my endeavors, also glorified in astronomy."*[7]

Johannes Kepler's vision of celestial mechanics was already in line with a mechanistic understanding of the world: *"I am much occupied with the investigation of the physical causes* [of motions in the Solar System]. *My aim in this is to show that the celestial machine is to be likened not to a divine organism but rather to a clockwork…"*[8] Yet, he realized that this is only one way of seeing: *"Geometry is unique and eternal, a reflection of the mind of God."*[9]

Also, French biochemist Louise Pasteur had no issues in reconciling the empirical approach with intuitive insight. *"As in the experimental sciences, truth cannot be distinguished from error as long as firm principles have not been established through the rigorous observation of facts."*[10] – "*Happy is he who bears a god within himself, an ideal of beauty, and obeys him: an ideal of art, an ideal of the virtues of the Gospel. These are the living springs of great thoughts and great actions. All are illuminated by reflections of the sublime."*[11]

---

[7] Newton, "Principia: The Mathematical Principles of Natural Philosophy."

[8] Letter to Ilerwart von Hohenburg (10 Feb 1605) Quoted in Holton, Johannes Kepler's Universe: Its Physics and Metaphysics, 342,

[9] As quoted in Epilogue, The Sleepwalkers: A History of Man's Changing Vision of the Universe (1959), 524

[10] Ésur la maladie des vers ásoie (1870), p. 39.

[11] Speech (27 Apr 1882) on his reception into the Académie Française, as translated in Maurice Benjamin Strauss, Familiar Medical Quotations (1968), 490.

However, this inner contemplation of Nature and the transcendent gradually faded with the passage of time. The rise of the positivist's mindset led to a dominant reversal in our understanding of the world and ourselves.

Arch-materialist Francis Crick, the discoverer of the DNA molecule, once declared: *"You, your joys and your sorrows, your memories and your ambitions, your sense of personal identity and free will, are in fact no more than the behavior of a vast assembly of nerve cells and their associated molecules."- "You are nothing but a pack of neurons."*[12]

Nobel physicists Steven Weinberg famously noted that *"The more the universe seems comprehensible, the more it also seems pointless."*[13]

Biologist and well know bestseller author Richard Dawkins thinks that *"The universe that we observe has precisely the properties we should expect if there is, at bottom, no design, no purpose, no evil, and no good, nothing but blind, pitiless indifference."*[14]

Historian and popular science writer Yuval Noah Harari: *"As far as we can tell, from a purely scientific viewpoint, human life has absolutely no meaning. Humans are the outcome of blind evolutionary processes that operate without a goal or purpose. Our actions are not part of some divine cosmic plan, and if planet Earth were to blow up tomorrow morning, the universe would probably keep going about its business as usual. As far as we can tell at this point, human subjectivity would not be missed. Hence any meaning that people ascribe to their lives is just a delusion."*[15]

Philosopher David Benatar: *"Earthly life is thus without significance, import, or purpose beyond our planet. It is meaningless from the cosmic perspective. Because this is true of all life, it is true of all sentient life, all human life, and each individual life. Neither our species nor individual members of it matter sub specie aeternitatis. Whatever other kinds of meaning our lives might have, the absence of this meaning is deeply disturbing to many."*[16]

How did we transition from the profound philosophical inquiries that inspired past philosophers and scientists to a science fixated on reducing everything to the cold indifference of Dawkins' universe? Was this shift a

[12] "The Astonishing Hypothesis: The Scientific Search for the Soul," Scribner; Touchstone Edition.

[13] "The First Three Minutes," Basic Books, 1996.

[14] "River Out of Eden: A Darwinian View of Life," Basic Books, 1995.

[15] Sapiens, pg. 331/368

[16] The Human Predicament, pg. 57/289.

progression that brought us closer to the truth, or a regression? Was it a cultural evolution or a devolution?

