The Theory of Primordial Syntax Seed Core and Primordial Cosmic Software: A Perspective on the Origin of the Universe from an Engineer's Mind

Mustafa Tellioğlu, Civ. Eng. (M.Sc.)

[Abstract]

As a civil engineer with a master's degree, I have spent years calculating the tangible relationships between matter, force, and structure; examining the behavior of materials, the effects of loads, and the characteristics of soil. But over time, I realized this: every structure and system we work on is actually a module within a much larger system—a cosmic structure—to which it is dependent and subject to its laws. This awareness led me to understand and interpret the universe itself through the eyes of an engineer. In this study, I attempted to model a holistic system in which the universe is approached as a "cosmic software system," where physical entities function like code sequences, particles perform tasks, and time acts as a recorder. In this context, I envisioned the Higgs field as a Particle Configuration Hub; I defined particles as Cosmic Enzymes that govern the operation of the universe. I hypothesized that at the foundation of the universe, there might be a Primordial Syntax Seed Core, containing a recorded Primordial Cosmic Software.

Keywords: Big bang, primordial cosmic software, Higs field, primordial syntax seed core, cosmic enzyme, real universe unit, real universe time

Introduction

This study aims to present an original philosophical theory supported by scientific data, examining the formation and evolution of the universe from the perspective of a civil engineer. It encompasses the development of the universe from its beginning (the Big Bang) to the emergence of life—particularly the cell. This process is evaluated through the framework of both physical laws and systems engineering approaches.

The primary objective of this work is to offer holistic, intuitive, and analytical responses grounded in engineering and systems theory—to fundamental questions such as: "How did the universe begin?", "How did life become organized?", "How was the task distribution among subatomic particles shaped?", and "How do time and measurement units function on a universal scale?" Furthermore, it dares to model these answers through a software metaphor, proposing the universe as a coded system. In this respect, the study carries not only scientific but also philosophical significance.

This study also aims to analyze the foundational cosmological theories concerning the formation and evolution of the universe within a historical context, by critically examining the perspectives of the scientists who proposed these theories. In particular, key scientific approaches such as Georges Lemaître's idea of an expanding universe [1], Edwin Hubble's observational contributions [2], and Stephen Hawking(1988)'s interpretations regarding the beginning of time [3] will be explored. Alternative theories such as Alan Guth's inflation model [4] and Roger Penrose's cyclic cosmology [5] will also be discussed. The theoretical and observational advancements in cosmology will be evaluated in terms of both their historical development and their impact on the philosophy of science. From the beginning of the universe to the formation of galaxies, stars, and eventually the Solar System, the contributions of scientists constitute not only a scientific evolution but also an intellectual transformation. Accordingly, this work will not only examine physical models but also engage with the intellectual framework underlying these models.

This study is built upon an inquiry-based reflective approach. The core of the method is to critically assess the explanations offered by classical scientific theories and to search for alternative layers of meaning that go beyond current models. To this end, interpretations derived from physical data have been remapped from the perspective of engineering algorithms.

For example, interpreting the Big Bang not as a singular moment of origin but as the "execution of a software program" is an intuitive analytical approach. This metaphor assumes that the universe functions as a system defined by specific parameters and that these parameters were activated within a pre-defined structure. Likewise, the task distributions of subatomic particles are evaluated as functional "code modules," and their organization within a greater whole is discussed.

The methodology aims to blend classical analytical thinking with intuitive inquiry, encouraging the reader not only to consume given information but also to interact with knowledge. In doing so, the goal is not merely to convey information but to trigger intellectual curiosity and generate new questions.

The model presented herein is a transdisciplinary intellectual endeavor, incorporating conceptual elements from physics, chemistry, biology, software engineering, and philosophy. In this sense, it is neither purely a scientific article nor solely a philosophical essay. Rather, it is the personal response of a questioning, reflective, and system-oriented mind to the question: "How does the universe operate?"

Naturally, this study does not claim absolute certainty. On the contrary, it seeks to provoke new questions and deepen the sense of wonder. Perhaps every answer is a key to an even greater question. Perhaps the universe is an algorithm written with engineering principles—and we are its small but conscious fragments of code.

