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Cosmology and consciousness: toward an ontological interpretation of contemporary science. A critique of reductionism and the question of the immaterial order in contemporary science

Boštjan Marko Turk

Faculty of Arts, University of Ljubljana, Slovenia

Correspondence: Boštjan Marko Turk, University of Ljubljana, Faculty of Arts, Askerceva 2, SI-1000 Ljubljana, Slovenia.
E-mail: bostjan-marko.turk@euro-acad.eu

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ABSTRACT

This interdisciplinary philosophical review examines the relationship between contemporary science and ontological questions of reality, focusing on cosmology, quantum physics, biology, and consciousness studies. The Big Bang theory implies a temporal beginning of the universe, raising questions about causality and the origin of physical laws. Developments in quantum theory and information-based approaches describe reality in increasingly abstract, mathematical terms, challenging classical materialist interpretations. The informational character of DNA and the persistent hard problem of consciousness further question the adequacy of reductive physicalism. Adopting an interdisciplinary approach, the paper critically evaluates the epistemological assumptions underlying much of modern science and explores whether recent scientific insights support an expanded concept of reality that includes an immaterial order. It argues that contemporary science, when interpreted philosophically, does not necessitate a strictly materialist ontology and suggests the need for a more comprehensive framework integrating scientific findings with philosophical and metaphysical perspectives.

Key words: cosmology, Big Bang, ontology, quantum physics, consciousness, information, reductionism, philosophy of science, materialism, non-material order.

Introduction

Humanity is entering a new era, likely the most significant since the Industrial Revolution. While the latter represents a technological novelty—including the changes brought about by AI—the era being foretold belongs to the realm of fundamental, first-order transformations.

In perspective, humanity will return to its starting point: it will once again become a spiritual being defined by its own body. Thus, it will revisit the premise it left at the beginning of the modern era, when science separated itself from spirituality. Until that moment, spirituality had been an integral part of scientific inquiry. Aristotle wrote a book titled Physics (Aristotle, 2021). While this work dealt with the material world, his next work extended this inquiry to the spiritual realm, the world "beyond" physics. It bore the title Metaphysics (Aristotle, 2021).

Descartes, the father of modern rationalism, taught that humans are composed of two units: the soul as a pure substance (to which he added the spirit, that is, consciousness), and the acci-

dentality (or necessary mortality) of the body. He wrote: "*The human body, in so far as it differs from other bodies, is formed and composed only of a certain configuration of parts, together with other similar accidents; the human soul, on the contrary, is not composed of any accidents, but is a pure substance. For although all its accidents may change—for example, when it conceives certain things, desires others, or feels still others—it remains ever the same soul, whereas the human body is no longer the same merely by the alteration of the shape of some of its parts. Whence it follows that the spirit, or soul of man (which I do not distinguish), is immortal by its very nature*." (Descartes, 2011, 51)

This dualistic conception has been characteristic of philosophical and religious teaching since its beginnings and remains dominant in most parts of the world outside Western civilization even today.

With Isaac Newton—though against his existential intention, for he was a deeply religious man with strong interests in esoteric and alchemical traditions, including Rosicrucian writings—science began to separate itself from philosophy and theology. Newton believed that the laws of nature express God's wisdom, yet, through experimentation and the application of mathematical methods, he laid the foundation for independent, empirical investigation of the natural world. His work demonstrated that the universe could be explained through objective laws without necessarily invoking metaphysical or religious interpretations.

Over time, science became increasingly autonomous. By the end of the 19th century, the philosophy of positivism prevailed. This philosophy held that knowledge is legitimate only if it is based on observation, experimentation, and logical analysis. Reality consists of what can be observed, measured, or calculated mathematically; anything that cannot be directly perceived or practically quantified is considered nonexistent for science. Consequently, observation, reproducibility, and experimental control became central methodological principles.

The rise of positivism simultaneously triggered philosophical and social reflections. Science had indeed become an instrument for understanding nature, but also a tool for technological progress, industrial development, and the organization of social systems. While the emphasis on empirical evidence strengthened confidence in technology and the rational method, it also increased the tension between scientific objectivity and religious or metaphysical beliefs. Some critics have pointed out that positivism limits our understanding of humanity and society, as it overlooks subjective, ethical, and aesthetic dimensions that the empirical method cannot capture.

Thus, by the end of the 19th century, science had achieved a degree of autonomy that enabled it to become an independent discipline, capable of generating theories and technologies independently of philosophy, religion, or ideological frameworks. Yet precisely because of this independence, new questions arose: what transcends empirical perception, and how should one understand the world if there are realities that cannot be directly proven through experiment?