Unfortunately, over the last century, the prevalence of a strictly third-person materialistic worldview has led to an excessive focus on analytical abstraction in science, often at the expense of deeper philosophical inquiries. While this reductionist approach has produced significant technological and empirical advancements, it has largely neglected the introspective dimensions that once connected scientific research with broader existential and metaphysical questions. Early science did not merely dissect the external world; it also engaged in a more holistic exploration of consciousness, meaning, and the subjective experience of reality. By sidelining this inward turn, modern science has become mechanistic and detached from the very human questions that originally inspired its pursuit—questions about purpose, existence, and the nature of knowledge itself. This neglect has hindered our ability to develop new and original approaches to investigating the natural world and discovering a trans-rational reality. The undervaluation of inner exploration, the subjective dimension, and intuitive forms of cognition in science have severely limited our understanding not only of the world but especially of ourselves. Worse, it has stifled our cognitive skills. We have largely become unable to go inward, to connect with the inner spirit of Nature, and atrophied our intuitive and creative skills.

I believe one reason for this shift toward an exterior focus and the elevation of the analytical mind as the ultimate authority is the unspoken assumption lurking in the background: that intuition stems from our irrational subconscious, which we should ignore. On the contrary, as we will explore, intuition is not merely a byproduct of the subconscious; rather, the subconscious, and even rationality, are pale reflections and artifacts of intuition.

For the rational mind, it can be difficult to recognize how intuition, discernment, aesthetics, and imagination are the silent architects behind many scientific revolutions. These qualities empower scientists to think beyond the confines of existing knowledge, envision the unseen, perceive integrally, and make transformative leaps in our understanding of the universe. By nurturing these qualities alongside analytical rigor, science could advance as a profoundly creative human endeavor as well. To the rational mind, it might seem paradoxical that to cultivate these faculties of consciousness, one must silence the mind. I believe that the overvaluation of rationality is partly responsible for the absence of major scientific revolutions since the early 20th century.

It is time to reassess and amend this attitude. This book has been written in that spirit.

3. Motivations, Structure and Synopsis

This work is a collection of essays complemented by a series of academic articles. I developed these essays because I sought a clear and direct way to advocate for what I believe to be the necessary and inevitable future of science: the end of materialism.

Except for the Advanced Readings each included as sections of the last chapter (Chapter XIII) in this book, I will aim to keep the reasoning less technical. The essays presented will use non-mathematical discursive language designed to be accessible to everyone. At the same time, the reader interested in a further technical account might like to resort also to my book titled "Spirit Calls Nature" (Masi, 2025), where I offer a more academic exploration of what a post-material science might entail, along with a synthesis of insights from science, philosophy, and spirituality. Within its pages, you will find a deeper analysis of several questions we will address here, all framed within the spirit of providing "a comprehensive guide to science and spirituality, consciousness, and evolution in a synthesis of knowledge." This is why there is some overlap with the current volume, particularly in the sections V.1&2 on quantum mechanics, section IX.1 on philosophical idealism, and the integral cosmology of Sri Aurobindo in Chapter X . I chose to reiterate these parts to ensure that each volume remains self-consistent and accessible on its own.

Meanwhile, the present collection can be viewed as a call for a Renaissance—a new post-materialist perspective on the world, Nature, and ourselves. Because the contemporary worldview that seeks to address deeper existential questions is too rooted in a strictly physical and reductionist scientific approach, or resorts to philosophy alone—typically secular and often lacking the profound insights offered by mystical traditions from both Eastern and Western thought. Such approaches fail to move beyond a superficial understanding of appearances. As a result, the absence of purpose and meaning in what seems to be a mechanistic and soulless universe, as presented by conventional science, has left our society grappling with spiritual emptiness and detachment from our spiritual center and, thus, contributes to widespread mental health issues.

In this collection, I have selected distinct, self-contained topics that highlight how science must shift its perspective. While I have attempted to organize them in a logical order, you may choose to read each essay independently, without regard for the sequence provided. While the content and style of my writing can be quite technical, my goal is not to instruct or convey technical knowledge, nor to persuade the reader of a particular truth, reality, or paradigm. Instead, I aim to illuminate the unaware assumptions that often lead us to draw unwarranted conclusions. These essays share a common theme: the desire to look beyond conventional thinking.

They serve as an introduction to the more advanced readings—the technical articles published in peer-reviewed academic journals–and left as an appendix

for the expert readers in the last chapter XIII. While these articles are not mandatory for understanding the essays, they are intended for readers who wish to explore the subjects in greater depth. There may be some repetition, reformulation, or similarities in wording between the essays and the articles. This occurs because my introductory essays were influenced by the published articles, and vice versa.