Stephen Hawking argued that time began with the Big Bang, rendering the question "What came before?" meaningless (Hawking, 1988). This view is based on the notion that time is a dimension of spacetime and that its beginning coincided with a physical event. However, this study follows a different line of thought, suggesting that the concept of time might have existed on a different plane—perhaps independent of our current understanding of physical time—prior to the Big Bang.

In this context, Roger Penrose's model of cosmic cyclicality, grounded in his idea of a "timeless structure," proposes that time is not strictly linear and unidirectional but rather continuous across successive phases of the universe (Penrose, 2010) [5]. Similarly, Julian Barbour contends that time is not an absolute entity but merely a perception of change (Barbour, 1999) [6]. According to this view, the Big Bang may not have been the beginning of time per se but a rupture point at which a new temporal fabric was defined. Carlo Rovelli also argues that time behaves differently at the quantum level and, in some theories, does not "flow" at all (Rovelli, 2018) [7]. Thus, the approach adopted in this study does not address the absolute beginning of time, but rather the initiation point of time as it is observable in our universe—while intuitively contemplating the possibility of a more fundamental "meta-time" beyond it.

Conceptual Glossary Table			
	Abbreviation	Full Term	Definition
1	PSSC	Primordial Syntax Seed Core	The primordial seed believed to be present at the beginning of the universe, containing the entire cosmic software (PCC).
2	PCS	Primordial Cosmic Software	A hypothetical master software that encodes all physical, chemical, and biological laws of the universe.
3	HU	High-order Universe	A higher plane of existence in which the PSSC and other sub-universal modules are embedded.
4	SUN	Sub-Universal Node	Independent sub-software modules within the HU, each representing a distinct universe.
5	РСН	Particle Configuration Hub	A central processing entity within the Higgs Field that assigns identity (function, mass, taste, smell, etc.) to particles.
6	RUU	Real Universe Unit	The actual structural unit of the universe, independent from human measurement systems.
7	RUT	Real Universe Time	A temporal measurement system defined by the universe's own internal logic and operation.
8	CE	Cosmic Enzyme	Functional subatomic particles that execute structural or regulatory roles within the cosmic software.

Hypothesis: The Software-Encoded Universe Assumption

This study is based on the hypothesis that the universe originated not from a purely physical phenomenon, but from a primordial software seed—referred to as the **Primordial Syntax Seed Core (PSSC)**. This seed is assumed to contain a master codebase—the **Primordial Cosmic Software (PCS)**—which defines the foundational structures and operational principles of the universe. The Big Bang, in this framework, is interpreted as the moment this software was "executed."

The hypothesis posits that the universe is not only governed by physical laws, but also organized on a cognitive, algorithmic, and information-based level. The Higgs Field acts as a **Particle Configuration Hub**, a kind of information processing center where particles are assigned their identity (mass and function). In this context, particles are described as **Cosmic Enzymes**—functional ageots operating within the cosmic configuration universe

Can this hypothesis be tested?

- 1. **Cosmological Consistency Check:** Comparing the early formation of atomic nuclei within the first three minutes of the universe with the hypothetical "stem atoms" defined in the PSSC model.
- 2. Entropy–Information Density Analysis: Examining whether the relationship between the universe's informational content and energy density reflects the algorithmic coherence predicted by the PSSC model.
- 3. **Quantum Information Investigation:** Observing whether particle spins, orbital configurations, and interactions behave as carriers of encoded information.

Rather than seeking to replace or disprove current scientific paradigms, this hypothesis offers a theoretical framework that seeks to **expand and enrich** them. It serves as a philosophical thought experiment—a lens through which the universe may be read as a software-designed system.

Observable State Model

Observable State=f(PCS,RUT,Energy)→Higgs Field→Matter

Explanation:

- **PCS** \rightarrow Primordial Cosmic Software
- **RUT** \rightarrow Real Universe Time
- Energy \rightarrow The initial total energy present at the origin
- Higgs Field \rightarrow The compiler-like field that assigns identity to particles
- Matter \rightarrow Observable particles, forces, and structures

Chapter 1: The Big Bang

1.1 Historical Background

The history of the universe begins with the Big Bang, which occurred approximately 13.8 billion years ago. According to modern cosmological models, the universe initially began expanding from an extremely hot and dense point (Hawking, 1988 [3]; Liddle, 2015 [8]). During this expansion, not only matter and energy but also space and time themselves emerged (Greene, 2004) [9]; Davies, 1995 [10]). This event laid the foundation for all structural formations in the universe.

