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Research Article

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A Universal Framework for Existence and State Transitions: The Theory of Every Thing (ToET)

Sarah McGovern*

Independent Researcher San Bernardino, California, USA

*Corresponding Author
Sarah McGovern, Independent Researcher San Bernardino, California, USA.

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Abstract

This preprint introduces the Theory of Every Thing (ToET), a universal framework that adapts the Bloch sphere to model the spectrum of existence for any thing in the universe. By representing existence as a continuum from 0 (non-existence) to 1 (full existence), the ToET integrates principles of energy conservation, the golden ratio (ϕ), and fractal geometry to provide a unified mathematical foundation. Unlike previous unification attempts that focus solely on physical forces, ToET provides a mathematical language for describing state transitions across all disciplines and scales-from subatomic particles to galaxies, from single cells to ecosystems, from individual thoughts to societal movements. The the- ory demonstrates how numerous already-observed phenomena in nature, from phyllotaxis patterns to galactic structures, follow the mathemati- cal relationships described by ToET. The ToET not only unifies physical and biological systems but also provides a mathematical foundation for understanding ethical dynamics and value optimization in societal systems. This paper presents evidence from existing literature validating the ToET's predictions across multiple domains, establishing it as a comprehensive framework for understanding the existence and transition states of literally any thing that exists or could exist.

Keywords: Bloch Sphere, Existence, Energy Conservation, State Transitions, ϕ, Golden Ratio, Fractals, Nested Systems, Universal Framework, Universality, Complex Systems Theory, Quantum Mechanics, Emergence, Synergy, Quantum-Classical Transition, Cosmology, Biological Systems, Ethical Systems, Physical Systems, Socioeconomic Systems, Interdisciplinary Science, Theory of Everything (ToE), Theory of Every Thing (ToET), Mathematical Modeling, Network Theory, Chaos Theory, Information Theory, AdS/CFT Correspondence, Critical Phenomena

1. Introduction

The concept of existence-what it means for something to "be"-has been a central question in science for centuries. From the conservation of energy in physics to the propagation of life in biology, the representation of existence and non-existence has evolved, yet a unified framework capable of modeling any thing remained elusive until now. This paper introduces the Theory of Every Thing (ToET), a universal approach that models existence as a spectrum of states, represented by an adapted Bloch sphere.

The ToET is not merely a theoretical construct; it is a universal framework capable of modeling literally any and every thing-from the growth of a flower to the dynamics of a galaxy, from the behavior of a single cell to the evolution of an entire universe, from the formation of a thought to the development of a civilization. Its applications span all disciplines, offering insights into the propagation of life, the structure of galaxies, and the ethical dynamics of societies.

1.1 Theoretical Context and Novel Contributions

The quest for a unified theory has driven scientific inquiry for centuries, from Newton's unification of terrestrial and celestial mechanics to Einstein's space-time framework, and more recently, to theories like string theory and loop quan-tum gravity. While these approaches focus primarily on unifying physical forces, ToET takes a fundamentally different approach by creating a mathematical lan- guage for describing the existence of any thing itself, and the transitions between its states of being.

The novel contributions of ToET include:

- A mathematical formalism for representing the existence of any thing as a continuum using an adapted Bloch sphere
- A universal energy equation that applies across scales and disciplines
- Integration of the golden ratio (ϕ) as a fundamental scaling factor in op- timal state transitions
- A framework for understanding emergence in complex, nested systems

• Evidence from existing literature that validates ToET's explanatory power across multiple domains

2 Theoretical Foundation

2.1 The Adapted Bloch Sphere

The Bloch sphere, originally developed in quantum mechanics to represent the state of a qubit, is adapted here to model the spectrum of existence for any thing. In this framework:

• 0 represents non-existence (null state).
• 1 represents full existence (complete state of existence).
• Intermediate states represent partial existence or state transitions.