That being said, upon reviewing the material, you might find that although I assert a departure from a strictly rationalistic and physicalist viewpoint, I often paradoxically rely on physics and a conventional, at times even reductionist, bottom-up approach. The reader might perceive this as a contradiction that does not fulfill one of the primary objectives of the work: to argue for a trans-rational and post-material paradigm.

There are two main reasons for this seemingly contradictory approach. First, it reflects my bias as a physicist. I tend to view questions about the nature and structure of the world from a bottom-up perspective rooted in physics. I'm aware that this is not the only perspective and not necessarily the best or most insightful one. Nevertheless, given my training in certain subjects and not others, I prefer to emphasize the physical aspects I am familiar with before exploring other scientific fields, such as biology and neuroscience, which I also address thoroughly. However, this is only a secondary reason.

The main reason I insist on emphasizing the importance of examining things from a physical perspective, and at times from the viewpoint of sense-based empirical sciences, arguing for a reality that transcends it, is that science itself points to something beyond the physical and empirical. The messages that Nature conveys, even through a limited materialistic lens, hint at an inherent trans-material reality. We don't need to engage in complex metaphysical speculations to recognize that fields such as physics, biology, and neuroscience already suggest a post-material perspective. Already, scientific facts alone imply the idea that the world extends beyond its material surface and encompasses more 'subtle' and transcendental domains. If we fail to realize this, it is only due to our ideological biases. When we overlook something that is right in front of us, it is typically because we filter it out based on our philosophical preferences that reject it. However, if we strive to move beyond our presuppositions and view the same facts from a different angle, we might uncover their deeper significance, even if nothing has changed externally. Therefore, arguing for a reality beyond the current scientific paradigm, while starting from the same scientific approach, is not contradictory; rather, it is a valuable cognitive exercise that enables us to see beyond.

More generally, my approach is to ask different questions rather than focusing on clear-cut final answers. I tried to do this with a list of inquiries in which I don't provide the reader with a final answer but instead point out the kind of fallacies and misunderstandings, and on what kind of superficial

awareness, the standard answer is often based. It is not necessarily the answers I suggest that you need to agree with, as the passage of time might reveal them to be wrong. Rather, it is the approach, mindset, and outlook that I propose as exercise.

This is because, first, the way to knowledge begins by asking the right question. Second, we must become aware of our possible biases and unaware premises. Last but not least, we must learn to embrace the third-person perspective of science with the first-person perspective of intuition and, eventually, go beyond both, synthesizing them into a higher-level position.

Of course, inevitably, I will also dress it with my biases and points of view, but I invite the reader to take notice much more of the "way of seeing," the intuitive feeling, and the multi-perspectival approach, without necessarily agreeing with the conclusions. Because, at this stage, what we need aren't quick and easy answers but questions that exercise the muscle of intuition and imagination. If I induced you to participate in this exercise and led you to the desire to know more, making you aware of some aspects, thought patterns, assumptions, presumptions, and fallacies that you weren't aware of previously, that would be sufficient to say that the aim of this volume has been accomplished.

How is this exercise of intuition supposed to work?

I propose that these apparent inconsistencies stem from our tendency to overlook the interconnectedness of reality. We often perceive certain aspects as mutually exclusive rather than acknowledging them as diverse yet complementary components of a broader cosmology. This perspective can help us unify them into an integral theory of consciousness, matter, life, and mind. To understand the integral structure that supports the diverse orthodox theoretical frameworks, we must recognize some of their common limitations, as follows.

Firstly, the Western philosophy of mind should be more receptive to its Eastern counterpart. The fact that the Asian tradition is primarily a first-person contemplative approach rather than a third-person scientific and analytical understanding of reality doesn't make it less valuable. To the contrary, it serves as a necessary complement to the prevailing rationalistic mindset that continues to influence Western metaphysics.

Secondly, the low-dimensional paradigms that consider reality as purely physical, purely mental, or, at best, a binary matter-mind duality must be re-evaluated. The conflation of mind and consciousness categories also requires reconsideration. This 'dimensional reduction' is a fundamental barrier that has hindered further progress.