Within a fraction of the first seconds, fundamental particles such as quarks, gluons, and electrons formed. As the universe cooled, quarks combined to form protons and neutrons. Within the first three minutes, nuclear reactions led to the formation of light elements such as hydrogen and helium, in a process known as Big Bang Nucleosynthesis (Weinberg, 1977 [11]; Kolb & Turner, 1990 [12]).

About 380,000 years after the Big Bang, the temperature of the universe had dropped low enough to allow the formation of neutral atoms. During this phase, electrons combined with protons to form hydrogen atoms, marking the beginning of an era in which light could propagate freely. This radiation, still observable today, is known as the Cosmic Microwave Background (CMB) (Hawking, 1988) [3].

Over the following hundreds of millions of years, matter began to clump together under the influence of gravity, leading to the formation of the first stars and galaxies (Liddle, 2015) [8]. These first stars produced heavier elements through nuclear fusion in their cores. Massive stars ended their lives in supernova explosions, dispersing these heavy elements into space. This process provided the chemical diversity necessary for the formation of later generations of stars and planetary systems (Kolb & Turner, 1990)[12].

Our own galaxy, the Milky Way, was formed through the merging of smaller protogalaxies. Around 4.6 billion years ago, a cloud of gas and dust—composed of remnants from earlier generations of stars—collapsed under its own gravity. This collapse led to the formation of the Sun at its center, while the surrounding material coalesced into planets, moons, and other celestial bodies (Greene, 2004) [9].

This entire process is the product of a cosmic evolution that extends from the formation of galaxies and stars to the emergence of the Solar System. Observational data such as the cosmic microwave background, redshift measurements, and elemental abundances all support and confirm this evolutionary trajectory (Davies, 1995 [10]; Liddle, 2015[8]).

1.2. The Big Bang

It may be more reasonable to describe the cosmic event at the beginning of the universe what some scientists call the Big Bang (BB) and others refer to as cosmic expansion—as the execution ("run") of an integrated software system, the **Primordial Cosmic Code (PCC)**, which contains, perhaps, centillions (centillion = $1000 \times (1000)^{100}$) or even centillions of centillions of sub-software modules belonging to countless forms of artificial intelligence.

In their collaborative work, particularly the "singularity theorems" of the 1970s, Stephen Hawking and Roger Penrose demonstrated that when the universe is traced back in time through the laws of general relativity, it inevitably leads to a singularity (Hawking & Penrose, 1970) [13].

But where—or into what—was this software encoded? It could not have been coded into a single point. It is more plausible that it resembled a structure akin to a tomato seed that falls into the soil and eventually grows. This **Primordial Syntax Seed Core (PSSC)**, containing a reservoir of energy sufficient to generate our universe, harbored all the genetic code of our cosmos—namely, the **Primordial Cosmic Software (PCC)**. The laws of physics, chemistry, and biology as we know them today, along with perhaps laws from other yet-unknown scientific domains, were encoded within this software. Our scientific endeavors are essentially efforts to decode the submodules of this colossal integrated software system.

All processes that contributed to the emergence of the universe—including life on Earth and possibly elsewhere in the cosmos, whether observable or not—are outputs of this vast cosmic program. In brief, the Big Bang is the sprouting of a seed-like structure loaded with a massive, multi-layered software system. A flower does not bloom before its time. Likewise, that seed bloomed when the time was right.

As for its original size, we currently have no definite knowledge. However, we can speculate the following: if expansion occurred at the speed of light during the first three minutes (Kolb & Turner, 1990 [12]; Weinberg, 1977 [11]), then by the end of that period:

r = 3 minutes × 60 seconds × 300,000 km/s = 54,000,000 km

This implies the emergence of a sphere—or, as some suggest, a balloon-like structure—with a radius of approximately 54 million kilometers. This structure would have contained about 99% of all atomic nuclei that make up the current universe. What was its original size at the moment of the Big Bang? We do not know. It could have been 1 meter, 1,000 meters, 1,000 kilometers, or—as earlier claimed—a single point.

For approximately 13.5 billion years, the universe has continued to function according to the parameters embedded in this software. Does it contain an "end" command? Will the software eventually terminate itself? The answer might be both yes and no. If the universe is a cycle of energy transformation, then this energy will eventually reach an endpoint. In that sense, we may argue that the universe will terminate with an "end" command.

