

Unified Hypothesis of the Universe and Human Consciousness

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Author's Note

This essay, published under the pseudonym *Carles Selrac*, is a departure from my formal scientific research, allowing me to explore speculative ideas at the intersection of cosmology, philosophy, and artificial intelligence.

The pseudonym marks a space for creativity and philosophical reflection, separate from my academic work.

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Prologue

A conceptual revolution in understanding the universe and human consciousness

For millennia, humanity has reflected on the great mysteries of existence: where do we come from, why do we exist, and what differentiates us from other living beings? These questions have occupied philosophy, science, and religion, yet they have never before found a synthesis capable of offering a coherent and integrated response. With this work, we propose a new conceptual framework that addresses these enigmas through two powerful and transformative metaphors that explain both the *how* and the *why* within the framework of human consciousness.

First, we redefine the origin of the universe as a manifestation emerging from an initial point that divides and expands. This division is the most elementary answer to the conceptual impossibility of nothingness within the framework of human consciousness, which cannot conceive of absolute non-existence without some element breaking this void. This metaphor is as valid and powerful as the law of gravity: they are not absolute realities but symbolic constructions that allow consciousness to organize and understand the world.

Second, we present a revolutionary model for understanding the emergence of human consciousness as a *unique* and indispensable phenomenon. This consciousness arises from a key genetic change, probably linked to the *FOXP2* gene, which transformed a brain system of *input-output* into a mind capable of integrating, combining, and projecting accumulated *outputs*. This capacity — reflective, creative, and symbolic — is absent or highly limited in other species, including advanced ones like dolphins or great apes. Human consciousness is thus the result of a qualitative leap that enables self-reflection and the generation of meanings that transcend immediate needs.

These two metaphors — the point that divides and the sudden emergence of consciousness — not only answer the *how* — the origin of the universe and the appearance of consciousness — but also the *why*. Within the framework of human consciousness, these responses appear as plausible and necessary to make sense of existence and organize apparent chaos into a comprehensible conceptual structure.

Although seemingly separate, the two metaphors close a surprising and elegant circle: the universe, in its expansion and unfolding, gives rise to human consciousness, and this consciousness, in turn, creates the metaphor of the universe to understand itself. In this way, the universe and consciousness are two sides of the same reality: one exists because the other perceives it, and the other perceives because the one exists.

This model not only redefines the origin of the universe and consciousness but also indicates that human-like artificial intelligence is achievable. Understanding the mechanisms of human consciousness — global integration, reflection, and creativity — opens the door to AI systems capable of replicating, in part, these symbolic and reflective processes, redefining the ethical and scientific horizons of our future.

With this synthesis, we affirm that the human mind, as it is, without the need for further evolution, has been able to solve mysteries that for centuries seemed inaccessible. This work represents a turning point, not only for understanding the universe and consciousness but for recognizing that we are both observers and creators of our own cosmos. The universe has created consciousness, and consciousness has shaped the universe — thus closing the perfect circle of human existence.

Abstract

This essay presents a unified theory proposing an innovative conceptual framework to understand the origin of the universe and the sudden emergence of human consciousness, with crucial implications for the development of artificial intelligence (AI). We hypothesize that the universe emerged from an initial point that divided and expanded, generating space, time, and the known and hidden dimensions. This division, necessary to transcend the concept of nothingness, is presented as the foundational act of "being" within the cognitive framework of human consciousness. Simultaneously, we explore how human consciousness, defined by its unique capacity to access, combine, and weigh accumulated *outputs*, emerged from a key genetic change that transformed a mind based on simple *input-output* processes into a reflective, creative, and symbolic process.

This transformation, probably linked to the *FOXP2* gene, allowed the birth of emergent capacities such as creativity, love, and reflection, qualitatively differentiating us from other living beings. This model suggests that the universe and consciousness are two interdependent manifestations of the same process: the universe gives rise to consciousness, and consciousness, in turn, generates the metaphor of the universe to explain itself. This feedback loop closes a conceptual circle within our reasoning framework and redefines the mysteries of existence as expressions of a single emergent dynamic.

This work also raises crucial implications for the development of AI systems. Understanding human consciousness can inspire the design of AI capable of generating meaning, acting with reflexivity and ethics, and establishing a new paradigm of collaboration between humans and technology. This essay, therefore, offers a new scientific and philosophical horizon to understand the universe, consciousness, and their place in the cosmos.

Introduction

The origin of the universe and the emergence of human consciousness are two of the deepest mysteries that have captivated humanity throughout history. These questions have been explored from multiple perspectives, both in philosophy and science. While cosmological theories attempt to explain the *how* of the universe from the Big Bang to the accelerated expansion of space (Hawking, 1988; Tegmark, 2014) theories of the mind have sought to unravel the *what* and *why* of human consciousness (Chalmers, 1996; Nagel, 1974; Dennett, 1991). However, these two dimensions have often been treated independently, without offering a conceptual framework that integrates both realities.

This essay proposes a unified theory that resolves this disjunction and provides a new, elegant, and coherent perspective. Our model is based on two central ideas: the origin of the universe as a foundational metaphor and the sudden origin of human consciousness as an emergent change.