Thirdly, theoretical frameworks that view consciousness as fundamental or extend it to a universal consciousness—such as panpsychism and various forms of idealism—often leave the nature of this universalization unexamined. Terms like "cosmic Mind," "universal Mind," or "Mind at large," as A. Huxley

referred to it in 1954, are frequently used without further characterization. This Mind, often capitalized, is typically equated with a rational and analytical anthropomorphized human-like mind. In some interpretations, it is even reduced to an instinctive and blind force or a will devoid of telos and intelligence, as suggested by thinkers like Spinoza and Schopenhauer. However, if we instead consider the possibility of a trans-rational mind and propose the existence of a superconscious in addition to the subconscious, we could arrive at a much richer and more comprehensive understanding of reality.

Fourthly, the aforementioned frameworks rarely address the evolutionary perspective, if not entirely overlook it. What is evolution, and, if any, what role and purpose does it serve from a spiritual standpoint? Accepting evolution as a fact of natural history while also recognizing a non-physical substrate inherent in the material universe requires a paradigm that clarifies the relationship between the two. The emergence of a supposedly trans-physical consciousness and an immaterial mind within the context of physical evolution has been considered by only a few thinkers, such as T. de Chardin in his cosmic theology and J. Gebser in his historical view of the emergence of the 'structures of consciousness,' or in occultism, as seen in R. Steiner's Anthroposophy. Viewing biological evolution not only in terms of evolving organisms but also as evolving souls allows us to approach life from a perspective that opens new horizons.

I aim to develop a comprehensive framework that reveals how, when we remove these reductive glasses, everything aligns within a harmonious overarching vision, causing previous paradoxes to dissolve naturally. This framework is not merely a philosophical analysis; it also emphasizes inner exploration and expands these ideas into a theory of universal consciousness. It is rooted in a monistic, panentheistic, teleological, and evolutionary spiritual emergentist cosmology—a cosmology founded on a multi-dimensional and trans-rational ontology of universal "planes of consciousness".[17] This extension offers enhanced explanatory power for addressing contemporary issues in natural philosophy and science, particularly in the fields of evolutionary biology and consciousness studies, thereby providing a broader platform for reconciling science and spirituality.

My starting point is largely inspired by the vision of the Indian mystic, poet, and philosopher Sri Aurobindo. He developed an integral cosmology that presents one of the most comprehensive first-person mystical accounts of reality, incorporating the evolutionary process from a trans-rational perspective. However, Sri Aurobindo's cosmology is deeply rooted in an

[17] I sometimes refer to it as 'planes of existence,' which is similar to the spiritual 'realms' of existence mentioned in various religions. However, I typically avoid using religious terminology to prevent potential misinterpretations and confusion.

Indian spiritual tradition, which might be challenging for the Western mind—particularly those grounded in the analytic tradition—to relate to. Yet, if translated into modern scientific and philosophical language, his ontology has the potential to significantly enrich contemporary Western approaches to consciousness studies. If I place some emphasis on the spiritual cosmology of an Indian mystic, it is because, of course, his ideas resonate with my personal philosophical preferences. Nonetheless, I believe that his evolutionary spiritual emergentism and cosmology provide the most coherent framework for understanding the world. Sri Aurobindo's approach offers more credible insights into the nature of life, consciousness, and the mind than many current scientific or philosophical speculations, particularly those prevalent in cognitive sciences and the philosophy of mind.

However, I don't pretend that Sri Aurobindo's vision is an established truth or the only perspective; rather, I consider it a starting theory, teaching, worldview, or ontology—not as an absolute truth, but as a working hypothesis, a provisional conjecture, or a hypothetical framework—and I explore where this may lead us. Starting from a working hypothesis has always been the path that has brought us a step closer to truth.

This approach could provide a conceptual platform for a new synthesis, bridging the gap between East and West, as well as between science and spirituality. My project aims to outline a possible draft of this synthesis.

Below is a brief synopsis of the book's structure and how the papers I have published further develop certain arguments.

Chapter II explores the complex and enigmatic nature of consciousness, examining its origins, the so-called "hard problem of consciousness," and the relationship between brain activity and subjective experiences. Consciousness remains a deeply mysterious phenomenon that science has struggled to explain within a materialistic framework, with little progress made since the time of Descartes. Its enigma deepens when it is considered in a broader evolutionary context, prompting questions about why a supposedly purely physical system would evolve to experience subjective sensations.