In 1998, Saul Perlmutter[14], Brian Schmidt [15], and Adam Riess [16] examined distant supernovae and observed that galaxies are receding faster than expected. This can be imagined as follows: imagine placing dots on a half-inflated balloon. As we continue inflating it, the dots move farther apart. Similarly, galaxies are receding from one another as the universe expands.

Does this process have an endpoint? We don't know. According to the General Theory of Relativity proposed by Albert Einstein (1915) [<u>17</u>], the dynamic universe models developed

by Soviet physicist Alexander Friedmann (1922–1924) [18], and the Big Bang concept introduced by Georges Lemaître (1927) [1] —along with the contributions of George Gamow [19], Robert Dicke[20], and others during the 1940s to 1960s—a theoretical model known as the **Big Crunch (BC)** suggests that the universe may indeed have an end.

But could there be no end at all? That is also possible. Why might it not end? Because the entire software system may be capable of updating itself.

1.3. Who Created It, and Why?

The human ear can perceive sounds only within the range of 20 Hz to 20,000 Hz (20 kHz). Sounds below this range are called **infrasonic**, and those above are known as **ultrasonic** both of which are inaudible to us. Similarly, the human eye can detect electromagnetic wavelengths roughly between **400 and 700 nanometers**, which we refer to as **visible light**. Beyond these limits—**ultraviolet (UV)**, **X-rays**, **infrared**, **microwave**, **and radio waves**—lie regions of the spectrum that remain invisible to us. Our other senses, such as smell, taste, and touch, also operate within specific perceptual thresholds.

With consciousness confined to this limited sensory hardware, we tend to define "reality" only as that which we can perceive. However, the fact that something is imperceptible does not imply that it does not exist. Today's artificial intelligence systems are massive software constructs capable of processing enormous volumes of information. But what if our entire universe is itself the **output of a higher-dimensional software** created by a conscious entity or intelligence far beyond our sensory or technological capabilities? What if our universe is merely a **Sub-Universal Node (SUN)** within a **Higher-order Universe (HU)**?

If so, it logically follows that other "modules"—other universes—must also exist.

Modern physics, particularly through **Hugh Everett's Many-Worlds Interpretation** and **Andrei Linde's theory of cosmic inflation**, has introduced the concept of the **multiverse**. However, referring to these universes as "parallel" may be a misnomer—just as we wouldn't describe one tomato field beside another as a "parallel tomato field." A higher-order system might contain several universe-like submodules akin to our own.

From this perspective, the following postulates can be formulated:

- 1. A **Higher-order Universe (HU)** exists beyond the perceptual and cognitive capacity of human consciousness.
- Within this HU, entities of non-sensory intelligence—referred to as Non-sensory Intelligent Agents—create subordinate universes or nodes (SUNs) through softwarelike coding or structuring mechanisms.
- 3. These Non-sensory Intelligent Agents may exist in forms entirely inaccessible to our five senses; we may be unknowingly coexisting with them within the same universe.
- 4. If our universe is one such subordinate module, it implies the existence of other modules—that is, other universes.

CHAPTER 2. HIGGS FIELD

2.1. Mass

The **Higgs field** is defined in particle physics as the fundamental mechanism through which matter acquires mass. Proposed in 1964 by Peter Higgs[21] and other theoretical physicists, this field is hypothesized to be spread throughout the entire fabric of space, and each particle gains mass in proportion to its interaction with this field (Higgs, 1964) [21]. The quantum of this field, the **Higgs boson**, was discovered in 2012 at the Large Hadron Collider (LHC) at CERN, thereby completing the missing piece of the Standard Model (ATLAS & CMS Collaborations, 2012).

The Higgs field can be conceptualized as a **cosmic substrate** that extends beyond the notion of a classical vacuum. Like other quantum fields, it possesses a nonzero energy density, indicating that the vacuum is not truly "empty." When particles interact with this field, its symmetry is spontaneously broken, and this **symmetry breaking** generates mass. For instance, photons do not interact with the Higgs field and therefore remain massless, whereas **W** and **Z bosons** do interact and thus acquire mass (Ellis, 2014) [22].

