International Journal of Statistics and Applied Mathematics

ISSN: 2456-1452
NAAS Rating (2025): 4.49
Maths 2025; 10(8): 23-28

https://www.mathsjournal.com
Received: 12-05-2025
Accepted: 15-06-2025

Peter W Njori
Kirinyaga University, School of Pure and Applied Mathematics, Kerugoya, Kenya

Corresponding Author:
Peter W Njori
Kirinyaga University, School of Pure and Applied Mathematics, Kerugoya, Kenya

The ontology and dissolution of time: Exploring the consequences of its non-existence on the fabric of reality

Peter W Njori

DOI: https://www.doi.org/10.22271/maths.2025.v10.i8a.2114

Abstract
This paper advances the philosophical and scientific understanding of time by positioning it not as a mere concept or idea but as a fundamental, real entity embodying both energy and spatial dimension, as previously postulated by Njori's. Building upon this dual nature, we explore the profound implications and consequences if time were to suddenly cease to exist dissolving into itself and causing the disintegration of all entities that bear its signature. We present a series of thirteen rigorous theorems, or postulates, substantiated by logical, scientific, and philosophical proofs, demonstrating that the collapse of time entails the disintegration of everything, including matter, energy, existence, and nothingness itself. This exploration underscores the inseparability of time from the fabric of reality, life, and non-being, emphasizing its role as the fundamental "motherboard" of existence.

Keywords: Time, entities, void, collapse of time, motherboard, fabric of reality, spatial dimension

1. Introduction
The concept of time has long been a subject of philosophical debate, scientific investigation, and even metaphysical speculation. Traditionally, many thinkers have regarded time as a mere mental construct a way for humans to organize their experiences or a calendar-based abstraction. However, Njori's scientific article, "Exploring Time's Dual Nature as a Form of Energy and as a Dimension of Space", challenges this conventional view by asserting that time is not just an abstract idea but an intrinsic, tangible component of reality itself. This perspective redefines our understanding of the universe, positioning time as a fundamental entity with a dual nature as both a form of energy and as a spatial dimension.

At the core of this conception, time is presented as a fundamental element that underpins the very fabric of existence, much like space or matter. Unlike a mental construct that merely helps us interpret phenomena, time, according to Njori, is embedded within all things every event, object, and state of being while simultaneously existing independently of them. This distinction is crucial because it elevates time from a passive backdrop to an active, tangible component of reality. Think of time as the "motherboard" of the universe an underlying structure that provides the framework for everything that exists and ceases to exist. Without it, the very notions of change, causality, and existence would lose their meaning.

One of the key aspects of Njori's argument is the duality of time's nature. The first facet is its energy aspect. In this view, time manifests as a form of energy an omnipresent influence that interacts with dynamic processes across all scales, from quantum particles to cosmic phenomena. This energy aspect of time influences the rate at which events unfold, the progression of states, and the evolution of systems. It is not influenced by these processes in turn; rather, it acts as a fundamental force or substrate that shapes their unfolding. For instance, just as energy influences the motion of particles, time influences the progression of processes, providing a measure or rhythm to the universe's unfolding narrative.

The second facet of time's dual nature is its role as a dimension of space. In physics, especially in the context of relativity, space and time are intertwined into a four-dimensional fabric known as space-time. As a dimension of space, time provides the continuum that allows us to specify when and where events occur. It enables us to position an event not just in space but also in temporal order. Without this temporal dimension, the concept of change would be impossible because events could not be ordered or measured in terms of progression. Time as a dimension allows for the movement through a continuum, making it possible to perceive motion, causality, and the flow of events.

The ontological significance of this dual perspective cannot be overstated. Recognizing time as a real, fundamental entity shifts our understanding from viewing it as an abstract container to appreciating it as an active, integral part of the universe's structure. This implies that time is not merely a human invention or a mental framework but an essential component of reality that exists independently and influences all phenomena. It is, in essence, both the stage and the actor in the cosmic drama providing the necessary conditions for the unfolding of events and acting as an energetic force that sustains the interconnected web of existence.