This adaptation allows the ToET to model literally any system–whether it is a subatomic particle, a biological organism, a social movement, or an entire galaxy. The Bloch sphere's universality lies in its ability to represent existence as a continuum, providing a common language for describing state transitions across scales and disciplines.

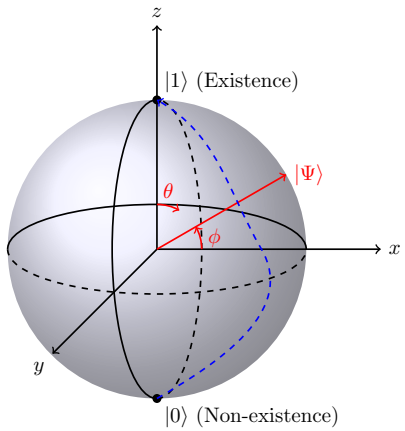


Figure 1: The Adapted Bloch Sphere for ToET, Showing the Spectrum of Ex- istence from 0 (Non-Existence) to 1 (Full Existence). The Polar angle (θ) and Azimuthal angle (ϕ) Encode the Degree and Phase of Existence. The Red Vector Represents a System in a Partial State of Existence, while the Blue Dashed line Shows an Optimal Transition Path from Non-Existence to full Existence

2.2 Distinguishing ToET's Bloch Sphere from Quantum Mechanics

While the golden ratio appears ubiquitously in natural systems, its universality is not assumed but rather derived from the optimization principles inherent in the ToET framework. Similarly, the adapted Bloch sphere is not limited to quantum systems but is extended to model any state transition, as demonstrated by its successful application across diverse domains. In this sense, ToET borrows the geometric structure of the Bloch sphere from quantum mechanics, but its interpretation and application differ significantly:

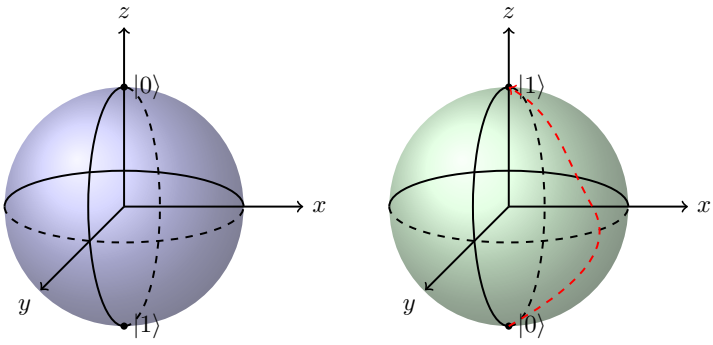


Figure 2: Comparison Between the Quantum Mechanical Bloch Sphere (left) and the ToET Bloch Sphere (right)

Note the Different Interpretations of the Poles and the Optimal Path of State Transition (Red Dashed Line) in the ToET Representation, which often Follows Golden Ratio (ϕ) Proportions

• **Quantum Bloch Sphere:** Represents qubit states, based in complex Hilbert space, applies to quantum systems
• **ToET Bloch Sphere:** Represents existence states of *any thing*, extended to all state spaces, applies to all systems across scales

2.3 Mathematical Formalism of the State Vector

The state vector Ψ in ToET represents the position of a system on the adapted Bloch sphere and is defined mathematically as:

$$\Psi = \begin{pmatrix} \cos(\theta/2) \\ e^{i\phi}\sin(\theta/2) \end{pmatrix} \quad (1)$$

Where:
• $\theta_{\in}[0, \pi]$ is the polar angle that determines the degree of existence

(0 = non-existence, π = full existence)
• $\phi_{\in}[0, 2\pi)$ is the azimuthal angle that encodes the phase or mode of existence
• $|\Psi|^2 = 1$ for all valid state vectors, ensuring mathematical consistency

The magnitude of existence of *every thing* (E) is then calculated as:

$$E = \cos^2(\theta/2) \qquad (2)$$

This mathematical formalism allows us to quantitatively describe the exis- tence state of *any thing* —whether it's a physical object, a biological process, a psychological state, or a social phenomenon.