In this context, the Higgs field can be interpreted not merely as a physical mechanism, but as one of the **core modules of the universe's computational architecture**—functioning like a **cosmic loader layer** within the broader software structure of reality.

The relationship between a particle's mass and the Higgs field is approximately given by:

```
mass ≈ coupling constant × Higgs field value (v ≈ 246 GeV)
or in simplified form:
m = yv
Where:
```

- **m** = particle mass
- **y** = Higgs interaction coefficient (Yukawa constant)
- v = vacuum expectation value of the Higgs field (≈ 246 GeV)

2.2. Higgs Field and Cosmic Software

2.2.1. Cosmic Software Layer

The Standard Model links the acquisition of mass by particles to their interaction with the Higgs field. However, the strength of this interaction—represented by what is called the Yukawa coupling constant—must be determined experimentally and offers no explanation as to why it varies. The Higgs field, in this framework, merely states: "Mass is a result of interaction with me." But why is this interaction strong for some particles and weak for others? Where did the quarks, leptons, and bosons that gain mass from the Higgs field originate? The model offers no insight into their pre-mass states, causal origins, or structural

potential. According to the model, we cannot even observe their pre-mass states because massless particles are unobservable.

As Dr. Melvin Vopson [23] suggested: "Gravity is a result of the universe's information processing." The Higgs field acts like a Particle Configuration Hub (PCH), an information-processing center, where each particle is assigned an identity—its software. Mass is only one output of this software.

The Higgs field assigns mass to many particles such as the top (t) quark, Z^0 boson, W+/Wbosons, bottom (b) quark, tau (t) lepton, charm quark, strange quark, muon, down quark, up quark, electron, and neutrinos. The software loaded into each particle determines its identity and responsibilities, potentially lasting until the end—or eternity—of the universe. These codes define not only mass and electric charge but also their energies, tastes, smells, forces, and unknown properties. In this regard, matter is a repository of information.

Simply put: the Higgs field is the computational center of the universe. The particles that form atomic nuclei—and ultimately matter—gain identity and personality here. They are assigned tasks and responsibilities and become perceptible to our senses. We can see, smell, taste, hear, and touch them. These characteristics that define matter are installed in the Higgs field. Thus, we can say that the Higgs field is where energy-charged particles enter our perceptual realm. We formulate this with our mathematics and measurements. If the formula doesn't fit, we insert a coefficient—just like adding a puzzle piece to fill a gap.

2.2.2. Ontosphere

The Higgs field not only gives mass but also marks the threshold where "being" becomes distinguishable—the transition from potential to actuality, or what we may call the ontosphere. It enables not just physical particles but also sensory realities like smell and taste. Smell is not merely a chemical; it is the orchestrated outcome of particles configured by the Higgs field. Taste is not just a molecule; it is the biological projection of forms that the Higgs field has rendered tangible. Yes, at the physical level, they are molecules, but their sensory meanings are defined by how the Higgs-programmed particles are organized. In this light, the so-called "interaction coefficient" is not merely a physical constant, but a behavioral module assigned by cosmic software. The formula remains the same, but it is not the cause—it is the result of code.

These temporarily tasked particles function much like hormones (e.g., insulin, adrenaline), vitamins (e.g., B12, D), and enzymes (e.g., amylase, lipase) in biological systems. As mentioned earlier, although many particles are granted mass in the Higgs field, only up quarks, down quarks, and electrons are permanently part of atomic nuclei. Others serve temporary roles—some act as reference particles for mass acquisition, others decay via weak force to produce electrons or muons. Just like hormones, enzymes, and vitamins, these particles fulfill tasks assigned by the Higgs field. They are the cosmic enzymes of the universe.

2.2.3. Stem Atoms and Cosmic Organogenesis

Living cells form through the transformation of totipotent, pluripotent, and multipotent stem cells. Could a similar system exist among atomic nuclei formed from particles that acquired identity via the Higgs field? Could there be stem atoms?

In the development of a complex organ like the ear, multipotent stem cells somehow "know" how many cells are needed, what types they must differentiate into, where to position themselves, and how to construct the final structure. Each organism has its own unique design—its own eyes, ears, nose, hands. Perhaps stem atoms behave similarly, transforming into different types of atoms based on required patterns, placements, or functions. The hydrogen atoms formed within the first three minutes of the universe may have acted as totipotent stem atoms.