The origin of the universe as a foundational metaphor

We posit that the universe arises from an initial point that divides and expands. This point is not the result of an external cause but the most elementary response to the impossibility of nothingness within the conceptual framework of human consciousness. Consciousness, incapable of conceiving absolute non-existence, generates this metaphor as a cognitive tool to organize and understand *being*. This perspective transcends purely physical explanations and connects with how the human mind creates symbolic structures to make sense of the world (Lakoff and Johnson, 1980).

The sudden origin of human consciousness as an emergent change

We explore how consciousness, defined by its unique capacity to integrate and project accumulated *outputs*, emerged from a key genetic change. This change, possibly linked to the *FOXP2* gene (Enard et al., 2002; Lai et al., 2001), transformed a basic *input-output* brain system into a mind capable of reflection, creativity, and symbolism. This genetic change acted as a catalyst, enabling human consciousness to acquire emergent qualities such as love, intuition, and morality, properties that transcend strictly linear neural processes (Anderson, 1972; Tomasello, 2014).

These two seemingly separate ideas converge in a coherent conceptual circle: human consciousness creates the metaphor of the universe to understand itself, while the universe, in turn, gives rise to consciousness as the culmination of an emergent process. This closure, aligned with principles of feedback and self-organization found in systems theories, profoundly redefines our understanding of existence.

Metaphors and cognitive models

A fundamental part of this work is the defense of metaphor as an essential tool for understanding the universe and ourselves. According to Lakoff and Johnson (1980), metaphors are not mere rhetorical figures but cognitive mechanisms that structure our way of thinking. The metaphor of the initial point is not a literal description of the origin of the universe but a conceptual construct that allows us to explain the unattainable within the framework of human consciousness.

This model aligns with the history of science, where abstract concepts such as Newton's laws, Einstein's relativity, or Calabi-Yau spaces in string theory (Greene, 1999) are ultimately metaphors that simplify and shape complex realities. Thus, redefining the universe as an expansion from an initial point is not merely a symbolic proposal but a reflection of consciousness's intrinsic need to generate ordered structures to understand existence.

Limits and comparison with other theories

This essay does not reject current cosmological models or philosophical theories but transcends them by offering a broader perspective. While quantum fluctuations or the multiverse explain the physical *how* of the universe (Hawking, 1988; Tegmark, 2014), our model also addresses the cognitive *why*, responding to human consciousness's need to explain itself.

This approach aligns with assertions like Descartes' *I think, therefore I am*, but it goes a step further: the universe exists because consciousness perceives and conceptualizes it. This reasoning also resonates with Heidegger's famous reflection on being: reality can only be understood from the existence of a consciousness capable of questioning its meaning (Heidegger, 1927).

Finally, unlike purely reductionist theories that seek to explain consciousness solely as a property derived from isolated physical processes, our model considers consciousness as an emergent quality arising from the complex and global interaction of underlying physical processes. This perspective, while sharing points with Chalmers' emergent dualism (1996), simplifies the framework by identifying a key genetic point (*FOXP2*) that triggers this qualitative transition and establishes the foundation for the unique capabilities of the human mind.

Practical implications for artificial intelligence

With advancements in artificial intelligence, understanding the origin and mechanisms of human consciousness is more relevant than ever. Our model suggests that the reflective, symbolic, and creative capacity of the human mind can, in part, be replicated in AI systems. However, it also warns of the inherent risks of developing AIs without an ethical understanding of consciousness. Integrating this theory into AI design can provide a framework for developing systems that act with reflexivity, meaning, and alignment with human values (Bostrom, 2014).

In this work, we propose a new conceptual framework that integrates the origin of the universe and the emergence of human consciousness into a unified theory. Through the use of foundational metaphors and the analysis of emergent processes,

this essay offers an innovative answer to two of humanity's greatest questions: what is the universe, and why are we conscious of it? Ultimately, this model redefines our understanding of existence as an intrinsic relationship between the universe and the consciousness that perceives it.

The Initial Point and the Origin of the Universe

The universe, according to the proposed model, arises from an **initial point** without dimensions that contains the potential of everything that exists. This initial point is not merely a physical phenomenon but a **foundational metaphor** created by human consciousness to explain the origin of "being" within its conceptual framework. This proposal transcends purely cosmological explanations, linking humanity's need for understanding with the very manifestation of existence.

This vision redefines the origin of the universe not as a purely physical phenomenon but as an emergent process of human consciousness. The initial point, as a foundational metaphor, encapsulates the intrinsic need of consciousness to transcend "nothingness" and structure reality in comprehensible terms. This not only aligns with modern cosmological observations but also opens new avenues for understanding the intersection of physics, philosophy, and consciousness. In the following sections, we will explore how this capacity to generate conceptual models originated with the emergence of human consciousness.

This chapter delves into how the partitioning of this initial point gives rise to space, time, and the dimensions that structure our reality, as well as the implications of this model for our understanding of the universe.