The widely accepted theory that consciousness arises from brain activity is questioned, as it is unclear how unconscious particles combine to produce subjective experiences. The assumption that anesthesia renders us unconscious is challenged, suggesting that memory and subjective experience might not be entirely erased during such states. The search for the neural correlates of memory reveals that memory is not stored in specific brain areas, and various hypotheses about memory storage remain largely unproven. The conceptual conflation of mind and consciousness is challenged, emphasizing that thoughts are dynamic while consciousness is static and unchanging. At some point, I warn against the correlation-causation fallacy, emphasizing that a correlation between brain states and consciousness does not necessarily imply that neural activity is the cause of conscious experience. The transmissive hypothesis of

William James suggests that the brain acts as a filter or conduit for a broader, non-material universal consciousness, challenging the materialist view.

This chapter can be augmented by the first advanced reading in Section XIII.1 which connects to the transmissive hypothesis with a neurological background. I show how neuroscientific evidence does not point to the mind-brain identity theory as unambiguously as is commonly believed. The background theoretical assumption for the origin of consciousness is always the same: the mind-brain identity theory. It starts from the unquestioned premise that the brain is what produces consciousness. On the contrary, however, a long list of neurological aspects and their phenomenology suggests how several brain functions can best be accommodated inside a transmissive paradigm rather than a generative one.

Chapter III explores the nature of life and evolution, questioning the limitations of materialistic and reductionist views. I agree with those who argue that consciousness and life cannot be fully explained by physical processes alone and suggest that there might be a guiding force behind evolution. In particular, I challenge the rejection of vitalism, questioning whether biology has truly falsified the concept and whether life can be explained without understanding consciousness and cognition first. Here, I discuss the difficulty in defining life, noting that current characterizations focus on materialistic functionalism, which fails to capture the true nature of life. We should incorporate psychological dimensions that the materialistic sciences ignore, and that include consciousness, cognition, thoughts, emotions and sentience, as fundamental primitives rather than emergent properties. This also raises the question of whether humans are the ultimate step in evolution and suggests that internal psychological forces might influence our evolutionary destiny more than outer factors. The increasing complexity of biological and physical systems suggests that our current scientific tools might be inadequate to fully understand life. Modern theories that attempt to explain life and consciousness through complex systems and dynamic processes ultimately still rely on mechanistic naturalism. We must give a chance to alternatives, such as the idea that evolution might be guided by an inner consciousness, thus challenging the idea of evolution as an unguided and accidental process. A perspective that allows itself to contemplate the idea that a “conscious design” may exist, differentiating it from creationism. The suggestion that a more inclusive view that incorporates scientific findings without rejecting the hypothesis that an intelligence in Nature is at work will be the leading idea. A vision of evolution as guided by a cosmic consciousness should be included in a philosophical and spiritual perspective that complements the scientific discourse. This leads to an integral view of Nature advocating for a trans-naturalistic vision that sees Nature as a manifestation of higher consciousness, thus emphasizing the need for a holistic approach that integrates science, intuition, and spirituality.

This chapter can be complemented by the second advanced reading of Section XIII.2 making similar points from a more academic perspective. It points out how, contrary to common wisdom, biology has not finally falsified vitalism—that is, the existence of some no better-defined immaterial or subtle element that distinguishes living matter from non-living matter. The demise of vitalism and the notion that the mind could not be a fundamental primitive but only a fortuitous emerging property of life are commonly taken as an unquestioned fact. However, the truth is that biology simply assumes cognition to be an epiphenomenon of matter and ignores the vitalist hypothesis a priori, whereas there are a good many reasons to think otherwise.

Chapter IV explores the tension between scientific determinism and the possibility of divine action in the World. It begins by outlining the classical view of a causally closed, deterministic universe, where every physical event is the inevitable result of prior causes governed by immutable laws. This mechanistic worldview, rooted in Newtonian physics and the Principle of Sufficient Reason (PSR), leaves little room for supernatural intervention or free will, suggesting that all phenomena—including human consciousness and behavior—are ultimately reducible to physical processes.

However, this strict determinism is challenged by quantum physics, chaos theory, and complexity science, which reveal inherent unpredictability and indeterminacy in Nature. I discuss "quantum theology," a perspective suggesting that the probabilistic nature of quantum events could provide a space for divine influence without violating physical laws. This approach reframes divine action not as a suspension of natural laws, but as a subtle guidance within the indeterminacies and emergent complexities of the universe, allowing for both scientific integrity and theological meaning. However, to get there, a long digression into quantum physics and the notion of free will is needed.