We know that carbon atoms can form highly complex structures with themselves and with other elements. Each of these compounds has unique taste, mass, and smell. Consider the molecular structure of a C60 fullerene or Buckminsterfullerene ("buckyball"), composed entirely of 60 carbon atoms, forming spheres, cylinders, or ellipsoids. Can such a structure be formed without a coordinating atom?



Image 1: 60-carbon fullerene

Within such a highly complex structure, there must be a governing atom that knows where each atom should be placed and how many atoms are needed. All of this is the result of the software loaded in the Higgs field.

Just like living cells constantly communicate with each other, atoms follow specific rules and bonds when forming molecules. Perhaps they, too, communicate in some way. Structures like long-chain fatty acids, polysaccharides, and complex polymers can only exist through such interactions.

Could atoms record time? Telomeres in cells indicate age and environmental stress; epigenetic changes carry traces of time. Atoms might similarly register time through changes in energy levels, positions, or other properties.

Thus, we can comfortably assert: every atomic nucleus formed by identity-laden particles passing through the Higgs field is aware of time. That is, the universe—or more precisely, the Higher-order Universe (HU)—has a clock: the Real Universe Time (RUT). Every atom behaves according to this cosmic time. If the HU's time is fundamental, then all other universes likely operate by the same time.

2.2.4. Encoding in the Higgs Field

The Higgs field can be thought of as a cosmic protocol or information-loading interface that governs particle behavior. Here, a form of artificial intelligence-like software assigns identity, personality, roles, and responsibilities to each particle. But how?

- 1. We know that natural magnetism arises from the alignment of electron spins and orbital motions. The arrangement, orientation, and number of particles—or possibly unknown properties—may be used to encode information.
- Just like bees communicate the location of pollen through movement, particles may have been assigned information through defined movements. The motion of subatomic particles—or even electrons—may serve as a form of data storage. Nielsen & Chuang (2010) [24] proposed that electrons carry information. Zeilinger (2005) [25] argued that matter itself carries information. Preskill (1998) [26] studied how information is stored.

The software loaded into particles is akin to modern artificial intelligence—capable of self-replication and self-improvement. The carbon atom is the most evident example. On Earth, and perhaps on other life-bearing planets, the carbon atom initiated and sustained life. Observing the vast and complex compounds formed by carbon makes this conclusion unsurprising.

We stated earlier that particles—and thus matter—carry an Al-like software that can evolve and replicate. Bacteria developing resistance to antibiotics is the simplest example. Faced with an external threat, they develop a defense mechanism. This implies a form of consciousness.

Many concepts are defined from a Homo sapiens-centered perspective. Defining intelligence as exclusive to humans is an error. If an organism processes information, associates past and present, and reacts to maintain integrity, it possesses a form of primitive consciousness (Tononi, 2004[27], 2008; Damasio, 1999, 2010 [28]). Similarly, asserting that reasoning is unique to humans is flawed. Components of consciousness—such as analysis, goal-setting, planning, prediction, and intent—are observed in other species. Thus, non-human life forms also exhibit reasoning, planning, and problem-solving, albeit not comparable to Homo sapiens.

2.3. Real Universe Unit (RUU)

We attempt to understand the universe through our self-created measurement systems, concepts, and mathematical models. However, these tools do not reflect nature's own formulation; they are merely approximations constructed by the human mind. In other words, we have yet to discover the universe's native mathematics, its inherent metrics, and computational logic. This is why phenomena such as dark matter and dark energy may simply be outputs of an unknown system that doesn't conform to our formulations. We attempt to fit these anomalies into our equations—when in fact, the universe might operate on a fundamentally different "cosmic computational language."

This leads us to what might be called the universe's First and Second Secrets: one governs gravitational structure, the other cosmic expansion—both remain elusive. Until these foundational layers are understood, our models may be nothing more than intuitive interpretations projected onto an unknown software interface.

For example, ESA's Planck Satellite (2013) measured the cosmic microwave background radiation (CMB) and estimated the universe's expansion rate as $H_0 \approx 67$ km/s/Mpc. Meanwhile, Adam Riess et al. (2005), studying Type Ia supernovae in nearby galaxies, calculated $H_0 \approx 73$ km/s/Mpc. Even for such a "constant," notable discrepancies exist between methods.