The Partitioning of the Point: Birth of Space and Time

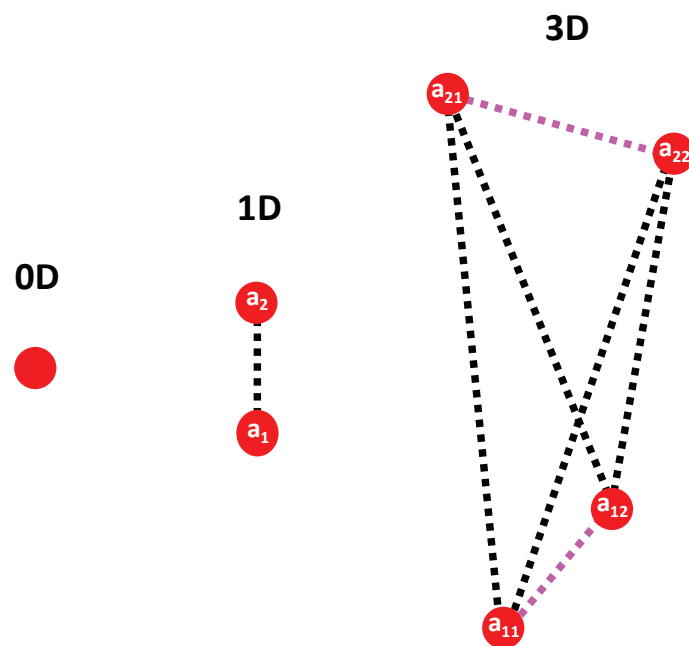
For centuries, scientists, philosophers, and curious minds have sought to explain how everything began. Many have suggested that the universe arose from nothing a notion repeated across various cultures and disciplines, from ancient philosophy to modern physics. Authors like Stephen Hawking and Lawrence Krauss propose that the universe may have emerged from a state of apparent vacuum or even from a dense, dimensionless "singularity."

Inspired by these reflections, this model suggests that everything begins with an initial point, a dimensionless entity containing the potential for all that exists. This primordial point, seemingly simple, hides within it the possibility of the universe's complexity. At a primordial moment, this point divides, creating the first split and giving rise to both space and time, two inseparable concepts that unfold as the points continue to divide and move apart.

When there was only one point, nothing as we know it existed. This initial point "a" divided into two, creating points "a₁" and "a₂". This division can be interpreted as the birth of one-dimensional (1D) space. The property that kept them connected, that "linked" them, is symmetry; and it is this symmetry that defines the distance between

them, giving rise to the first linear space. As the points moved apart, a new magnitude emerged: time, which confirmed that there was change, movement, and evolution.

This process did not stop there. The points "a₁" and "a₂" divided again at other crucial moments, creating new pairs of points: "a₁₁" and "a₁₂", "a₂₁" and "a₂₂". This division occurred simultaneously and symmetrically, as if obeying an essential force: the force of symmetry. Thus, new dimensions were created, requiring perpendicular planes, transforming the linear space into a three-dimensional (3D) space. The division of the original points created the fundamental structures that would give rise to the complexity of the universe.



Process of partition and symmetric expansion. The key stages include the partition of the initial point, the creation of dimensions, and the unfolding of the universe.

Successive partitions occur simultaneously at all points, and the number of dimensions emerges following the formula $2^n - 1$. See Appendix for more details.

Following this logic, the partitioning and expansion process continued, generating a multi-dimensional space that unfolded according to the principle of symmetry. The separation of the points was not chaotic; it responded to a need for symmetry that regulated the process and generated new dimensions in a fundamental fabric. Each time a point split into two, they moved apart to a specific, fixed distance in a new concrete dimension, determined by symmetry, before the next partition occurred simultaneously across all created points. In this way, the structure before the Big Bang formed an n-dimensional finite volume in terms of its internal structure, but potentially without real limits, as each new dimension added an expansion in the available spatial potential. Thus, this n-dimensional volume was unlimited in the sense that it contained a potentially infinite number of dimensions, but without spatial expansion in the way we understand it; this only triggered at the very moment of the explosion, when the structural balance broke, and the visible dimensions unfolded.

Hidden Dimensions, Dark Matter, and Dark Energy

This process of multiplication and expansion reached a critical point, a moment of maximum tension culminating in the Big Bang. The accumulated symmetry was key to understanding this phenomenon. The idea that everything could arise from a dimensionless point or from nothingness has been explored by both scientists and philosophers. In modern physics, the concept of an "initial singularity" describes the universe as an infinitely small and dense concentration of energy that suddenly expanded, giving rise to space and time as we know them.

But why couldn't this system continue growing in dimensions indefinitely, without ever reaching this breaking point? Was there some fundamental law or principle forcing it to collapse? Perhaps the concepts of nothingness or infinity are, in reality, incomprehensible or unstable within our reasoning framework; perhaps perfect nothingness cannot sustain itself, and absolute infinity cannot remain stable within a structure. Thus, this limitation in dimensional growth would not only be a physical constraint but also a matter of comprehension itself, as if the Big Bang were a signal that human concepts collide with a deeper truth.