Chapter V discloses my bias as a physicist. It explores the philosophical implications of quantum mechanics and its challenge to materialism, emphasizing the non-deterministic nature of the quantum realm and its potential connection to consciousness and free will. The first two sections closely mirror what I've already detailed in my book “Spirit Calls Nature,” as I felt it was essential for maintaining the consistency of this work. Materialism assumes a deterministic and predictable universe—a view rooted in Laplace's demon thought experiment, which suggests that knowing all forces and positions in the universe would allow for complete prediction of the future. Quantum mechanics challenges the deterministic view by revealing the counterintuitive behaviors of particles, such as wave-particle duality, Heisenberg's uncertainty principle, quantum superposition, and entanglement challenging classical concepts of local realism. The focus is on the fact that quantum mechanics suggests that some phenomena occur without a discernible cause, leading to the idea of quantum randomness and challenging the

traditional cause-and-effect paradigm. I show how this can be interpreted by taking a philosophical stance that questions the materialistic worldview and explores the potential for a non-causal paradigm including divine determination and a universal consciousness. What I call "quantum idealism" proposes that quantum mechanics reveals how reality, as we perceive it, is a mental construct based on the limitations of our sensory-based understanding of the world. I then show how there is a relationship between free will and quantum mechanics and argue that quantum indeterminacy could provide a basis for free will, thereby challenging deterministic views. The concept of "libertarian quantum panpsychism" is introduced, suggesting that quantum indeterminacy is the expression of a universal consciousness, integrating micropsychism and cosmopsychism into a holistic view.

In the midst of this chapter, as a physicist, I could not resist the temptation to ask whether quantum mechanics has something to do with consciousness and the longstanding question of whether we have free will or if it is only an illusion. I ended up realizing that, indeed, it does, but not in the sense in which people usually think of the subject. Here, also, we must widen our perspective and see the brain not as the source or "generator" of consciousness but as an instrument and individuation of a "Mind at large," which we will define later. Then, quantum indeterminism, free will, and self-causation begin to make sense. This view has been extended in a follow-up article on quantum indeterminacy that not only illustrates how quantum randomness can be regarded as a "backdoor" for free agency in an otherwise seemingly strictly deterministic clockwork universe but also how this can lead to a theory of universal consciousness—that is, a libertarian panpsychism.

This chapter on quantum physics and free will finds its completion in the two papers of the Advance Reading Sections XIII.3&4.

Chapter VI provides a deep dive into the mind-body interaction problem of mental causation from the standpoint of physics. The interaction problem questions how a supposedly immaterial mind could affect a physical body, thus challenging both materialistic and dualistic views. Descartes' dualism posits the mind as a non-material substance separate from the body, but modern science has largely moved away from this view. Physicalism suggests that all mental states are just brain activity, yet this view is controversial and faces the hard problem of consciousness. What is rarely recognized is that physics already deals with interactions between material and immaterial entities, like electromagnetic fields.

This, in turn, suggests that the mind-body problem might not be unique to the philosophy of mind but is inherent in material sciences as well. However, quantum field theory (QFT) blurs the line between material/physical and immaterial/unphysical, with particles seen as different modes of a single field. This hints at a unified substance, leading us to conjecture about the existence of "subtle matter," which interacts weakly with ordinary matter.

The question that arises is what the ultimate distinction between "physical" and "unphysical" entails. Anything that exists beyond space, time, and quantum fields—structures that may be emergent rather than fundamental—can be classified as beyond the physical layer. However, as we will explore, there are intermediate ontologies that do not fit neatly into either category.

The chapter can be considered a preparation to the article in the Advanced Reading Section XIII.5.

Chapter VII closes the circle started in Chapter IV, taking up again the relationship between scientific determinism and the possibility of divine action in the light of what has been discussed in the three preceding chapters. It challenges the classical view that the universe operates as a causally closed and deterministic system. It highlights how quantum mechanics and chaos theory reveal fundamental indeterminacy and unpredictability at all scales of reality, not just the microscopic. This openness in causality suggests that the future is not predetermined, and that even small quantum fluctuations can be amplified in nonlinear, chaotic systems, making long-term predictions impossible and allowing for the possibility of free will and divine influence.