Similarly:

- Gravitational acceleration: g = 9.80665 m/s² (at 45° latitude, sea level)
- Speed of light: c = 299,792,458 m/s
- Earth-Sun average distance: 1 AU = 149,597,870.7 km
- Mass of up quark: ≈ 2.3 MeV/c²
- Mass of neutron: ≈ 939.565 MeV/c²
- Planck constant: $h = 6.62607 \times 10^{-34} \text{ J} \cdot \text{s}$

Many of these values are complicated, even "awkward." Our formulas may yield 99% or even 99.999999% accuracy—but this doesn't mean we've accessed the universe's true measurement system.

Think of football rules: a free kick requires opposing players to stand 10 yards (≈9.15 m) away. Goals are 8 feet (≈2.44 m) tall. When converted to metric, these values seem odd because they originate from a different system.

Our measurements of the universe are similarly based on a human-centric system—not on the universe's native mathematics. All these measurements might be mere rough estimates when compared to a higher, undiscovered metric system—what we may call the Real Universe Units (RUU).

Likewise, time is a human construct. We call the Earth's orbit around the Sun a "year," its rotation a "day," and divide the day into 24 hours. We now define one second as 9,192,631,770 oscillations of a cesium atom. Yet this is not an absolute time; it's a manmade one.

Therefore, the often-stated phrase "there was no time before the Big Bang" is valid only within the limits of our human-centric understanding of time. Since our sense of time begins with the Big Bang, any system responsible for running the universe must operate on its own clock.

The concept of Real Universe Time (RUT) emerges here: A unit of time that runs according to the universe's own software—distinct from human time.

All of this suggests we might be asking the wrong questions. We measure and interpret only what we can perceive. Yet the universe may run on a higher-order mathematical system and internal timekeeping logic that we've yet to comprehend.

Chapter 3. DISCUSSION

Our universe emerged from an energy seed—Primordial Syntax Seed Core (PSSC)—that contained all of the genetic software of the cosmos—Primordial Cosmic Software (PCS). Today's physics, chemistry, biology, and undiscovered sciences are submodules of the PCS encoded within the PSSC.

Life exists beyond our universe. The genetic codes of life forms both on Earth and in other Sub-Universal Nodes (SUNs) are pre-defined in the PCS.

All these structures are components within a Higher-order Universe (HU). Other universes, like our own, can be described as SUNs—submodules of the HU. The PSSC and its embedded codes (PCC) were created by Non-sensory Intelligent Agents within the HU.

The Higgs Field acts as an information processing center within this system, known as the Particle Configuration Hub (PCH). Subatomic particles gain identity and function here. Particles such as the top quark, Z^o boson, W⁺/W⁻ bosons, bottom quark, tau lepton, charm quark, strange quark, muon, and neutrinos serve as Cosmic Enzymes—functional agents of the universe. They take on structural, regulatory, and transformative roles.

The carbon atom, equipped with software akin to artificial intelligence, is the most advanced among all atoms due to its ability to self-develop. It has initiated life on Earth and potentially on other life-bearing planets.

The universe contains Real Universe Units (RUU)—measurement systems that we have not yet discovered. All of creation is designed using these units. Similarly, there exists a real universal time—Real Universe Time (RUT)—defined in the Higher-order Universe. All particles that have passed through the Higgs field, and thus all matter, function and record time according to this clock.

What exactly is expanding in the Big Bang? What triggered or initiated the expansion? By whose clock was the Big Bang "run"? Until these questions are answered, all our models—from the Standard Model (SM) to Supersymmetric Models (SSM)—and the science we build upon them with our mathematics are at risk of collapsing in an instant.

References

- 1. Lemaître, G. (1931). *The beginning of the world from the point of view of quantum theory*. *Nature*, 127(3210), 706.
- Hubble, E. (1929). A relation between distance and radial velocity among extra-galactic nebulae. *Proceedings of the National Academy of Sciences, 15*(3), 168–173. https://doi.org/10.1073/pnas.15.3.168