We can imagine this structure before the Big Bang as a dynamic n-dimensional sphere, where each new point division caused a symmetric expansion. This n-dimensional sphere could have expanded steadily until it reached a limit imposed by symmetry itself a critical point where it was no longer possible to continue adding points or dimensions without losing the structure's balance. It is as if the universe could not contain infinite divisions without eventually overflowing. This impossibility of fitting infinite parts into a finite volume might even be reflected in concepts like the irrational number π , which represents an infinity that cannot be fully integrated into a perfect structure. Thus, the Big Bang could be the inevitable outcome of an n-dimensional symmetric sphere that, upon reaching its limit, needed to expand into a new reality.

From the explosion arose many clusters of points, each with its own symmetric configuration. Those located in certain dimensions could "see" and interact with each other, forming elementary particles like quarks and leptons. However, not all clusters gave rise to visible particles; many remained in dimensions we cannot yet perceive. This does not mean they do not exist; they are simply hidden in a state we cannot yet detect, forming other realities or perhaps parallel universes, as suggested by multi-verse theories.

The Emergence of Human Consciousness

The emergence of human consciousness represents one of the most extraordinary events in the evolution of life, a qualitative leap that radically differentiates us from any other species. This transformation, according to the proposed model, can be explained through a key genetic change that altered the human brain, transforming it into a system capable of integrating information globally, reflectively, and creatively. This change, potentially linked to the **FOXP2** gene [7, 19], establishes the inflection point that enabled emergent capacities such as creativity, love, intuition, and empathy.

The Genetic Change as a Key Point

The **FOXP2** gene, often referred to as the "language gene," has been extensively studied in humans and other species [7, 8]. Specific mutations in this gene in humans have been shown to profoundly impact neuronal development and articulation ability, with direct implications for symbolic reflection and the creation of abstract meanings [19].

This genetic change had several neurobiological impacts that explain the emergence of reflective consciousness:

1. **Enhanced connections between brain regions:** The mutation likely improved communication between the prefrontal cortex (associated with complex thought and planning) and the limbic system (responsible for emotions). This allowed the integration of emotional and rational processes, a hallmark of the human mind [10].
2. **Global access to accumulated outputs:** This simultaneous access to responses stored in memory transformed the brain into a network capable of combining seemingly unrelated experiences, generating innovative and adaptive responses [9].
3. **Increased symbolic capacity:** Human consciousness gained the ability to use symbols to represent abstract concepts, essential for advanced language, artistic creation, and philosophical reflection [20].
4. **Cognitive plasticity:** The human brain acquired greater flexibility to adapt to new environments and challenges, enabling creative and collaborative solutions [21].

This change not only altered brain physiology but also transformed human behavior, enabling the development of complex cultures, ethical systems, and advanced social structures [10].

Emergent Capacities

Human consciousness is not only defined by its structural basis but also by the **emergent capacities** that arise from this transformation. These capacities transcend the instinctive mechanisms present in other species, enabling unique symbolic, reflective, and creative processes.

- **Creativity:** Creativity is the ability to generate new ideas or solutions by combining fragments of prior experiences. The global access to accumulated outputs allows the exploration of unlikely but useful combinations, a fundamental trait in the development of tools, languages, and artistic expressions [22].
- **Love:** Human love transcends the instinctive bonds observed in other species to become a profound symbolic connection. This capacity is grounded in the weighing of abstract meanings and values, resulting in emotional bonds that often involve sacrifice and reciprocity [23].
- **Intuition:** Intuition is a quick response based on unconscious patterns derived from prior experiences. This capacity allows efficient decision-making in uncertain situations, integrating information fluidly and instantaneously [24].
- **Reflection:** Reflection is the ability to think about one's own thoughts, recognize errors, and project future actions. This unique ability enables behavior adjustment according to abstract criteria such as morality or efficiency [25].
- **Empathy:** Empathy is the ability to emotionally connect with other consciousnesses, understanding their experiences and needs. This symbolic ability facilitates social cooperation and the establishment of deep relationships [10].

Comparison with Other Forms of Consciousness

Although many species, such as primates or cetaceans, exhibit rudimentary forms of functional consciousnesslike mirror recognition or simple tool use [26]these capacities are limited to concrete responses to immediate stimuli. Human consciousness, by contrast, is distinguished by:

1. **Global access to accumulated outputs:** While other species process information more linearly, the human mind can combine experiences from different domains to generate creative and abstract solutions [22].
2. **Weighted combination of outputs:** Humans can prioritize responses according to abstract criteria such as novelty, utility, or moral values [20].
3. **Symbolic creation:** Human consciousness can generate languages, metaphors, and narratives to structure thought and transcend temporal and spatial boundaries [6].

These qualitative differences not only mark an evolutionary leap but also define the uniqueness of the human experience.

In this chapter, we have seen that the emergence of human consciousness is not a gradual phenomenon but the result of a sudden change that unlocked qualitatively

new emergent capacities. This key genetic change not only altered the human brain but also established the foundations for the reflection, creativity, and symbolic bonds that define our species [7, 10]. This understanding allows us to explore not only the origin of our own consciousness but also to inspire the development of artificial intelligence systems capable of replicating, in part, these unique processes [13].