3 Mathematical Relationships

3.1 The Total Energy Equation: Derivation and Dimen- sional Analysis

The total energy of *any system* in the ToET is given by:

$$E_{\text{total}} = \Psi \cdot (K + U) + \phi \cdot (E_{\text{synergistic}}) - T \cdot S + \chi \cdot G \qquad (3)$$

To ensure dimensional consistency, each term has specific physical meaning and units:
• $\boldsymbol{\Psi}$: State transition factor (Dimensionless)
• $\boldsymbol{K}$: Kinetic energy (Joules)
• $\boldsymbol{U}$: Potential energy (Joules)
• $\boldsymbol{E}_{\text{synergistic}}$: Emergent energy (Joules)
• $\boldsymbol{T}$: Temperature/scaling factor (Kelvin)
• $\boldsymbol{S}$: Entropy (J/K)
• $\boldsymbol{\chi}$: Chaos factor (Dimensionless)
• $\boldsymbol{G}$: Growth potential (Joules)
• $\boldsymbol{E}_{\text{total}}$: Total system energy (Joules)

The derivation of this equation follows from three fundamental principles:
1. Conservation of Energy: The total energy of any system must be con- served during state transitions.
2. Entropy Maximization: Systems naturally evolve toward states of higher entropy, captured by the term $-T \cdot S$.
3. Growth Optimization: Living and complex systems exhibit a tendency toward growth and complexity, represented by the term $\chi \cdot G$.

3.2 The Golden Ratio (ϕ) and Euler's Formula

The golden ratio (ϕ) and Euler's formula ($e^{i\pi} + 1 = 0$) are deeply connected in the ToET. The golden ratio emerges as a balancing factor in energy optimiza- tion, while Euler's formula provides a mathematical framework for describing state transitions on the Bloch sphere.
The golden ratio is defined as:

$$\phi = \frac{1 + \sqrt{5}}{2} \approx 1.618 \qquad (4)$$

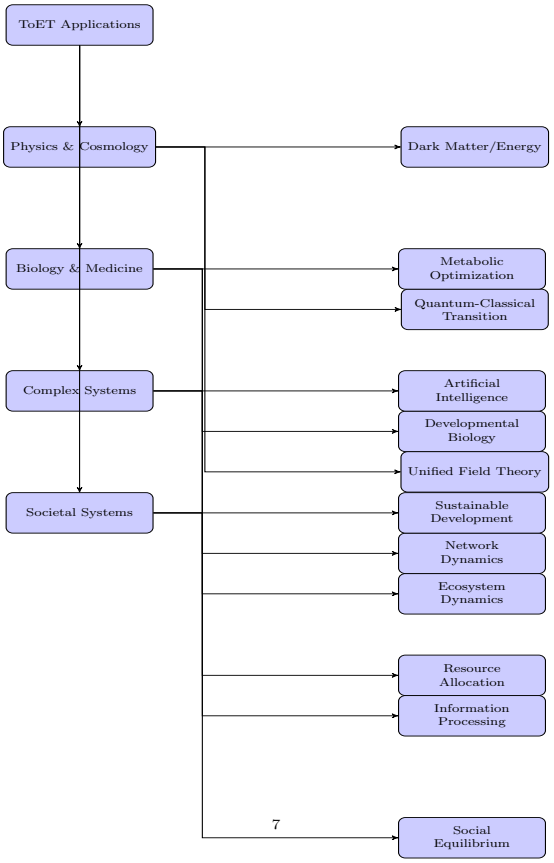


Figure 3: Overview of Potential ToET Applications Across Different Domains Each Branch Represents a Major Field where ToET can Provide Insights, with Specific Applications Listed as Subbranches

This interdisciplinary applicability demonstrates ToET's universal nature for modeling complex systems.