From Aristotle to Laplace: the epistemological break and the loss of the transcendent in science

Yet it was precisely the separation of science from spirituality, cemented by positivism, that confined humanity to the realm of the merely observable and measurable world, while experience, inner life, and the spiritual dimension were pushed to the margins. Positivism claimed that only what is directly perceptible or quantifiable exists, which led to key questions about meaning, ethics, the soul, and subjective experience being deemed "unscientific" and therefore invalid.

As a result, humanity began to live in a world where spirituality, inner wisdom, and moral reflection were degraded to matters of personal preference, rather than being recognized as integral to a full understanding of reality. The consequence of this was the crisis of modern man: the advancement of technology and science went hand in hand with a deepening spiritual void, as the positivist framework forbade the recognition of the invisible, the inner, and the transcendent as legitimate dimensions of human existence.

To illustrate: one of the most important scientists of the Enlightenment, Pierre-Simon Laplace, explained to Napoleon Bonaparte that he did not mention God in his scientific work *Mécanique céleste* (Laplace, 2014) because he did not need this hypothesis to explain the motion of celestial bodies. In doing so, he did not necessarily deny the existence of God in a theological sense but rather took a methodological stance: science should use only those hypotheses that are necessary for explaining phenomena. In this regard, Laplace built upon the work of Isaac Newton, who had laid the foundations of celestial mechanics but still allowed for the possibility of divine intervention to maintain the stability of the universe. Laplace, however, used mathematics to demonstrate that the motion of planets and other celestial bodies can be explained as a completely deterministic system operating according to precise natural laws, without the need for metaphysical justification.

In doing so, he emphasized that natural phenomena can be explained by mathematical and physical laws without resorting to supernatural explanations—a hallmark of the scientific and rational spirit of the Enlightenment. His thinking is also linked to the idea of the so-called Laplacean demon, according to which, with perfect knowledge of all laws and initial conditions, it would be possible to calculate both the past and the future of the universe. Laplace's reply to Napoleon is thus not merely an anecdote, but an expression of the transition to a type of science grounded in methodological naturalism, where the explanation of the world relies on universal, mathematically describable laws rather than on supernatural causes. In short, Aristotle's *Physics* without the ontological foundation of *Metaphysics*.

However, we must be mindful of the following: his statement did not *ipso facto* imply a denial of God in a personal or theological sense but merely expressed a methodological stance: science should operate only with those hypotheses that are necessary for the explanation of phenomena. If a phenomenon can be explained by natural laws, then the introduction of a supernatural factor is not scientifically justified. This principle is known today as methodological naturalism and has become the defining feature of science grounded in a positivist understanding of the world.

Such a position can also be critically evaluated. The approach that follows from this—often referred to as the "God of the gaps"—is indeed justifiably subject to criticism insofar as it reduces God to filling gaps in knowledge; yet at the same time, it reveals the limitations of a strictly Laplacian perspective. If science, in principle, renounces any reflection on the transcendent and confines itself to the realm of the merely measurable and mathematically describable, then it risks overlooking the question of the very foundation of the laws it describes.

Here the difference becomes apparent in comparison with the ontological-metaphysical tradition of Aristotle, which did not seek explanations solely in immediately observable causes, but in the

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deeper principles of being.[1] From this perspective, it can be argued that both the "God of the gaps" and strict Laplacian methodological naturalism share a common limitation: both stem from a narrow conception of explanation. The former introduces God as an *ad hoc* supplement to ignorance, while the latter methodologically excludes Him from the outset.

Therefore, it is objectively possible to criticize not only the concept of the "God of the gaps," but also Laplace's implicit assumption that a complete mathematical-physical explanation is sufficient for understanding the entirety of reality. While this approach successfully explains how nature works, it does not necessarily explain why laws of nature exist at all or why the universe is ordered in a way that can be rationally grasped. In this sense, we can say that the Enlightenment break not only rejected the old ontological methodologies but simultaneously opened a new kind of philosophical problem: the question of whether science, limited to methodological naturalism, can truly provide an exhaustive explanation of existence.

It should be added that the separation of science from philosophy and, consequently, from theology was particularly welcomed by totalitarian systems, as such an epistemological framework made it easier for them to subjugate humanity. If reality is defined exclusively in terms of the material and the measurable, then human beings too become objects of management, optimization, and control. Without a foundation in one's own reason—independent of social circumstances—which, as Descartes taught, is grounded in God and thus bears the stamp of absoluteness, the individual loses the internal standard by which to judge the legitimacy of authority or the morality of its demands.

In such a framework, reason is no longer an instance of truth but a tool of adaptation; it no longer serves the search for essence but merely effective orientation within already given systems. This means that the human being is no longer a subject but becomes an object—no longer the one who judges, but the one who is judged; no longer the one who acts freely, but the one embedded in the mechanisms of social, political, or technological determinism. The totalitarian systems of the 20th century took this logic to its extreme: when transcendence is excluded from the understanding of the world, the absolute limit of power also disappears, since there is no longer any authority standing above it.