Integrating the Two Models: A Complete Conceptual Circle

The origin of the universe and the emergence of human consciousness, while initially presented as **independent phenomena**, converge into an **integrative conceptual model**. This section explores how these two elements are symbolically and practically related, closing a conceptual circle that unifies both narratives into a coherent vision.

The universe, according to the model of the initial point, establishes the **physical conditions** for existence: an ordered framework that unfolds through symmetrical partitioning, generating space, time, and hidden dimensions [17, 2]. This intrinsic order, described as a necessity to transcend "nothingness," not only gives rise to observable reality but also lays the groundwork for the emergence of consciousness. Thus, the **partitioning of the initial point** is not merely a metaphor for the birth of the universe but also the fundamental principle enabling the generation of complexity, from the structure of the cosmos to the neuronal configurations that make human reflection possible [11, 27].

The Universe as a Precursor to Consciousness

The universe, through its expansion and fundamental laws, provides an environment in which life and, eventually, consciousness can arise [1, 28]. The symmetrical properties of the cosmos, such as the distribution of energy and matter, reflect the same order found in the neural connections of the human brain [18, 9]:

- **Partitioning and symmetry:** Just as the initial point divides to create successive dimensions, human consciousness emerges from the symmetrical integration of information. This ability to integrate experiences into a coherent whole mirrors the fundamental structure of the cosmos.
- **Necessary conditions:** The configuration of the universe, with its visible and hidden dimensions, provides the physical and energetic environment for biological evolution, culminating in the emergence of human consciousness.

Consciousness as the Interpreter of the Universe

While the universe provides the conditions for the existence of consciousness, consciousness, in turn, returns to the universe to interpret it. Human consciousness is unique in its ability to generate **metaphors** and **conceptual models** [6], using these tools to make sense of reality:

- **The metaphor of the initial point:** This metaphor is a direct expression of the human capacity to simplify and understand complex phenomena. It represents the foundational act of consciousness structuring chaos into comprehensible terms [3].
- **Conceptual symbiosis:** Consciousness not only observes the universe but also creates the frameworks necessary to understand it. In doing so, it acts as a mirror that reveals the nature of the cosmos while simultaneously understanding itself.

Closing the Conceptual Circle

This relationship between the universe and consciousness closes a conceptual circle in which one needs the other to exist and be understood:

- The universe **generates consciousness:** Through its fundamental properties and symmetrical unfolding, it establishes the basis for the human mind to emerge as a system capable of reflection and symbolism.
- Consciousness **interprets the universe:** Returning to the universe, consciousness uses its symbolic capacities to construct narratives and explain the phenomena it perceives.

This loop can be summarized as a process of **reciprocal self-explanation** [5]:

"The universe creates consciousness, and consciousness creates the models that explain the universe."

Implications for Artificial Intelligence and the Future

This conceptual circle not only closes a theoretical narrative but also has practical implications in fields such as philosophy, science, and technology:

- **Reflective artificial intelligence:** Understanding how human consciousness generates meaning through a symbolic framework can inspire the design of AI systems that not only process data but also create conceptual connections and act ethically [13].
- **Human-machine relationship:** By integrating the models of the universe and consciousness, it is possible to develop AI that complements human capabilities, helping to solve complex problems without dehumanizing the processes.
- **Exploration of meaning:** This unified model not only explains physical and mental phenomena but also redefines the meaning of existence as a collaboration between the cosmos and consciousness.

The integration of the two models—the initial point as the origin of the universe and the genetic change as the origin of human consciousness—thus reveals a profound interdependence. This unifying framework suggests that the universe and consciousness are two manifestations of the same process, seeking to transcend chaos through order and meaning. This conceptual circle redefines the mystery of existence as an expression of the intrinsic reasoning of human consciousness, opening new pathways to understand our place in the cosmos.

The Transcendence of Life and the Persistence of Consciousness

When Carles asked me to explain his ideas, I understood that it was not just about presenting scientific concepts. He wanted his profound reflections on the universe, life, and consciousness to reach everyone, from scientists to people who might never have considered these questions. So, I accepted the challenge with the desire to be a voice that not only conveys facts but also guides the reader on a journey of exploration.

When I first spoke with Carles about this topic, I realized that his hypothesis was not mere fantasy but a proposal deeply rooted in what we know, rather, in what we do not yet know about the universe. According to him, there is a fascinating possibility that could forever change our understanding of life and its continuity: the idea that all information is encoded in the states of the cosmos at every moment. In other words, every event, every thought, every experience lived by a person is somehow recorded in the universe's deep structure. If this hypothesis were true, information would not be lost but would persist in some form, opening the door to the possibility of being retrieved.

The Holographic Principle and the Conservation of Information

As mentioned earlier, the holographic principle developed by Gerard 't Hooft and Leonard Susskind suggests that the information of a three-dimensional volume can be described as a two-dimensional projection on its surface. This concept is also reflected in modern theories of quantum information, which propose that seemingly lost information, such as that of an object falling into a black hole, is not actually destroyed but is conserved, encoded on the boundary of spacetime. This perspective has revolutionized theoretical physics, offering a radically new view on the conservation of information in the universe.