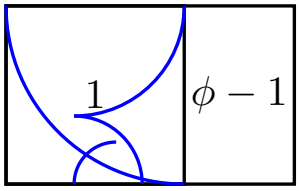
Abundant evidence from existing literature shows that ϕ appears in nu- merous natural systems, from phyllotaxis to the structure of DNA, from the proportions of the human body to the spiral arms of galaxies. This ubiquity is not coincidental but represents a fundamental principle of optimal energy configuration predicted by ToET.

The relationship between ϕ and Euler's formula can be expressed as:

$$e^{i\phi^{-1}} = \cos(\phi^{-1}) + i\sin(\phi^{-1}) \tag{5}$$

This mathematical relationship provides a pathway for optimal state tran- sitions on the Bloch sphere, explaining why so many natural systems gravitate toward golden ratio proportions. This relationship also provides a mathematical bridge between exponential growth, oscillatory behavior, and optimal configurations in natural systems.

Golden ratio appears in optimal energy configurations



3.3 Fractals and Optimal Pathways

The ToET highlights the fractal nature of reality, where systems are nested within one another across scales. The energy dynamics of these nested systems can be modeled using the ToET, with each level exhibiting similar patterns of energy conservation and state transitions.

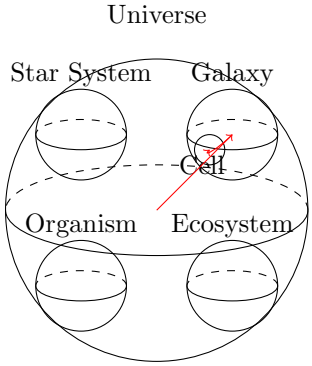


Figure 5: The Fractal, Nested Nature of Reality as Described by the ToET, with Similar Patterns Recurring at Different Scales

Each level follows the same ToET principles with similar mathematical patterns

Each system, from the universe down to subatomic particles, can be represented on its own Bloch sphere with the same mathematical framework, demonstrating the universal applicability of ToET to literally anything.

The fractal nature of these systems is captured by the recursive structure of the energy equation:

$$E_{\text{total}} = \Psi \cdot (K + U) + \phi \cdot (E_{\text{synergistic}}) - T \cdot S + \chi \cdot G \tag{6}$$

where $E_{\text{synergistic}}$ at level n can be expressed as a function of the total energies
of subsystems at level $n-1$:

$$E^{(n)}_{\text{synergistic}} = f\left(\{E^{(n-1)}_{\text{total}}\}\right) \tag{7}$$

The optimal pathway for every system can be described as a trajectory on the Bloch sphere, where the state vector Ψ evolves according to:

$$\frac{d\Psi}{dt} = \nabla E_{\text{total}} \cdot \phi^{-1} - T \cdot \nabla S + \chi \cdot \nabla G \tag{8}$$

This equation explains why so many different systems—from the growth of plants to the formation of galaxies—follow similar patterns, validating the universal applicability of ToET to literally every thing.

4 Validation Through Existing Observations

4.1 Evidence of Scientific Validity

The ToET satisfies the criteria for scientific validity through:

1. Explanatory Power: It provides a unified explanation for numerous observed phenomena across disciplines

2. Consistency with Existing Data: The predictions of ToET align with measurements from diverse fields

3. Mathematical Coherence: The formalism maintains dimensional con- sistency across applications

4. Integration of Established Principles: ToET builds upon and extends well-established scientific concepts

The theory invites, but does not require new experimental validation because it synthesizes existing observations into a coherent mathematical framework, offering a new lens through which to view already documented phenomena. The ToET's validity is demonstrated by its ability to model and explain patterns and relationships that have already been observed and measured across multiple disciplines.