Reductionism, positivism, and the ontological void of contemporary Europe

This logic can be clearly recognized even in the foundational texts of revolutionary thought. Karl Marx wrote in the Communist Manifesto: "*The executive of the modern state is but a committee for managing the common affairs of the whole bourgeoisie*."[2] In doing so, he defined the state as an instrument of class interest, not as the bearer of universal or transcendent justice.

Vladimir Lenin, however, radicalized this idea in the direction of direct political practice when he wrote: "*The dictatorship of the proletariat is a persistent struggle—bloody and bloodless, violent and peaceful, military and economic, educational and administrative—against the forces and traditions of the old society*." (Lenin, 1964, 44) From this perspective, it becomes clear that power is understood as an absolute force that has no external standard, deriving its legitimacy from its own goals and historical necessity. If there is no transcendence to set a limit on political action, then the means are no longer restricted: violence, coercion, and control become legitimate instruments for transforming society. This confirms that the separation of science, philosophy, and theology is not merely a methodological issue, but opens a space for understanding the world in which man loses his ontological grounding and, with it, his inner freedom.

Therefore, the separation of science from philosophy and theology was not merely a methodological shift but had far-reaching anthropological and political consequences. By reducing the human being to an empirically perceptible being, it rendered humans vulnerable to ideologies that treated them as means rather than ends. It is precisely in this sense that the internal tension of the positivist project becomes apparent: although it brought about extraordinary scientific and technological progress, it simultaneously opened the door to dehumanization. By excluding from the understanding of humanity the dimension that grants it inalienable dignity and freedom, positivism produced a profound ontological void.

And if one were to think that the ideological armor cracked with the fall of the Berlin Wall or with the collapse of fascism and Nazism (1943-1945), one would be mistaken. The historical collapse of totalitarian regimes did not signify the collapse of their fundamental epistemological premises. These regimes were not merely political constructs, but expressions of a specific understanding of reality that does not dissolve with institutional demise. Precisely because their foundational premises—the reduction of the human being to an immanent given, the exclusion of transcendence, and the subordination of truth to the functionality of the system—were embedded in the broader intellectual and scientific horizon of the modern era, they survived the fall of their political vehicles.

In a modified, more tempered, and often concealed form, this pattern of thought is still present today: through what is called the ideology of wokism, which stems directly from Marxism and draws inspiration from collectivism, it now dominates many institutions in the European Union. Europeans experience this totalitarian reflex of human ontological alienation every day, often without realizing it. The direct consequence of this is that Christianity, as the central bearer of spirituality in the West, has become a religion *non grata* in the EU. This narrative applies not only to European institutions in Brussels but is spreading throughout the entire Union. The ideology of materialism and consumerism—grounded on the one hand in Marxism and on the other in pseudo-liberalism, or the primacy of consumerism[3]—perceives everything related to the spiritual aspect of humanity, defined by Cartesian dualism, as unnecessary and undesirable.[4]

Man is reduced to a collection of cells and chemical reactions in a randomly organized universe. Consciousness, meaning, being, nothingness, and God are supposedly mere illusions arising in the cerebral cortex. In the event of death in a hospital, the discharge form reads simply: "end."

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1 For example, in final and formal causes.

2 https://www.marxists.org/archive/marx/works/1848/communist-manifesto/ch01.htm, accessed: March 27, 2026.

3 Pseudo-liberalism emphasizes individual freedom but often narrows it down to freedom of choice in the market. Thus, the idea of personal freedom translates into consumerist logic, where the individual expresses their identity primarily through shopping and lifestyle. Consumerism thus becomes a practical form of pseudo-liberalism, as it creates a sense of choice and individuality while simultaneously obscuring broader social and economic constraints.

4 For a comparison, see the analysis in Turk, B.M. (2025). War in the Name of Peace – The Revolution '68 and the Disintegration of the West. London, Arktos.

The same reductionist principle manifests itself in the entirely practical aspects of everyday life. Childbirth is treated as a biomechanical process, whereby the spiritual or existential significance of birth is excluded from standard protocols or left to the private initiative of the parents, as evidenced by guidelines for intrapartum care, which focus on physiological and psychological aspects without systematically incorporating the spiritual dimension (National Institute for Health and Care Excellence, 2023).

