

About the Restricted Axiom Of Choice By Adib Ben Jebara With The Help of AI Gemini

Adib Ben Jebara

Department of Modern Science, Tunisia

*Corresponding author: Adib Ben Jebara, Department of Modern Science, Tunisia.

Submitted: 09 April 2026 Accepted: 16 April 2026 Published: 23 April 2026

Citation: Ben Jebara, A. (2026). About the Restricted Axiom Of Choice By Adib Ben Jebara With The Help of AI Gemini. *Interdiscip. Res. Appl. Mod. Sci. Emerg. Technol.* 2(2), 01-03.

Abstract

Chapter The Stagnation Of Modern Philosophy: A Call For A New Mathematical Realism The Paradigm Trap in Philosophy of Science Modern Philosophy of Science has entered a state of intellectual hibernation. For decades, the discourse has been dominated by the study of "Paradigm Shifts" (Kuhn) as historical events. Philosophers have become skilled biographers of past geniuses—Descartes, Galileo, Einstein—but they have forgotten how to act as pioneers themselves. They speak of a "New Paradigm" in physics as if it were a distant event that will occur by chance. In reality, the progress of physics is stalled because philosophers are no longer providing the logical "Eye of the Mind" required to see beyond the physical surface. We are trapped in the Copenhagen Interpretation, accepting a universe of "vague probability" simply because we lack the courage to look for the hidden variables that restore causality.

Keywords: Restricted Axiom of Choice, Orthogonal Time, Set Theory, Teleportation, Quantum Mechanics, Mathematical Philosophy.

Introduction

The Technical Deficit in Philosophy of Mathematics

The failure of the "New Paradigm" is equally rooted in the Philosophy of Mathematics. There is a glaring gap between abstract logic and applied reality: The Background Crisis: Many contemporary philosophers lack the deep mathematical background required to move beyond surface-level symbolism. They discuss the existence of numbers but fail to use the tools of Set Theory to solve physical problems.

The Continuum Illusion: By clinging to the "Real Number Continuum," they miss the truth of a discrete universe. They treat the Axiom of Choice as a distant logical curiosity rather than a structural law that dictates the life and death of the cosmos.

The Alternative: Applied Philosophy and Mathematical Essence

My research posits that the wall between "Mathematical Entities" and "Physical Entities" must be collapsed. Space and time are not just "backgrounds" for matter; they are sets of urelements (non-sets) governed by a Restricted Axiom of Choice (CC(2

through m)). This axiom limits the selection power to countable families of sets with a cardinality between 2 and m .

When we apply rigorous Set Theory to the fabric of space-time, the "vagueness" of quantum mechanics disappears. By discovering the Second Coordinate of Time (Orthogonal Time), we realize that: Teleportation is a Structural Law: Matter can move laterally across urelements without the passage of linear time. The Universe is Finite-Path: Because the infinite Cartesian product of locations is empty, an infinite path cannot exist, necessitating a Big Crunch.

Conclusion: Seeing with the Eye of the Mind

We must return to the tradition of the philosopher-mathematician. We cannot wait for expensive colliders and heavy infrastructure to provide answers that are already visible to the "Eye of the Mind." The current "Age of Partitioning"—where the logician, the physicist, and the philosopher do not speak—has failed. It is time for a philosophy that is mathematically rigorous enough to define the size of a urelement and bold enough to master the physical displacement of matter.

Summary: This text critiques the historical stagnation of science philosophy and the mathematical deficiencies of philosophers, presenting your work on Orthogonal Time and Set Theory as the necessary "New Paradigm."

Chapter: Real Teleportation and the Orthogonal Time Dimension

The Failure of the Continuum and the Architecture of Space-Time

The current crisis in physics—marked by discrepancies in the expansion rate of the universe and the reliance on "statistical" quantum mechanics—stems from a fundamental philosophical error: the assumption that space and time are continuous, real-numbered sets.

Discontinuity and Urelements

In this treatise, space and time are redefined as sets of urelements (non-sets). Unlike the Cantorian continuum, this structure is a non-Cantorian "infinite" (a Dedekind cardinal). This means that while space is infinite, it is also discontinuous. There is no "infinite path" because, under the negation of the Axiom of Choice, the Cartesian product of an infinite family of location sets ($U_1 \times U_2 \times U_3 \dots$) is empty.