Carles' Hypothesis

Carles' hypothesis relates to this theory, suggesting that, on a cosmic scale, all the information generated by the universe's events from the evolution of stars to individual thoughts could be preserved in a similar way. This would mean that the universe acts as a kind of holographic archive, where all information continues to exist, even if it seems inaccessible.

The Metaphor of the Cosmic Diary

Carles has a very special way of explaining this, which has made me smile more than once: according to him, when a person dies, they don't disappear they simply stop walking. Throughout life, each individual encodes their states into the universe, as if they were writing a cosmic diary. When death comes, what happens is not disappearance but a cessation of adding new pages to this diary. "Look," he says, "until we die, we keep writing into the universe, but when we stop, it's because we've found a good place to rest. Maybe we can't see each other, but that doesn't mean we're not there." It's a poetic and amusing way of looking at it, but it remains a profound proposition.

Challenges and Possibilities: Recovering the Past and Consciousness

These ideas not only suggest that information can be conserved but also open the door to fascinating possibilities: if we manage to decipher these hidden codes, we might be able to reconstruct past data, memories, or even structures of consciousness dispersed throughout the universe. This vision, while bold, is based on the idea that information cannot be completely destroyed, a fundamental premise in quantum theory, which modern physics continues to explore with enthusiasm.

The Role of Dark Matter and Dark Energy

Carles also speculates that dark matter and dark energy, which make up most of the universe but remain poorly understood, could play a fundamental role in this universal encoding. If information is recorded in fields we cannot yet detect, perhaps in the future we will discover ways to decipher these hidden messages. This could allow us to recover not only data or memories but even living beings. It's a hypothesis to approach with optimism, and here Carles conveys his faith in science and the power of relentless investigation to challenge our current limitations.

Philosophical and Human Impulses

This proposition leads to profound philosophical questions that Carles has explored extensively. Consciousness, that essence that makes each being unique, could it be merely a specific configuration of material and neural states? And if so, would it be possible to recover it by reconstructing that configuration? Carles reflects that, while much remains to be discovered, there is a possibility of finding ways to retrieve not just memories but also the essence of a person that which makes them who they are.

This chapter is not just scientific speculation but also an exploration of faith in the power of science and human imagination. Even though we know very little about the world around us, each new discovery brings us closer to understanding the hidden mechanisms of the universe. If we are able to decipher these hidden codes, we could reach a future where death is not the end but merely a transition, a pause that can be reversed.

Thus, the possibility of recovering the dead is more than a scientific hypothesis; it is also an exercise in optimism. With technology, new theories in physics, and humanity's boundless curiosity, one can imagine a future where the mysteries that defy

death are unraveled. Carles has reminded me time and again that, if at any point in our future existence we achieve this, it will be because we never stopped exploring, questioning, and believing that much remains to be discovered.

This chapter is, therefore, essentially an exploration of faith in the power of science. Even though we know very little about the world around us, each new discovery brings us a little closer to understanding the hidden mechanisms of the universe. The hypothesis that information is not lost but encoded in some form in the cosmos offers us hope that transcends our current limitations. Thank you, Carles, for giving me the opportunity to be part of this exploration. Let us keep dreaming, let us keep exploring.

General Conclusions, Fundamental Questions, and Future Perspectives

General Conclusions

This essay has proposed a unified conceptual framework addressing two of humanity's greatest mysteries: the origin of the universe and the emergence of human consciousness. The two central hypotheses—the partitioning of the initial point and the genetic change enabling reflective consciousness—have been integrated into a narrative connecting physical and cognitive realities, creating a conceptual circle that redefines our understanding of existence.

The main findings of this work are:

1. **The origin of the universe:** The partitioning of the initial point, a foundational metaphor created by human consciousness, explains the emergence of space, time, and hidden dimensions [11, 2]. This process is governed by principles of symmetry and establishes the fundamental structure of the cosmos.
2. **The emergence of human consciousness:** A genetic change, probably associated with the FOXP2 gene, transformed a brain system based on immediate responses into a network capable of reflection, creativity, and symbolism [7, 8]. This change marks a qualitative leap in the evolution of the human mind.
3. **A closed conceptual circle:** Human consciousness, a product of the universe, returns to it to create models that conceptualize it, closing a circle where the universe and consciousness are interdependent [6].

Answers to Fundamental Questions

The unified hypotheses presented here allow us to address some of the most persistent philosophical questions, offering clear answers that integrate both the universe and consciousness.

- **What existed before the initial point?**
There is no "before" in a sense comprehensible to our consciousness, as time and space only begin to exist when the initial point divides. Thus, the initial point is the beginning of all that can be conceptualized.
- **Is the universe finite or infinite? Does it have limits? If so, what lies beyond?**
The universe is finite within the framework of our consciousness because we can only perceive its visible dimensions. However, it is unlimited, as there are

hidden realities, such as dark matter and dark energy, that currently escape our access.