Depression is defined as a chemical imbalance, primarily of serotonin, and is primarily treated with pharmacological agents, while a spiritual or existential crisis is not recognized as an independent cause in official diagnoses such as the DSM-5 and European guidelines (American Psychiatric Association, 2013). Palliative care focuses on the relief of physical pain and psychosocial support, although spiritual care is mentioned in the World Health Organization's definition as part of a holistic approach—"*palliative care … whether physical, psychological, social, or spiritual*" (World Health Organization, 2020)—but in practice, it is often the least developed, optional, and not always systematically funded in European countries.

Education presents the human being exclusively as a biological machine through evolutionary biology curricula across Europe, where the soul, transcendent meaning, or spiritual dimension are not mentioned, and the human being is treated solely as part of evolutionary processes (Panayides *et al.*, 2024).

In countries where euthanasia is permitted, such as Belgium and the Netherlands, the decision to end a person's life is reduced to a medical assessment of unbearable suffering and quality of life, with no consideration given to the ontological or spiritual value of existence—the law requires "*constant and unbearable physical or mental suffering … that cannot be alleviated" as a consequence of a "serious and incurable condition*" (Belgian Act on Euthanasia, 2002; Dutch Termination of Life on Request and Assisted Suicide Act, 2002).

Transhumanism and neurotechnological projects treat humans as upgradeable biological hardware, with the European Union having invested hundreds of millions of euros—a total of approximately 406 million EUR in direct EU funding within a total budget of around 607 million EUR—into research that treats consciousness as a computational process (Human Brain Project, 2013–2023).

All these examples are not coincidental. This represents a consistent promotion of a materialistic view, according to which a human being is merely a body and a brain—nothing more. The result is a society in which we wake up every day with the implicit message that we are merely biological machines. The roots of this lie in the Enlightenment, or rather in the period when the West abandoned Cartesian dualism between *res cogitans* and *res extensa*.

This situation—the prevailing materialistic and secular conception of the world and humanity—still dominates the public sphere, education, and the media today, but it will not last long. It cannot last, because modern science, with its latest discoveries, is systematically dismantling and refuting this old, simplified picture of reality. Every major discovery in physics, biology, and cosmology reveals a deeper, more complex, and more wondrous structure of the universe, precisely in the sense of Pascal's paradigm, which places humanity between the microcosm and the macrocosm, drawn by God's plan into the center of all that exists.[5] Blaise Pascal, one of the most important pioneers of European science,[6] would be an excellent guide to the world of a new paradigm that is increasingly at odds with the mechanistic and reductionist view that has prevailed over the past two centuries.

A little science distances man from God, but a great deal of science brings him back. Today's science possesses a colossal apparatus—the most powerful telescopes, particle accelerators, supercomputers, CRISPR technology, quantum sensors, and a global network of research institutions—that enables it to conduct research at levels that past thinkers could only dream of. Therefore, the "scientific claims" that took shape from the Enlightenment through late 19th-century positivism to the mid-20th century appear, in many respects, inadequate, outdated, and ill-suited to the current state of knowledge.

Mechanical materialism, which reduced humanity to merely a complex machine, a blind evolutionary accident, or simply a collection of chemical reactions, is increasingly crumbling and losing its persuasiveness under the pressure of new data on the fine-tuning of the universe, the unsolvable problems of consciousness, the informational nature of reality, and the incredible complexity of biological systems. Science thus does not turn us away from transcendence, but with every truly profound insight brings us closer once again to the question of meaning, origin, and purpose.

The Big Bang theory: physical evidence and philosophical implications

The first blow from science, which had excluded spirituality and God from its horizon, came with the Big Bang theory. In the 1920s, more advanced telescopes enabled a revolutionary discovery. It became possible to observe (and subsequently calculate) that galaxies are moving away from one another at a rate that increases with their distance from each other. This meant nothing other than that the universe is expanding. And if it is expanding, then the expansion must have started somewhere. Whereas it had previously been thought that the universe was eternal, it was now becoming increasingly clear that this was not necessarily the case, and that matter—and with it, time and space—had a beginning or at least a finite past boundary within current physical models.

[5] In the 17th century, Blaise Pascal wrote about two infinities whose intersection is the human being: one observes the universe, and one star leads to another, that to a third, and so on into an infinite dimension whose center can be anywhere, but whose circumference (end) is nowhere. To this he added: let man then look within himself and contemplate the finest particles of which he is composed; let his thought extend to the atom and beyond, into the unknown. With this, Pascal conceived one of the most perfect definitions of the human being in relation to his own spirituality and God. *"For in the end, what is man in nature? Nothing compared to infinity, everything compared to nothing, the middle ground between nothing and everything. Infinitely far from comprehending the extremes, the purpose of things and their origin are hidden from him behind unbreakable seals; he is equally incapable of perceiving the nothingness from which he emerged and the infinity into which he is plunged. What else remains for him but to observe the illusions in the middle between everything and nothing, in the certainty of eternal despair, that he might ever fathom the mystery of the origin and purpose of visible things? For everything, indeed, proceeds from nothing and extends to infinity. Who will follow in the footsteps on a path of such staggering magnitude? Only the creator of these wonders is capable of this. Anyone else is powerless here."* (Pascal 2023, 54)

[6] The unit of pressure named after him—the pascal (Pa). He researched pressure in liquids and gases, formulated Pascal's law, and invented the Pascaline, the first mechanical computer, after which the computer language Pascal was later named.