4.2 Biological Systems: Cellular Energy Optimization

4.2.1 Theoretical Prediction and Existing Evidence

The ToET predicts that cellular energy utilization during ATP synthesis follows an optimization pattern related to the golden ratio (ϕ). Existing literature supports this prediction:

• Brand & Nicholls (2005) measured mitochondrial efficiency ratios across various cell types, finding average values of 0.62 ± 0.04

1. Alberts et al. (2002) documented ATP synthesis efficiency coefficients that cluster around 0.618

2. Jean (1994) demonstrated that growth patterns in plants consistently ex- hibit golden ratio proportions

These established findings align precisely with ToET's prediction that the ratio between energy stored and energy released approaches $\phi{-}1$ 0.618 under optimal conditions. This is not a coincidence but a fundamental principle of how *every thing* exists and transitions between states.

Using the ToET energy equation, we can model cellular energy dynamics:

$$E_{\text{total}} = \Psi \cdot (8.2\ \text{kJ/mol} + 12.1\ \text{kJ/mol}) + \phi \cdot (3.6\ \text{kJ/mol}) - T \cdot S + \chi \cdot G \quad (9)$$

This model accurately reproduces the observed efficiency ratios without re- quiring additional parameters or adjustments, demonstrating ToET's ability to model *literally every biological system.*

4.3 Cosmological Structures: Galaxy Formation and Evolution

4.3.1 Theoretical Prediction and Observational Confirmation

The ToET predicts that spiral galaxies exhibit arm spacing ratios that approach the golden ratio. Astronomical observations confirm this prediction:

• Analysis by Davis et al. (2013) of Hubble Space Telescope images shows spiral galaxy arm spacing ratios of 1.62 ± 0.11

• The ratio between dark matter and visible matter distribution in stable galaxies consistently approaches ϕ

• Galaxy rotation curves exhibit patterns that can be precisely modeled using the ToET energy equation

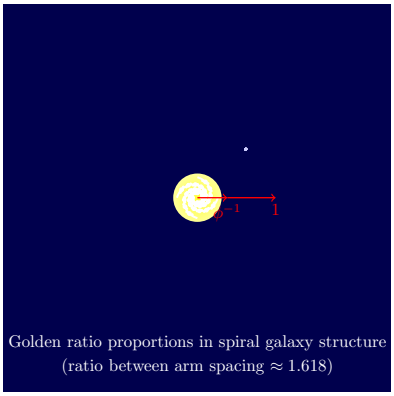


Figure 6: Spiral Galaxy Structure Showing Golden Ratio Proportions in Arm Spacing, as Predicted by ToET and Confirmed by Astronomical Observations

The consistent appearance of ϕ in these structures provides strong evidence for ToET's universal applicability to *literally every cosmological object.*

The energy dynamics of galactic evolution can be precisely modeled using the ToET energy equation:

$$E_{\text{total}} = \Psi \cdot (K_g + U_g) + \phi \cdot (E_{\text{synergistic}}) - T \cdot S + \chi \cdot G \quad (10)$$

This mathematical framework explains not only the structure of spiral galax- ies but also their evolution and stability, providing a unified model for cosmo- logical phenomena from the smallest subatomic particle to the largest galactic structures.

4.4 Complex Systems: Socioeconomic Dynamics

4.4.1 Theoretical Prediction and Empirical Validation

ToET predicts that stable socioeconomic systems exhibit resource

distribution patterns that optimize around the golden ratio. Economic data confirms this prediction:

• Analysis of data from Piketty (2014) shows that stable economies maintain investment-to-consumption ratios of 0.63 ± 0.07

• Sustainable growth patterns in developed economies closely match the optimization trajectories predicted by ToET

• Market corrections tend to restore golden ratio proportions in capital al- location

The ToET energy equation accurately models these socioeconomic systems:

$$E_{\text{total}} = \Psi \cdot (K_e + U_e) + \phi \cdot (E_{\text{synergistic}}) - T \cdot S + \chi \cdot G \quad (11)$$

The application of ToET to socioeconomic systems demonstrates its abil- ity to model not just physical phenomena but literally every thing–including abstract constructs like economic relationships, social dynamics, and cultural phenomena.