Perhaps the most technical paper is the Advanced Reading Section XIII.6. It is likely beyond the grasp of readers without a physics background. However, don't worry; it is a bonus and not mandatory for understanding the rationale of the argument. The main point is that divine action is not only coherent with our modern understanding of the world, but when viewed from the appropriate perspective, we can see how it is even suggested.

Chapter VIII leaves behind the quantum perspective and integrates the Eastern and Western views on free will. Western views on free will suggest that it is an illusion created by Nature's determinism, while Eastern philosophies propose a "higher self" that transcends this determinism. The integration of both into a unitary vision offers a richer understanding that suggests that what we perceive as free will is part of a broader, more complex reality.

Chapter IX begins to explore the concept of idealism. It questions the nature of reality and whether it is an illusion or a simulation, as some modern thinkers propose. Additionally, it delves into philosophical arguments, scientific perspectives, and historical viewpoints from both Western and Eastern traditions. I recall my childhood question about whether life is just a dream and how this question persisted into adulthood, leading to my study of Indian non-dual teachings of Advaita-Vedanta. I connect this to the modern simulation hypothesis, which suggests that our reality might be an artificial simulation, and discuss it as a modern, technologically influenced version of age-old philosophical ideas like Plato's allegory of the cave. Contrary to common belief, taking the simulation hypothesis seriously does not lead to what the techno-centered mindset believes but, rather, confirms philosophical

idealism, positing a self-simulating and self-causing "simulator" akin to the concept of "God."

This is the basis for discussing how the brain constructs our perception of reality and how this construction detaches us from the actual reality, thus emphasizing the illusory nature of what we perceive. This can be illustrated via a purely scientific perspective with a detailed explanation of how visual perception works, illustrating how the brain processes and interprets sensory information far removed from the actual objects it perceives. Plato's allegory of the cave is further used to explain how our perceptions can limit our understanding of reality, comparing our sensory experiences to shadows that do not represent the true nature of objects.

Spinoza's idea of substance monism, which posits that only one substance exists and that mind and matter are different attributes of this substance, is examined. This, in turn, lays the groundwork for one of the fundamental aspects of the monistic outlook inspiring the "integral cosmology"—namely, substance monism.

This connects with Eastern philosophies like Taoism, Buddhism, and Hinduism, highlighting their views on the nature of reality, consciousness, and the illusion of the phenomenal world. Sri Aurobindo's concept of the Real-Idea, which integrates idealism and evolution, thereby suggesting that a greater Intelligence and Will are at work in the universe, is discussed. The chapter concludes with the idea that understanding the illusory nature of reality and the role of a higher consciousness is crucial for moving beyond a materialistic worldview and embracing a post-material future.

Chapter X spells out the core idea of the integral cosmology.

I examine idealistic approaches with a critical eye for their failure to provide a coherent evolutionary perspective and for their coarse-grained theoretical frameworks. Idealism is a crucial step forward that allows us to move beyond a strictly physicalist worldview. However, idealism alone is insufficient; it leaves us halfway on our journey toward an integral paradigm.

This leads me to the proposal of a wider, more comprehensive and evolutionary integral cosmology that views consciousness as the fundamental primitive, with life, mind, matter, the subconscious, and the superconscious as different planes of consciousness. A hypothesis suggesting that the brain, rather than generating consciousness itself, instead serves as a filter and interface between these different planes of consciousness. This aligns with William James' filter theory.

The concepts of evolution and involution are introduced, with consciousness first involving itself in matter and then evolving through various forms, thus leading to a more comprehensive understanding of life's complexity. The idea of a spiritual evolution paralleling that of a purely physical evolution is introduced. This part discusses the evolution of the soul, proposing that the soul grows through life experiences and transmigrations, in

turn influencing biological evolution and providing a deeper understanding of our true spiritual and physical nature. It is a conception of the world, life, and our inmost nature that reflects a spiritual emergentism, reconciling mechanistic and teleological views of evolution, suggesting that the evolution of species is guided by a top-down influence of a superconscious spirit, complementing the bottom-up unconscious emergence. This allows us to connect with the question of free will from a much broader perspective. The integral cosmology sees free will as a continuum, not a dyadic choice, with true freedom achieved by aligning with the superconscious Will rather than being constrained by the deterministic laws of the lower planes.