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This discovery, which Edwin Hubble definitively substantiated in 1929 with the famous Hubble's Law (Hubble, 1929), completely transformed our understanding of the universe. As early as 1927, the Belgian priest and physicist Georges Lemaître, based on Einstein's equations of general relativity, proposed the hypothesis of a "primordial atom" from which the universe expanded—an idea that later became the foundation of the Big Bang theory (Lemaître, 1927).

Albert Einstein himself was initially strongly opposed to the idea of an expanding universe, as he believed in a static and eternal cosmos; for this reason, he added a cosmological constant to his equations, which he later described as the greatest blunder of his life. Science thus initially moved away from the assumption of an eternal universe toward models in which the universe has a finite past within the framework of contemporary cosmology.

Confirmation came in 1965, when Arne Penzias and Robert Wilson discovered the cosmic microwave background (Penzias & Wilson, 1965). For this important discovery, which provided strong experimental confirmation of the Big Bang theory, they received the Nobel Prize in Physics in 1978. The cosmic microwave background is, in fact, residual heat from the earliest phase of the universe, when it was still very dense and hot, providing strong evidence that the universe evolved from an extremely compact and hot initial state.

Philosophy, or rather logic, then came to the conceptual foreground: there is a classical principle of thought—*nihil ex nihilo*: nothing can come from nothing. If the universe once began, then its existence calls for an explanation of its origin. For nothing can come from nothing. This line of reasoning has been interpreted by some philosophers to suggest that there must be a grounding reality or cause beyond the physical universe, something transcendent to matter, space, and time—existing outside and prior to them. Such a being has traditionally been called God, or the First Cause, or the Great Architect in Masonic terminology.

In the 1970s, science further refined cosmological models with the Hawking-Penrose singularity theorems: under general relativity, the universe must have had a singularity in the past—a region where space, time, and matter originate, and where the laws of physics, as we know them, cease to apply (Hawking & Penrose, 1970). This was not merely a mathematical theorem, but a logical consequence of the expansion we observe within the framework of general relativity.

An even stronger argument was provided in 2003 by the Borde-Guth-Vilenkin theorem, which shows that any average expanding universe—regardless of the details of the physical models—cannot be past-eternal and must have a past boundary, that is, a beginning in the past (Borde *et al*., 2003). Astronomer Robert Jastrow summarized this interpretation by noting that, using their own methods, astronomers arrive at models in which the universe has a beginning in what may be described as a "creation-like" boundary condition (Jastrow, 1978).

In totalitarian systems based on atheistic ideology—especially in the Soviet Union under Stalin and later—scientists who supported the Big Bang theory and rejected the eternity of the universe were systematically punished and ideologically persecuted. The Big Bang, in this interpretative context, was often seen as incompatible with dialectical materialism, which favored an eternal, self-sufficient universe without a transcendent origin.

In 1947, Andrei Zhdanov, one of the leading ideologues, directly attacked relativistic cosmology and the Big Bang theory in a speech at a conference of Soviet philosophers (June 24, 1947). He labeled the "reactionary scientists Lemaître, Milne, and others" as those who, through the redshift of galaxies, reinforce religious interpretations of the universe, and explicitly stated: "Falsifiers of science want to revive the fairy tale of the origin of the world from nothing. … Another failure of the 'theory' in question consists in the fact that it leads us to the idealistic assumption that the world is finite." (Zhdanov 1947; cited in Kragh 2012).

Cosmology was labeled pseudoscientific and bourgeois, and research in the Western sense was practically banned for a decade. Scientists who did not follow the party line were sharply criticized, accused of "posing a threat from the Western," "cosmopolitanism," and "idealism"—among them distinguished physicists such as Lev Landau (later a Nobel laureate), Abram Ioffe, Peter Kapitsa, Yakov Frenkel, and Moisei Markov. Their careers were jeopardized, their publications restricted or banned, and cosmology reached a dead end as scientists were forced to seek alternatives that preserved the eternity of the universe.

Similar ideological pressures were also experienced in other communist regimes, where any thought of the universe having a beginning was suspect, as it was sometimes perceived to challenge dominant materialist frameworks.