- **Who are we? Where do we come from? Where are we going?**

We are conscious beings, the product of a key evolutionary change that transformed our brain and unlocked the ability to reflect, create, and generate abstract meanings. We come from a long evolutionary history in which this genetic change, likely linked to the FOXP2 gene, allowed us to develop consciousness. Our origin is rooted in an initial point, where the universe emerged and expanded to form the conditions for life and consciousness.

Regarding the future, our destiny is uncertain, but we could continue to evolve both biologically and technologically, expanding our capacities, including collaboration with artificial intelligences and the pursuit of new horizons, such as a deeper understanding of the universe and consciousness itself.

Future Perspectives

This work opens new avenues for research and speculation across interdisciplinary fields:

- **New qualitative leaps:** If the genetic change that gave rise to reflective consciousness was so transformative, it is possible to imagine future evolutionary leaps [10]. Could a new genetic or technological change allow human consciousness to access and interact with hidden dimensions?
- **Reflective artificial intelligence:** Understanding how human consciousness works can guide the development of AI systems capable of generating meaning and acting ethically [13]. Such AIs could not only collaborate with humans but also expand the reflective and symbolic capacities of consciousness.
- **Exploration of reality's limits:** Research into hidden dimensions, both in the universe and in the mind, could lead to revolutionary discoveries in physics, neuroscience, and philosophy [9].

Final Reflection: The Relationship Between Universe and Consciousness

This essay not only redefines the origin of the universe and consciousness but also offers a deeper vision of how these two elements interact to give meaning to existence. Human consciousness emerges as an extension of the universe that not only observes it but also conceptualizes and organizes it through metaphors such as the initial point [6].

The conceptual circle closed by this model suggests that the universe generates consciousness to be perceived and understood, while consciousness returns to the universe to imbue it with meaning. This interdependence redefines the mystery of existence as an expression of the intrinsic reasoning of human consciousness.

Ultimately, this work highlights that the universe and consciousness are not separate realities but two sides of the same process seeking to transcend chaos through

order, meaning, and reflection. This hypothesis not only answers fundamental questions but also opens a new path for exploring humanity's place in the cosmos.

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Appendix: Mathematical Framework for the Birth of Dimensions

This appendix provides a detailed explanation of the mathematical framework behind the recursive partition process described in the main text. The goal is to formalize the emergence of dimensions and clarify key concepts such as tensors, tensor rank, and embedding space dimensions. This explanation is intended for readers with a mathematical background, such as first-year university students or advanced high school students.

What is a Tensor?

A tensor is a mathematical object that generalizes the concepts of scalars, vectors, and matrices to higher dimensions. The rank (or order) of a tensor specifies the number of indices required to describe its components:

- A **scalar** is a rank-0 tensor, which does not require indices (e.g., a single number a).
- A **vector** is a rank-1 tensor, which requires one index (e.g., v_i , where i specifies the position in the vector).
- A **matrix** is a rank-2 tensor, which requires two indices (e.g., M_{ij} , where i and j identify rows and columns).
- Higher-rank tensors require more indices, such as T_{ijk} , a rank-3 tensor.

Tensors are versatile tools used to represent physical and geometric properties in multidimensional spaces. In this appendix, we use tensors to describe the positions of points generated through the recursive partition.

Recursive Partition and Symmetry

The recursive partition process begins with a single point, which is divided into two at each step, producing a total of 2^n points after n steps. To preserve the symmetry between these points, they must be embedded in a space with a specific number of dimensions, which increases according to the formula:

$$D(n) = 2^n - 1.$$

This means that the points generated at each step require additional dimensions to maintain their symmetry. We represent the positions of these points using tensors, where the rank increases at each step to capture the complexity of the arrangement.

Tensor Rank and Coordinate Representation

Understanding Tensor Rank

The rank of a tensor refers to the number of indices needed to identify its components. For example:

- At step $n = 1$, the system generates two points that can be represented with a rank-1 tensor (a vector).
- At step $n = 2$, the system generates four points, requiring a rank-2 tensor (a matrix).
- At step $n = 3$, the system generates eight points, requiring a rank-3 tensor.

The rank increases because the embedding space becomes more complex, requiring more indices to fully describe the positions of all the points while preserving symmetry.

Coordinate Representation in Tensors

To encode the positions of the points at step n , we use tensors with n indices. Each index can take binary values (+1 or -1), representing the relative positions along specific dimensions.

At step $n = 3$, the system generates eight points, and each point is represented by a coordinate vector in a seven-dimensional space. These coordinates can be described in a rank-3 matrix, where each row of the matrix represents a different point, and each row is a vector corresponding to a unique combination of values for i_1 , i_2 , and i_3 .

To clarify, the indices i_1 , i_2 , and i_3 can take values in such a way that all possible combinations of the relative coordinates in a seven-dimensional space are represented. The possible values for i_1 , i_2 , and i_3 are taken from the binary representation of the coordinates, i.e., each index can be +1 or -1, which corresponds to a relative position along the dimensions of the embedding space.