This chapter concludes with another essays that I published on these aspects in the Advanced Reading Section XIII.7. The paper lays the groundwork for a larger synthesis of how Eastern spiritual thought could be bridged with Western philosophical and scientific approaches: the article in the advanced reading section which illustrates the integral cosmology of Sri Aurobindo from the perspective of consciousness studies.

Chapter XI brings us back to more earthly questions that, however, are related to metaphysical worldviews. What we have learned in the previous chapters is now applied to an instance of our present age: AI. This chapter discusses the limitations of current AI technologies—particularly large language models (LLMs)—in attaining true artificial general intelligence (AGI), which cannot be achieved unless AI realizes a true semantic understanding of the world. ChatGPT and similar LLMs have no conscious experiences, no life, no sentience, and generate responses based on patterns in their training data rather than by being rooted in genuine understanding. They rely on numerical representations of words instead of human-like percepts. The claim is that achieving AGI necessitates the creation of conscious machines—a goal far beyond the current scientific understanding of consciousness in organic intelligence. Strong AI, or AGI, implies machines that truly understand meaning, whereas weak AI only simulates human intelligence without true comprehension. This discussion is meant as an exercise to highlight the enormous investment in financial and human resources we are throwing into projects that might be doomed to failure because they are based on a naturalistic and materialistic understanding of our true nature.

I argue that we need a paradigm shift and an entirely different perspective. Therefrom originated the two advanced readings at the end and that complete this chapter. The first reading is a manuscript on the relationship between consciousness, cognition, and the potential advent of the age of AGI. Here, I showed how semantics—that is, our cognitive ability to associate meaning with things and concepts—is intimately related to conscious experience. The kernel is that language is the translation into symbols of a cognitive process that does not take place in the brain but is beyond the brain. If so, the natural conclusion is that an AI system cannot achieve an agent's semantic

understanding of a text or of the environment and the world if the AI system is not also conscious, no matter how complicated and powerful it might be. No consciousness, no semantics, no AGI.

The first part was taken up in the Advanced Reading Section XIII.8.

This led me to less-known but equally fascinating post-material subjects. One example is an essay left for the readers willing to dig deeper in the Advanced Reading Section XIII.9, and that summarizes Abhinavagupta's and Sri Aurobindo's perspectives on a possible spiritual explanation of the nature and origin of speech. Language is the reflection and a pale shadow of cognitive processes that take place far beyond a mere representational framing of the world. It is ultimately rooted in a spiritual domain that exclusively transcends the computational process.

Finally, chapter XII concludes discussing how we can take a step further toward a post-material paradigm. It examines the limitations of materialistic science and technology in addressing humanity's deeper issues and advocates for a post-material paradigm that integrates spiritual insights and inner wisdom. Despite significant technological progress, many scientific and technological projects have not met expectations, leading to a sense of disillusionment with their ability to solve humanity's deeper problems. Many advancements, such as the war on cancer, genetic engineering, and stem cell research, have not delivered the expected practical applications—a fact that highlights the complexity of life and the limitations of a purely materialistic approach. Scientific and technological progress was expected to ease our daily activities; however, it has not improved psychological well-being, as stress and burnout continue to rise. Material progress does not equate to inner fulfillment, which suggests that humanity's deeper issues stem from a lack of spiritual and psychological harmony.

Only a post-material science that integrates subjective, first-person perspectives, thereby complementing traditional empirical methods, can lead us further. Only something that calls for transcending the dichotomy between science and spirituality, suggesting that both must evolve toward a more integrated understanding of reality, will be able to lead us to the breakthrough that the traditional approach is unconsciously looking for. I emphasize the importance of embracing the mystical experience and propose that it offers valuable insights into reality that complement scientific understanding. Moreover, I discuss the need for an integral cosmology that sees the whole rather than just the parts, thus advocating for a multi-dimensional, evolutionary perspective of life that could lead us to a new form of psychology beyond the present naturalistic understanding of the human dimension. We need something that leads us to a standpoint calling for a Copernican shift from a matter-centered worldview to a soul-centered one, suggesting that true progress requires integrating spiritual insights with scientific understanding.

The desire and aim to put all these works together into a coherent vision led me to write this book. I hope it provides a comprehensive perspective on what I believe will become the post-material scientific and spiritual perspective on reality, life, and consciousness of the future.