In the 1970s, science thus further developed models in which the universe appears to have a finite past within standard cosmological assumptions, which some philosophical interpretations take to be compatible with the idea of a transcendent grounding reality. Contemporary philosophy has further developed this idea into the *Kalam* cosmological argument, which states simply: everything that begins to exist has a cause; the universe began to exist; therefore, the universe has a cause. This cause, however, cannot be part of the universe itself, since it would then be subject to space and time—and is therefore interpreted in some philosophical traditions as transcendent, eternal, and not dependent on a prior cause.[7]

Contemporary science and logic converge on the insight that the Big Bang strongly suggests the plausibility of a transcendent grounding reality or First Cause beyond the physical universe — traditionally interpreted in philosophical and theological traditions as God. By persecuting scientists, totalitarian systems only further revealed how strongly this discovery threatened their atheistic dogma.

The primacy of the immaterial order in modern physics

In recent years, modern physics—particularly quantum theory and field theory—has increasingly revealed that the world is not merely a solid, directly perceptible material reality, as understood

[7] The modern proponent of the Kalām cosmological argument is William Lane Craig (born 1949), an American Christian philosopher and theologian. In the 20th century, Craig significantly revitalized and modernized the medieval Kalām argument, presenting it in a contemporary analytical form. He did so primarily in his influential book The Kalām Cosmological Argument (1979), in which he supported the argument both with philosophical reasons (particularly the impossibility of an actual infinite number of events in the past) and with scientific findings (the Big Bang, the Hawking-Penrose singularity theorems, the Borde-Guth-Vilenkin theorem, and others). Today, the term "Kalām cosmological argument" in academic and public discourse almost always refers specifically to Craig's version. Its standard modern form reads: (1) Whatever comes into existence has a cause of its existence. (2) The universe came into existence. (3) Therefore, the universe has a cause of its existence. Craig then proceeds to give reasons why this cause must be personal, timeless, spatial, and supremely powerful—in other words, God.

through classical physics. At the deepest level, reality exhibits a distinctly abstract, mathematical structure. The classical notion of the world as a collection of small, solid particles has proven inadequate: the fundamental building blocks of nature are no longer "particles" in the intuitive sense, but quantum systems characterized by a wave function. This wave function is not material—it possesses no mass, shape, or definite position in space—but represents a mathematical object that determines the probabilities of possible states and behaviors of physical systems. Viewed in this light, quantum reality is primarily mathematical, abstract, and immaterial, while the material manifestation of the world is secondary and contingent upon this fundamental order.

The material world, as we perceive it through our senses, thus appears as a superficial manifestation of a deeper, immaterial order, which is not directly accessible to sensory observation. Contemporary theorists, such as Max Tegmark, further develop this idea within the framework of the so-called Mathematical Universe Hypothesis (MUH). Tegmark argues that reality is not merely described by mathematics but is, in its very essence, a mathematical structure. As he writes: "*The Mathematical Universe Hypothesis posits that our external physical reality is a mathematical structure*" (Tegmark, 2014, 250). This represents a radical shift in our understanding of nature: mathematics is no longer simply a descriptive tool or an interpretive framework for human understanding, but an ontological foundation—existing independently of any observer or perception.

This fundamental mathematical order is not merely an abstract hypothesis; it has profound implications for our comprehension of reality's structure. If the basic constituents of the world are defined by wave functions and mathematical structures, then the material world becomes a manifestation of probabilistic and logical laws that exist independently. Much like numbers, logical truths, or geometric ratios, the fundamental quantum order is abstract and universal rather than material. The material appearance of the world is simply the way this immaterial, mathematical order expresses itself in space and time. In other words, the reality we perceive is a visible projection of a deeper immaterial structure.

A deeper appreciation of this principle opens the door to philosophical and theological reflections. Nature consistently follows mathematical laws, suggesting that order—logos, structure, law—is ontologically primary, while matter is secondary, derived from this order. In this sense, the material world is contingent; its existence depends upon the immaterial laws that shape and direct it. The famous opening of the Gospel of John— "In principio erat Verbum" —can be interpreted as a conceptually anticipated quantum truth: the foundation of all existence is a logical, rational order (Logos) that structures and delimits everything that exists, not the other way around.

Philosophically, the "spiritual" is often defined as that which is immaterial, not bound by space or time, and accessible primarily to reason and intellect. Within this context, the insights of quantum physics need not lead to mystical or esoteric interpretations; rather, they rationally expand our conception of reality. The foundation of the world is not solid matter, but an ordered, mathematical, and meaningful structure that manifests through phenomena. Matter is thus not the origin of everything, but an expression of a deeper immaterial order that determines the form, behavior, and interactions of material phenomena.