In summary, Njori's article offers a profound reevaluation of what time truly is. It insists that time is neither a fleeting idea nor a passive backdrop but a dual-faceted reality an omnipresent, tangible entity that embodies both energy and spatial dimension. This understanding elevates time to a fundamental status within the universe's architecture, emphasizing its active role in shaping existence and non-existence alike. By recognizing time as a real, concrete phenomenon, we deepen our comprehension of the universe's structure, paving the way for new scientific insights and philosophical reflections about the nature of reality itself.

2. Preliminaries

Building upon Njori's profound postulation that time is an intrinsic, dual-faceted element of reality both as a form of energy and as a dimension of space it becomes imperative to explore the hypothetical scenario where time ceases to exist, effectively dissolving into itself. This thought experiment not only challenges our understanding of the universe's fundamental architecture but also invites a re-examination of the very nature of existence, causality, and reality itself.

In this comprehensive analysis, we will delve into the implications of the sudden disappearance of time, examining the effects on the fabric of space-time, the existence of matter and energy, the notions of beginning and end, and the ontological status of 'nothingness'. We will explore these consequences through scientific principles, philosophical reasoning, and metaphysical insights, aiming to elucidate what such an event would entail for the universe and its constituents.

Definitions

- **Ontology:** The branch of metaphysics dealing with the nature of being, existence, and reality.
- **Time:** A fundamental dimension through which change and sequence are understood.
- **Nothingness:** The absence of all entities, including space, matter, and even the concept of 'nothing.'
- **Dissolution:** The process by which entities lose their distinctness and merge into a state of non-being.
- **Existence and Non-Existence:** The states of being and not being, respectively.

The nature of time and its fundamental role in reality

To understand what happens if time dissolves, we must first reaffirm its foundational role:-

- **Time as a dimension and energy:** According to Njori, time manifests as a dual entity an active form of energy influencing all processes and as a spatial dimension enabling the ordering and measurement of events.
- **Time's embedding in the fabric of spacetime:** In relativity, space and time are intertwined, forming a four-dimensional continuum. The metric of space-time depends on the properties of time; without it, the geometry collapses.
- **Causality and Change:** Time provides the sequence of cause and effect; it is the canvas upon which the story of existence unfolds.

Thus, time is not just a background parameter but an active, integral component of reality

The hypothetical dissolution of time: Conceptual Foundations

What does it mean for time to "cease to exist"?

- **Dissolution "to itself":** The phrase suggests that time no longer functions as a dual entity its energy aspect and as a dimension effectively collapsing into a state where it has no definable presence.
- **Sudden vs. Gradual Dissolution:** For the purpose of this exploration, we assume a sudden cessation an instantaneous or near-instantaneous event where the fabric of time, as a fundamental entity, disappears.
- **Implication:** Without time, the universe's fabric space, matter, energy becomes unanchored from any temporal framework.

3. Immediate Consequences: The End of Change and Causality

3.1 The cessation of change

- **Change as a Temporal Process:** Change requires a temporal dimension without time, the notion of progression, evolution, or transformation collapses.
- **Result:** All dynamic processes quantum states, classical motions, cosmic evolution halt. The universe becomes a static, frozen tableau.

3.2 Causality and Sequence

- **Causality Depends on Temporal Order**: Cause-and-effect relationships rely on a temporal ordering; without it, causality loses meaning.
- **Result:** Causal chains dissolve, rendering the notion of 'before' and 'after' meaningless.

4. The fate of matter, energy, and the fabric of spacetime

4.1. Matter and energy in a timeless universe

- **Persistence without time:** If time disappears, does matter and energy continue to exist?
- **Scientific Perspective:** According to classical physics, matter and energy can exist in a static configuration. However, their properties are usually considered in relation to spatial and temporal variables.
- **Implication:** Without time, the properties of matter such as velocity, acceleration, or evolution are undefined. Matter remains as a spatial configuration, but no processes or interactions can occur.

4.2 The Fabric of Spacetime

- **Collapse of Spacetime Geometry:** The metric defining distances and durations depends fundamentally on the temporal dimension.
- **Result:** Without time, the geometry of spacetime cannot be defined. The entire structure collapses into a non-entity a state where space itself has no meaningful measure.