- 3. Hawking, S. (1988). A Brief History of Time: From the Big Bang to Black Holes. Bantam Books
- 4. Guth, A. H. (1997). *The Inflationary Universe: The Quest for a New Theory of Cosmic Origins*. Addison-Wesley.
- 5. Penrose, R. (2010). Cycles of Time: An Extraordinary New View of the Universe. The Bodley Head.
- 6. Barbour, J. (1999). *The end of time: The next revolution in our understanding of the universe*. Oxford University Press.
- 7. Rovelli, C. (2018). The order of time. Riverhead Books.
- 8. Liddle, A. R. (2015). An introduction to modern cosmology (3rd ed.). Wiley.
- 9. Greene, B. (2004). *The fabric of the cosmos: Space, time, and the texture of reality*. Vintage Books.
- 10. Davies, P. (1995). Zaman Hakkında: Einstein'ın Bitmemiş Devrimi (Çev. bilinmiyor). New York, NY: Simon & Schuster. (Orijinal eser: About Time: Einstein's Unfinished Revolution)
- 11. Weinberg, S. (1977). *The first three minutes: A modern view of the origin of the universe*. Basic Books.
- 12. Kolb, E. W., & Turner, M. S. (1990). The early universe. Addison-Wesley.
- Hawking, S. W., & Penrose, R. (1970). The singularities of gravitational collapse and cosmology. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 314*(1519), 529–548. https://doi.org/10.1098/rspa.1970.0021
- 14. Perlmutter, S., et al. (1999). Measurements of Omega and Lambda from 42 high-redshift supernovae. *The Astrophysical Journal*, *517*(2), 565–586.
- Schmidt, B. P., et al. (1998). The High-Z Supernova Search: Measuring cosmic deceleration and global curvature of the universe using Type Ia supernovae. *The Astrophysical Journal*, 507(1), 46– 63.
- 16. Riess, A. G., et al. (1998). Observational evidence from supernovae for an accelerating universe and a cosmological constant. *The Astronomical Journal*, *116*(3), 1009–1038.
- 17. Einstein, A. (1915). Die Feldgleichungen der Gravitation. Sitzungsberichte der Königlich Preussischen Akademie der Wissenschaften, 844–847.
- 18. Friedmann, A. (1922). Über die Krümmung des Raumes. Zeitschrift für Physik, 10(1), 377–386.
- 19. Gamow, G. (1946). Expanding universe and the origin of elements. *Physical Review*, 70(7–8), 572–573.
- 20. Dicke, R. H., Peebles, P. J. E., Roll, P. G., & Wilkinson, D. T. (1965). Cosmic black-body radiation. *The Astrophysical Journal, 142*, 414–419.
- Higgs, P. W. (1964). Broken symmetries and the masses of gauge bosons. *Physical Review Letters*, 13(16), 508–509. <u>https://doi.org/10.1103/PhysRevLett.13.508</u>
- 22. Ellis, J. (2014). The Higgs boson and beyond. Princeton University Press.

- 23. Vopson, M. M. (2020). The information content of the universe and the information entropy of the standard model. *AIP Advances, 10*(8), 085014. https://doi.org/10.1063/5.0019944
- 24. Nielsen, M. A., & Chuang, I. L. (2010). *Quantum computation and quantum information* (10th anniversary ed.). Cambridge University Press.
- 25. Zeilinger, A. (2005). The message of the quantum. Nature, 438(7069), 743.
- 26. Preskill, J. (1998). *Lecture notes for Physics 229: Quantum information and computation*. California Institute of Technology. http://theory.caltech.edu/~preskill/ph229/
- 27. Tononi, G. (2004). An information integration theory of consciousness. *BMC Neuroscience*, *5*(1), 42. <u>https://doi.org/10.1186/1471-2202-5-42</u>
- 28. Damasio, A. R. (1999). *The feeling of what happens: Body and emotion in the making of consciousness*. Harcourt.

Biography

Mustafa Tellioğlu was born in 1965 in Trabzon, Turkey. He completed primary school in his village, attended secondary school at Üsküdar High School in Istanbul, and graduated from Kabataş Erkek Lisesi. In 1989, he received his bachelor's degree in Civil Engineering from Istanbul Technical University. In early 2025, he earned a master's degree in International Business from Nişantaşı University, Istanbul. He is married and has three children.

Professionally, he has over 35 years of experience in large-scale civil infrastructure projects, including roads, tunnels, bridges, and viaducts. He has held roles as project manager, senior engineer, and team leader. His interests extend into systems thinking, cosmology, and the philosophical implications of information and structure in the universe. He currently works as a consultant team leader on major national and international highway,

tunnel, viaduct, and bridge construction projects.