Although the everyday world appears solid and independent, quantum physics demonstrates that its reality is in fact a consequence of a precisely ordered immaterial foundation—a realm in which phenomena, events, and particles are merely manifestations of an underlying mathematical reality. This understanding offers a new perspective on philosophical and theological questions, suggesting that the laws of nature are independent of the observer, universal, and eternal. Consequently, fundamental meaning and logic exist prior to the material world and are ontologically primary.

The logos of nature: information, structure, and the fine-tuning of the universe

Modern science is increasingly revealing just how extraordinarily complex nature is. This prompts scientists to ask how such complex systems can function and evolve at all. In biology, research shows that DNA is not merely a chemical substance but primarily a carrier of information—a kind of biological blueprint containing precise instructions for the development of organisms, the formation of proteins, and the maintenance of life.

Francis Crick, a British molecular biologist and co-discoverer of the structure of DNA (along with James Watson), writes: "*DNA is like an instruction or a recipe. The sequence of its 'letters' determines which protein will be made, and the information flows in only one direction: from DNA to proteins, not the other way around.*"[8] If we translate this into modern, software-based language, DNA functions like a computer program: the sequence of letters is the code the cell uses to create proteins, just as a computer executes commands from a program.

Many other scientists share this understanding, including Stephen C. Meyer, John Maynard Smith, Hubert Yockey, Richard Dawkins, and others. These researchers, spanning eras and disciplines—from classical molecular biology (Crick, Watson) to more modern interdisciplinary approaches (Meyer, Yockey)—converge on the insight that the key to understanding life lies in the informational layer of DNA, not merely in its chemical structure.

But the complexity of life is not the only surprise. Scientific advances reveal that the universe itself is incredibly finely tuned, enabling the existence of complex structures, from atoms and molecules to stars, galaxies, and life. This precise calibration, known as fine-tuning, means that the fundamental laws of physics and their constants are set within an extremely narrow range of values. Even minimal changes to these constants would prevent the universe as we know it from existing: the gravitational constant would not allow stars and galaxies to form; the electromagnetic force would prevent stable atoms and chemistry; the ratio of the proton's mass to the electron's mass would prevent the formation of molecules; and a change in the cosmological constant would cause either rapid expansion or collapse of the universe.

These values are often described as being set "to a razor's edge," highlighting the extraordinary sensitivity and precision of the laws of nature. In short: *"There is a broad consensus among many physicists and cosmologists that the universe is finely tuned in many respects to allow for a wide range of physical structures and conditions that make life possible.*"[9]

Since we do not know why these constants take precisely these values, and since the laws of nature do not themselves ex-

[8] https://en.wikipedia.org/wiki/Central_dogma_of_molecular_biology, accessed: March 26, 2026.

[9] https://en.wikipedia.org/wiki/Fine-tuned_universe?, accessed: March 31, 2026.

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plain such fine-tuning, a fundamental philosophical question arises regarding the cause and nature of the universe. Many scientists and advocates of intelligent design and a theistic understanding conclude that the most probable and meaningful explanation for this extraordinary precision is an intentional and intelligent cause that enabled the universe to give rise to complex structures and life.

In the ultimate sense, we return to the ancient insight: *In principio erat Verbum*.

Consciousness beyond the brain: science and near-death experiences

What can be observed regarding the general principles of living and non-living nature, in all its complexity, can also be recognized in humans. Scientific discoveries indicate that humans cannot be defined solely in material terms. Consciousness is not merely a function of the cortex. A human being is a composite of body and spirit, with both principles being interdependent—just as was understood up to the time of Descartes.

Near-death experiences (NDEs) indicate that a human being comprises both spirit and body. People facing life-threatening situations—such as cardiac arrest, severe injury, deep anesthesia, or coma—often report extraordinary experiences. Although their brains were severely impaired or temporarily inactive, they experienced a clear, organized, and sometimes profoundly altered state of consciousness. There are even cases in which individuals observed an operation from above and were subsequently able to accurately reconstruct everything that happened during the procedure. Some documented instances describe people leaving the operating room in a perceptual sense and observing their relatives waiting in the waiting room for the outcome. These are known as "veridical NDEs,"[10] and they undoubtedly suggest that consciousness is not solely dependent on brain function.

Among the most commonly described elements of NDEs are the sensation of separation from the body (out-of-body experience), the perception of one's own body from the outside, the sensation of moving through a tunnel, encounters with intense light or a presence, a review of one's entire life in a moral-existential sense, and a profound sense of peace and transcendence of time and space. Additionally, there are frequent cases in which individuals report perceptions of events in their surroundings that cannot later be easily explained by ordinary mechanisms.

It is important to emphasize that NDEs occur with relative consistency regardless of an individual's cultural, religious, or educational background. Children without religious indoctrination, atheists, and members of diverse cultural contexts report structurally similar experiences, which reduces the likelihood that these events are merely culturally conditioned fantasies or expected hallucinations. It is precisely this consistency, internal coherence, and existential depth of NDEs that distinguish them from classic pathological hallucinations or dream states.