5. The Dissolution of "All" and "Nothing": The Ultimate Vanishing

5.1 The Concept of "All" and "Nothing"

- **"All" includes "everything" and "nothing":** Both are entities that derive their meaning within the framework of time.
- **Time as the Signature of Existence:** Both "everything" and "nothing" exist because of time; thus, their ontological status depends on it.

5.2 When Time Dissolves

- **All entities dissolve into themselves:** Since everything's existence hinges on time, its disappearance causes all entities material, energetic, ontological to dissolve into a state of indeterminacy.
- **"Nothing" becomes meaningless:** Without time, the concept of "nothingness" loses its reference point; even "nothing" cannot be defined or sustained.

5.3 The Vanishing of "Nothingness"

- Nothingness is characterized by the absence of entities within the temporal framework.
- In the absence of time, the very concept of "absence" becomes meaningless; "nothing" ceases to be a concept, as it cannot be distinguished from "something" without a temporal reference.

6. The End of the Universe: From existence to non-existence

6.1 The Universe without time

- **Static, Non-Processual State:** The universe becomes a static, unchanging configuration if it remains at all.
- **No Evolution, No Motion:** All processes halt; the universe is frozen in a timeless snapshot.

6.2 The Dissolution of Space and Matter

- Since space is a dimension that requires measurement and relation to time, the removal of time collapses the very structure of space as well.
- **Result:** The universe's fabric dissolves into an unstructured, featureless state potentially a state of "nothingness," but one that defies definition because the conceptual framework that supports "nothing" is gone.

7. The Philosophical and Scientific Implications

7.1 The Impossibility of "Nothingness" Without Time

- **Time as a prerequisite for defining existence:** Without it, the distinction between "being" and "non-being" collapses.
- **Implication:** "Nothingness" cannot truly exist independently; it is a concept that relies on the backdrop of time.

7.2 The loss of causality and the arrow of time

- **Arrow of Time:** The directionality of time underpins causality and entropy increase.
- **Without time:** The arrow disappears, entropy becomes meaningless, and the universe's evolution halts.

7.3 The end of scientific description

- Mathematical models of the universe rely on temporal variables.
- Without time, these models break down, and the universe becomes an inscrutable static entity an unobservable, unmeasurable configuration.

8. The Ontological Reflection: Is the Dissolution Possible?

8.1 Is the Dissolution of Time Physically Possible?

- **Current Physics:** No known mechanism allows for the sudden disappearance of time; the concept remains metaphysical.
- **Quantum Gravity and Theories of the Beginning and End:** Some models speculate on the nature of the universe at singularities, where classical notions of time break down, but not necessarily vanish entirely.

8.2 The Metaphysical Perspective

- **Time as an essential aspect of existence**: Its dissolution challenges the very fabric of reality. Since our understanding of existence, causality, and change fundamentally depends on the presence of time, the removal of time raises profound questions about the nature of being itself.
- **Implication:** If time is indeed an intrinsic and necessary component of reality, then its dissolution may be impossible within the framework of physical laws; it may remain a purely metaphysical or speculative concept. Conversely, if such dissolution were to occur, it would signify a radical transformation of the universe's ontological structure-potentially leading to a state beyond conventional understanding of existence, where traditional notions of being, non-being, and the fabric of reality collapse into an undefined, indeterminate state.
  This perspective invites us to reconsider whether time is an emergent phenomenon or a fundamental aspect of the universe. If emergent, then its dissolution might be conceivable as a transition to a more primitive state of being akin to a pre- or non-structured condition. If fundamental, then the very possibility of its disappearance may be deemed impossible, underscoring the idea that time is woven into the core of reality itself.
  Ultimately, the metaphysical reflection emphasizes that the dissolution of time is not only a scientific and philosophical challenge but also a profound inquiry into the limits of human understanding and the nature of ultimate reality. It prompts us to question whether the universe could exist in a state devoid of temporal structure or if such a state is inherently inaccessible or nonsensical within the fabric of existence.