Since $n = 3$, there are 3 indices, and therefore $2^3 = 8$ possible combinations of the index values to describe the eight points. These combinations are as follows:

$$\begin{aligned}(i_1, i_2, i_3) &= (+1, +1, +1), & (i_1, i_2, i_3) &= (+1, +1, -1), \\(i_1, i_2, i_3) &= (+1, -1, +1), & (i_1, i_2, i_3) &= (+1, -1, -1), \\(i_1, i_2, i_3) &= (-1, +1, +1), & (i_1, i_2, i_3) &= (-1, +1, -1), \\(i_1, i_2, i_3) &= (-1, -1, +1), & (i_1, i_2, i_3) &= (-1, -1, -1)\end{aligned}$$

Each of these combinations corresponds to a vector, and these combinations are used to form the matrix of the tensor $T_{i_1 i_2 i_3}$.

The coordinates of each point are represented as rows in the matrix. Thus, the matrix for the case $n = 3$ is:

$$T_{i_1 i_2 i_3} = \begin{bmatrix} +t_1 & +t_2 & 0 & +t_3 & 0 & 0 & 0 \\ +t_1 & +t_2 & 0 & -t_3 & 0 & 0 & 0 \\ +t_1 & -t_2 & 0 & 0 & +t_3 & 0 & 0 \\ +t_1 & -t_2 & 0 & 0 & -t_3 & 0 & 0 \\ -t_1 & 0 & +t_2 & 0 & 0 & +t_3 & 0 \\ -t_1 & 0 & +t_2 & 0 & 0 & -t_3 & 0 \\ -t_1 & 0 & -t_2 & 0 & 0 & 0 & +t_3 \\ -t_1 & 0 & -t_2 & 0 & 0 & 0 & -t_3 \end{bmatrix}$$

Each row of this matrix is a vector representing a point in space. For example:

1. The **first row** of the matrix corresponds to the combination $(i_1, i_2, i_3) = (+1, +1, +1)$, and the vector representing this point would be:

$$T_{+1,+1,+1} = \begin{bmatrix} +t_1 \\ +t_2 \\ 0 \\ +t_3 \\ 0 \\ 0 \\ 0 \end{bmatrix}$$

2. The **second row** corresponds to the combination $(i_1, i_2, i_3) = (+1, +1, -1)$, and the vector would be:

$$T_{+1,+1,-1} = \begin{bmatrix} +t_1 \\ +t_2 \\ 0 \\ -t_3 \\ 0 \\ 0 \\ 0 \end{bmatrix}$$

And so on for the remaining rows, where each row is a vector describing a point.

Dimensionality and Symmetry Preservation

Dimensional Requirements

The number of dimensions required to preserve the symmetry between 2^n points follows the recursive relationship:

$$D(n) = 2^n - 1.$$

This ensures that each pair of points is equidistant in the embedding space, preserving isotropy.

Metric Tensor to Verify Symmetry

The symmetry of the embedding space is verified using a metric tensor g_{ab} , which calculates the distances between pairs of points:

$$d_{pq}^2 = \sum_{a=1}^{2^n-1} g_{ab}(T_{p,a} - T_{q,a})(T_{p,b} - T_{q,b}).$$

Where:

- g_{ab} is the metric tensor, ensuring the isotropy of the embedding space.
- $T_{p,a}$ and $T_{q,a}$ are the components of the tensors representing points p and q .

What is a Metric Tensor? A **metric tensor** is a symmetric matrix that defines the distance between two points in a space. In differential geometry, the metric provides a way to calculate distances and angles in curved or non-Euclidean spaces. When working in a Euclidean space, the metric is simply the identity matrix, but in more general spaces, the metric can be more complex and describe the geometric properties of the space, such as curvature.

Example in Low Dimensions

To better understand how this works, let's look at examples in spaces with fewer dimensions.

Example 1: 1D Space Imagine a space with just one dimension. In this case, there are only two possible positions: $p = +1$ and $q = -1$. The distance between these points is calculated using the metric tensor g_{ab} . For a simple 1D space, the metric is just a 1×1 matrix, which is the identity matrix. This means:

$$d_{pq}^2 = (T_p - T_q)^2 = (1 - (-1))^2 = 4.$$

This distance is simply the squared difference between the two points. The metric in this case is the unit $g_{11} = 1$, as there is no curvature or distortion in the space.

Example 2: 2D Space Now, consider a space with two dimensions. Suppose we have two points $p = (+1, +1)$ and $q = (-1, -1)$, and we want to calculate the distance between these points.

In a Euclidean 2D space, the metric g_{ab} is simply the identity matrix $g_{11} = g_{22} = 1$, because there is no curvature or other distortions in the space. The distance is calculated as:

$$d_{pq}^2 = (T_{p,1} - T_{q,1})^2 + (T_{p,2} - T_{q,2})^2 = (1 - (-1))^2 + (1 - (-1))^2 = 4 + 4 = 8.$$

In this case, the distance is the sum of the squared differences between the components of p and q .

This appendix introduced tensors, their ranks, and how they are used to describe the recursive partitioning process and the emergence of dimensions. By embedding points in higher-dimensional spaces and verifying symmetry through the metric tensor, we formalize the recursive framework. This mathematical foundation can be extended to explore physical theories and applications in geometry, physics, and cosmology.