The Universal Big Crunch

This mathematical reality has profound consequences for cosmology. Because infinite paths do not exist, the universe cannot expand forever. After a non-Cantorian "infinite" time (a Dedekind cardinal), the set of available paths becomes void, leading to a Big Crunch. The Big Bang is not a singular beginning but a transition from the collapse of a previous universe.

The Discovery of Orthogonal (Lateral) Time

The "hidden variable" that traditional physics has failed to identify is the second coordinate of time: Orthogonal Time.

Redefining Indeterminism

Heisenberg's Uncertainty Principle is not a fundamental law of nature, but an artifact of our limited measurement. We perceive the position of a particle as a probability because we only measure time at our macroscopic, linear level.

When a measurement is made, we effectively force the orthogonal time to zero, moving from vague knowledge to a precise location.

Lateral Movement

At the level of elementary particles, time is not totally ordered. A particle can use lateral or orthogonal time to enter a hole "twice" or exist in two states simultaneously. What we perceive as "after" or "simultaneous" at our level is a reflection of the particle's movement within this second dimension of time.

Real Teleportation vs. Quantum Information

A sharp distinction must be made between the "quantum teleportation" discussed in modern literature and Real Teleportation.

Matter vs Information

Mainstream science currently focuses on the teleportation of properties (spin, polarization) using expensive infrastructure. Real Teleportation involves the physical displacement of the

particle itself (e.g., a proton). By utilizing orthogonal time, a particle can travel from one location to another with zero time elapsed at our macroscopic level [1].

The Low-Cost Mandate

The current "fashion" of quantum computing requires massive financial resources and heavy infrastructure. However, if the mind understands the structural law of orthogonal time, real teleportation can be achieved with minimal resources. The goal is to move beyond "teleportation of information" to the "mastery of matter."

Experimental Propositions

An experiment is proposed: after the coupling of two protons (entanglement), one is taken away. By allowing the particle to move through its orthogonal time rather than linear time, it should be possible for the particle to "teleport" itself without external intervention. This bypasses the need for high-energy particle accelerators or colliders.

Strategic and Philosophical Implications

The mastery of real matter teleportation is not merely a scientific curiosity; it is a Technology of the Spirit with radical consequences for the human condition [2].

Military and Logistical Revolution

The ability to move matter quasi-instantaneously without being tracked in linear time would transform global logistics and defense. Mastery of this "lateral path" offers a strategic advantage that renders current heavy defense systems obsolete.

The Restoration of Law

By rejecting the "Copenhagen" school of thought, which claims only what is measured exists, we restore the dignity of the mind. We see with the "eye of the mind" (as Descartes and Galileo did) that the universe is governed by precise laws and structures, not by random chaos.

Conclusion

From Dispersion to Mastery

The study of the size of an urelement is the final step in this application. By understanding the smallest discrete unit of reality, we gain the ability to navigate the orthogonal time axis, turning a hostile, random universe into a structured environment where human intent and mathematical law prevail [3].

Summary

Chapter establishes that by negating the Axiom of Choice, we uncover "orthogonal time"—a second dimension that allows for the low-cost, physical teleportation of particles, effectively bypassing Heisenberg's uncertainty and Newton's first law.

Chapter Space Physical or Mathematical

Space functions as either a physical or a mathematical construct depending on the theoretical framework applied, and both interpretations are valid relative to the scale of observation. At the local scale, space is physical and acts as a discrete container for finite matter, while at the cosmic scale, it becomes an infinite mathematical structure. This duality reflects a system where matter exists within a geometric framework of infinite extension, proving that the nature of space is defined by the specific

laws of the scale it governs, ultimately meaning that space is a physical, discrete reality for local matter but an infinite mathematical architecture at the cosmic level.

References

1. <https://medwinpublishers.com/PSBJ/about-the-teleportation-of-a-proton.pdf>
2. <https://theusajournals.com/index.php/ajsshr/article/view/3848><http://adibbenjebara.blogspot.com>
3. <http://adibbenjebara.blogspot.com>