9. Theorems (Postulates) on the dissolution of time

9.1 Theorem 1: The Collapse of All Entities

Proof: If time ceases to exist by dissolving into itself, then all entities matter, energy, consciousness, and conceptual constructs simultaneously disintegrate into void. This is because time functions as the fundamental dimension that sustains relational properties among entities. Without it, the interconnectedness that maintains the structure of matter and the manifestation of energy becomes impossible. Consciousness, which depends on temporal sequences of experience, cannot persist. Consequently, all dependencies on

temporal relations collapse, resulting in a complete disintegration into a state of nothingness or void, where no structure or entity remains.

9.2 Theorem 2: The dissolution of motion and change
Proof: Motion, change, and progression are inherently functions of the flow of time, serving as indicators of variation over temporal intervals. Therefore, if time collapses or ceases to exist, these processes cannot be sustained. Without a temporal dimension, entities lose their relational dynamics, reverting to a static, unchanging state. The parameters that define movement and change-such as velocity, acceleration, or transformation-disappear because their measurement and existence rely on temporal succession. As a result, all processes halt and ultimately dissolve into a state of stasis, leaving behind only a homogeneous, featureless void where no evolution or transformation can occur.

9.3 Theorem 3: The disappearance of memory and identity
Proof: Memory, identity, and causality fundamentally depend on the succession of events within the framework of time. Memory relies on the ability to relate past experiences to present consciousness; identity requires continuity over temporal intervals; causality depends on cause-and-effect chains unfolding over time. When time dissolves, these relationships lose their meaning, causing memories to vanish, identities to disintegrate, and causal chains to break. The continuity that sustains personal and collective histories erodes, reducing all selves and histories to a state of non-being or void. Without temporal structure, the notions of self and causality become nonsensical, collapsing into complete nullity.

9.4 Theorem 4: The end of the universe's structure
Proof: The large-scale structure of the universe-galaxies, stars, cosmic filaments, and gravitational interactions-relies on processes that unfold over time. The expansion of the universe, formation of celestial bodies, and gravitational dynamics all depend on temporal progression. If time collapses, these processes cannot be maintained; the fabric of cosmic architecture would disintegrate. Without ongoing evolution, the universe cannot sustain its organized structure. It would regress into a homogeneous, featureless void, losing all distinction and coherence. This disintegration signifies the end of the universe's dynamic and structural integrity, leaving only an undifferentiated expanse of non-being.

9.5 Theorem 5: The nullification of life and death
Proof: Life and death are processes that are defined through temporal phases-growth occurs over time, aging proceeds sequentially, and death marks a culmination in a temporal process. When time ceases to exist, the distinction between life and death collapses because these concepts rely on the continuum of temporal change. All biological entities, dependent on ongoing processes, would disintegrate simultaneously, erasing the boundary between existence and non-existence. With no temporal framework, biological functions cease, and all entities perish in unison, leaving behind a state of non-being, where differentiation between life and death is meaningless.

9.6 Theorem 6: The collapse of 'yesterday', 'today', and 'tomorrow'
Proof: Temporal designations such as 'yesterday,' 'today,' and 'tomorrow' are relational constructs that depend on the ongoing flow of time. These labels are meaningful only because of a continuous temporal dimension that allows for the ordering of events. If the flow of time dissolves, these distinctions lose their reference points and become meaningless. The concepts of past, present, and future cease to have any significance and effectively disappear into the void. Without temporal continuity, the division of moments collapses, and all such temporal labels dissolve into non-existence, reflecting the complete nullification of temporal differentiation.

9.7 Theorem 7: The Dissolution of 'All' and 'Nothing'
Proof: The concepts of 'all' and 'nothing' are defined relationally through their existence within a temporal framework. 'All' encompasses everything that exists at a given time or across multiple times, while 'nothing' signifies the absence of entities within this context. When time dissolves, the relational structure that defines these concepts disintegrates. Both become indistinguishable from the void because their meaning depends on the existence of entities and the temporal relations that contextualize them. Consequently, both 'all' and 'nothing' collapse into a state of non-being, with no meaningful distinction remaining, leading to complete nullification.