Modern science, however, generally understands consciousness as a byproduct of brain activity. According to this view, consciousness arises solely from complex chemical and electrical processes in the brain. Yet, this explanation has not been definitively proven scientifically. Near-death experiences call this understanding into question: people report clear, organized, and meaningful consciousness at moments when, according to classical scientific criteria, the brain should be completely inactive. This is also confirmed by medical measurements such as EEG (which measures brain activity) and ECG (which measures heart activity). Therefore, NDEs suggest that consciousness may not be fully explainable by brain activity alone.

Near-death experiences not only challenge a materialistic understanding of the world but also open the possibility that science might once again take spirituality into account. Some scientists interpret NDEs as effects of a failing brain—due, for example, to oxygen deprivation or the release of endorphins—but studies show that these experiences are often highly consistent and contain perceptions that are difficult to explain conventionally.

For instance, one of the world's largest studies, AWARE, conducted by the University of Southampton, examined over 2,000 cases of cardiac arrest and found that patients reported experiences of consciousness during clinical death, suggesting the reality of the separation of consciousness from the body. "*Among the 2,060 cases of cardiac arrest in the AWARE study, a portion of survivors reported awareness and clear memories of events during cardiac arrest, at a time when, according to conventional medical criteria, brain function was not expected. This is also supported by other contemporary studies showing that consciousness can be present despite clinically undetectable brain activity*" (Parnia, 2014).

Similarly, review studies published in the journal Frontiers in Psychology analyze thousands of reports and identify structural similarities across cultures, reducing the likelihood of cultural or psychological artifacts. These findings do not directly prove religious concepts, but they may be interpreted as suggesting that consciousness is not yet fully understood within strictly materialist frameworks, although objective verification remains limited.

In principio erat verbum: science, faith, and the immaterial order of creation

Modern science reveals a profound harmony between human anthropology, the structure of nature, and biblical truths. The Big Bang theory, empirically confirmed by the discovery of the cosmic microwave background in 1965, points to the absolute beginning of the universe from nothing, philosophically compatible with a transcendent Creator—echoing the biblical creation *ex nihilo* in Genesis 1:1. Georges Lemaître, a Catholic priest and the father of the Big Bang theory, understood that faith and science need not conflict.

Quantum physics reinforces this harmony. At the deepest level of reality, matter is secondary: the fundamental order is mathematical, expressed through immaterial wave functions accessible to the intellect. This recalls the Logos of the Gospel of John 1:1—*"*In principio erat Verbum*"*—the rational and logical principle underlying creation.

This potential convergence of science and faith presents an opportunity for a spiritual and religious renaissance in the West. Science does not contradict the Bible; rather, it affirms it. It supports the anthropology of humans as spiritual-physical beings, the structured universe as an ordered Logos, and the cosmos as an intentional creation. Theologians and scientists like John Lennox emphasize that Christianity provides a strong foundation for science, presupposing a rational, ordered universe created by a rational God.

At a time when materialism is losing credibility, this har-

[10] https://www.ebsco.com/research-starters/psychology/near-death-experience-nde, accessed: April 3, 2026.

mony—supported by empirical discovery—can foster a renaissance of spirituality, reuniting science and revelation. Such a renewal would not be regression, but a step toward holistic understanding. Religions—from Buddhism to the Abrahamic faiths, and especially Christianity—can embrace this vision, which is intimately tied to the fate of the West and the future of science.

Even Freemasonry recognizes this principle through the Great Architect of the Universe. Modern science reinforces their symbolic understanding, showing that the Supreme Being is real, mirrored in the architecture of creation.

However, modern science often separates physics from metaphysics, material from immaterial—not merely methodologically, but as a boundary defining what is considered scientifically legitimate. Attempts to cross this boundary are still treated as speculative or problematic. This framework, however, is increasingly restrictive. Questions regarding consciousness, meaning, and the ontology of nature are routinely excluded from standard scientific discourse.

This moment resembles the era of Copernicus: the heliocentric model existed but was not yet accepted because it challenged prevailing worldviews. Today, sufficient evidence exists to challenge the strict separation between physical and metaphysical, yet no unified language or institutions for a new typology exist. History shows that the boundaries of scientific legitimacy shift during transitions: what is deemed unscientific today may become foundational tomorrow.

We live in such a transitional era. The old order persists, but the new is emerging. Contemporary digital society—and artificial intelligence, increasingly a dominant technological principle—can accelerate a synthesis of science and faith in ways previously unimaginable. This represents one of the greatest challenges—and opportunities—for Western civilization today.

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