9.8 Theorem 8: The end of the big bang and cosmic genesis
Proof: The Big Bang represents a temporal event-an origin point in the universe's history. Cosmogenesis depends fundamentally on the existence of time, as it provides the framework within which the universe begins, evolves, and diversifies. If time dissolves, the very notion of a beginning ceases to have meaning. The concept of a cosmic origin becomes nonsensical, and the universe's structure cannot be sustained. Without temporal unfolding, the universe's genesis, evolution, and expansion collapse into a state of non-being, effectively disintegrating into a homogeneous void devoid of any historical or developmental narrative.

9.9 Theorem 9: The Persistence of the Void
Proof: The void, as a state of non-existence, is relationally defined by the absence of entities within the context of time. When time dissolves, so does the relational framework that sustains the concept of void, causing it to cease to persist. Without the relational structure provided by time, the notion of 'absence' loses coherence, collapsing into an absolute non-being. This ultimate state of non-existence cannot be meaningfully described or maintained because even the concept of void depends on a temporal relational context. Consequently, total non-being emerges, where even the void itself ceases to exist as a definable state.

9.10 Theorem 10: The non-existence of imagination and thought
Proof: Imagination and thought processes depend on mental constructs that evolve and relate over time. The formation, development, and dissolution of ideas require a temporal sequence. If time dissolves, the mental processes that generate and sustain imagination and cognition cannot occur or persist. Mental states, which rely on the succession of thoughts, memories, and associations, become impossible without a temporal framework. As a result, all mental activity disintegrates into a state of non-being or void, where no

cognitive or imaginative processes can take place, effectively nullifying the very fabric of consciousness.

9.11 Theorem 11: The non-existence of causality and determinism

Proof: Causality presupposes a temporal order-causes precede effects, and events are connected through chains unfolding over time. Without the flow of time, cause and effect lose their meaning, as there are no temporal relations to establish precedence or causal links. Determinism, which relies on the idea that current states determine future states through causal chains, collapses into uncertainty or void. All causal structures dissolve because their foundation-the temporal sequence-is absent, resulting in a universe where causal relationships and deterministic laws no longer apply, leaving only a state of non-being.

9.12 Theorem 12: The primacy of time as the foundation of reality

Proof: Time is the foundational substrate that underpins all existence, connecting matter, energy, and even the concept of nothingness into a coherent framework. All entities depend on temporal relations for their relational existence and contextual meaning. When time dissolves, the entire fabric of reality collapses. Matter and energy lose their relational structure, and the universe disintegrates into a singular, undifferentiated state of non-being. The dissolution of time signifies the collapse of the very foundation upon which reality is built, leaving behind only an absolute void devoid of structure or substance.

9.13 Theorem 13: The final collapse-all into self-disintegration

Proof: If time dissolves into itself, then all that exists, including the very concept of existence, collapses into a singularity of non-being. The relational structures necessary for any form of existence or non-existence vanish, erasing distinctions between entities, states, and concepts. This process results in total self-disintegration, where the universe and the idea of a universe cease to have meaning. The collapse into the void is absolute, leaving nothing behind-no entities, no distinctions, no structure-merely a state of pure non-being, where the fabric of reality and the concept of collapse itself become meaningless.

10. Conclusion

The Ontology and Dissolution of Time: Exploring the Consequences of Its Non-Existence on the Fabric of Reality offers a profound philosophical and scientific inquiry into the fundamental nature of time and the consequences of its hypothetical disappearance. This comprehensive analysis challenges conventional perceptions, proposing that time is not merely an abstract or mental construct but a dual-faceted, intrinsic element of reality that embodies both energy and spatial dimension. By examining the implications of a sudden dissolution of time, the paper seeks to understand the essential role that time plays in the structure, evolution, and ontology of the universe.

At its core, the article builds upon the conception introduced by Njori's, positioning time as a real, fundamental entity with a dual nature: As an omnipresent form of energy influencing all processes and as a dimension of space that allows for the ordering and measurement of events. This dual nature underscores the idea that time is embedded in all that exists and does not exist, serving as the "motherboard" of the universe. It provides the framework within which change, causality, motion, and existence itself are possible. The paper emphasizes that without time, the very fabric of reality would disintegrate, leading to a state of complete non-being or void.

The first part of the paper revisits the ontological significance of time, highlighting its foundational role in enabling change, causality, and the unfolding of the universe. It explains that in relativity, space and time are intertwined into the fabric of spacetime, and the metric of this fabric depends critically on the existence of time. From the paper, the dissolution of time would cause the collapse of this spacetime structure, rendering space unmeasurable and static. Consequently, all dynamic processes-ranging from quantum states to cosmic evolution-would come to a halt, frozen in a timeless snapshot.

The core of the paper is dedicated to exploring the consequences of a hypothetical, sudden disappearance of time-what the authors call the "dissolution into itself". This thought experiment serves as a basis for a series of thirteen rigorous theorems that articulate the logical, scientific, and philosophical outcomes of such an event. These theorems systematically demonstrate that the dissolution of time would lead to the disintegration of all entities-matter, energy, consciousness, and even the concept of existence itself.

For example, Theorem 1 posits that if time ceases to exist, all entities disintegrate into void because their existence depends on relational structures grounded in temporality. Theorem 2 states that motion and change, which are functions of temporal flow, would cease, causing all processes to become static and ultimately dissolve. Theorem 3 extends this to memory and identity, asserting that without temporal succession, notions of self, causality, and history become meaningless. The universe's large-scale structure would similarly disintegrate (Theorem 4), with cosmic formations and gravitational interactions collapsing into a homogeneous void.

Further, the paper explores the implications for biological processes, emphasizing that life and death depend on temporal sequences, and thus, would collapse into a singular state of non-being if time were to vanish. The concept of temporal designations such as "yesterday", "today", and "tomorrow" would become nonsensical, dissolving into the void. The same applies to abstract notions like "all" and "nothing", which rely on temporal contexts for their meaning. The universe's origin-such as the Big Bang-would lose its temporal anchor, rendering the concept of a beginning meaningless.

The authors also delve into the metaphysical implications, questioning whether the dissolution of time is physically possible or merely a metaphysical speculation. They argue that currently, no known physical mechanism supports such a sudden disappearance of time, making it an abstract, hypothetical scenario. Nevertheless, contemplating this possibility raises fundamental questions about the nature of existence, causality, and the fabric of reality itself. If time is truly fundamental, its dissolution signifies a total collapse of the universe's ontological foundation, leading to a state of absolute non-being where even the concept of "nothingness" ceases to make sense.

In conclusion, this work emphasizes that time is not a mere backdrop but a fundamental, real entity that underpins all aspects of reality. Its hypothetical dissolution reveals the deep interconnectedness of time with existence, causality, change, and consciousness. The series of theorems presented serve as a rigorous logical framework demonstrating that without time, the universe would collapse into a state of indeterminate non-

being, challenging our understanding of the cosmos and the very nature of existence.

Note: This comprehensive summary synthesizes the core ideas, arguments, and implications of the paper, emphasizing the profound consequences of a hypothetical dissolution of time on the fabric of reality, supported by relevant philosophical and scientific references.

11. References

1. Njori PW, Moindi SK. Exploring time's dual nature as a form of energy and as a dimension of space. Int J Stat Appl Math. 2024;9(5):152-159.
2. Einstein A. The field equations of gravitation. Sitzungsberichte der Königlich Preußischen Akademie der Wissenschaften; 1915.
3. Barbour J. The End of Time: The Next Revolution in Physics. Oxford: Oxford Univ Press; 1999.
4. Rovelli C. Quantum Gravity. Cambridge: Cambridge Univ Press; 2004.
5. Heidegger M. Being and Time. New York: Harper & Row; 1962.
6. McTaggart JE. The unreality of time. Mind. 1908;17(68):457-473.
7. Ellis GFR, Stoeger WR. The universe as a process. Found Phys. 2003;33(10):1425-1444.