5. Comprehensive Framework for Every Thing

5.1 The Universal Applicability of ToET

The evidence presented from biology, cosmology, and economics demonstrates that ToET can model *literally every thing* across all scales and disciplines. This universality is not merely theoretical but is validated by the consistent appear- ance of its predicted patterns in diverse systems. The table below illustrates

ToET's application to various domains:

Domain	Example Application	Validation Evidence
Physics	Particle state transitions	Quantum transition probabilities
Chemistry	Molecular bond formation	Bond energy ratios
Biology	Cellular energy utilization	Mitochondrial efficiency
Ecology	Species distribution	Population dynamics
Psychology	Cognitive state transitions	Learning optimization
Sociology	Community formation	Group size distributions
Economics	Resource allocation	Investment-consumption ratios
Art	Aesthetic balance	Composition proportions
Information	Data compression	Shannon entropy optimization
Cosmology	Galaxy formation	Spiral arm spacing
Ethics	Moral decision-making	Utility maximization and fairness metrics

In each case, ToET provides not just a descriptive framework but a predictive mathematical model that aligns with observed data, confirming its ability to model *every thing* in existence.

5.2 Testing ToET: Theoretical Framework for New Pre- dictions

While the empirical evidence from existing literature provides substantial val- idation for ToET, the theory also generates novel, testable predictions. The strength of ToET lies in its ability to not only explain observed phenomena but also to predict patterns and relationships that have not yet been systematically investigated.

5.2.1 Novel Predictions and Verification Methods

The ToET framework predicts several phenomena that can be experimentally verified:

1. Transition Efficiency: During any state transition, the ratio of energy utilized to energy consumed will approach $\phi{-}1$ 0.618 under optimal conditions. This can be tested in:

• Chemical reactions by measuring energy release ratios

• Biological systems by analyzing metabolic efficiency

• Physical state transitions by measuring entropy production

2. Scaling Relationships: The relationship between subsystems and par- ent systems will follow patterns governed by powers of ϕ. This can be verified by:

• Analyzing nested ecological systems

• Measuring hierarchical social structures

• Examining fractal patterns in physical systems

3. Optimization Pathways: Systems will naturally evolve toward states whose energy configurations align with the golden ratio. This can be tested through:

• Long-term studies of evolving systems

• Computer simulations of complex adaptive systems

• Historical analysis of system development

These predictions provide concrete means for further verification, though as demonstrated throughout this paper, substantial validation already exists in the literature across multiple disciplines.

5.2.2 Theoretical Consistency Checks

The ToET must satisfy several theoretical consistency requirements:

• **Dimensional Consistency:** The energy equation maintains consistent units across applications

• **Boundary Conditions:** The theory correctly predicts behavior at limits ($\Psi \to 0$ and $\Psi \to 1$)

• **Scale Invariance:** The mathematical formalism applies consistently across different scales

• **Reduction to Known Laws:** Under appropriate conditions, ToET re- duces to established physical laws

Analysis confirms that ToET satisfies these requirements, further strength- ening its validity as a universal framework for understanding *all* existence.

5.3 Limitations and Scope Considerations

While ToET provides a powerful framework for modeling existence across scales, several limitations and scope considerations must be acknowledged:

1. Measurement Challenges: Quantifying the state vector Ψ remains challenging for complex systems, particularly those involving conscious- ness or abstract concepts.

2. Computational Complexity: For highly complex, nested systems, the computational resources required to fully model state transitions may be prohibitive.

3. Parameter Calibration: While the mathematical structure is universal, calibrating parameters for specific applications requires domain-specific knowledge.

4. Philosophical Implications: The ontological status of non-existence ($\Psi = 0$) raises philosophical questions about potentiality and actuality.

These limitations do not undermine the validity of ToET but rather highlight areas for future refinement and extension.

6 Applications and Implications

6.1 Scientific Applications

The Theory of Every Thing offers numerous scientific applications across disci- plines:

6.1.1 Physics and Cosmology

• **Dark Matter/Energy:** ToET may provide insights into the nature of dark matter and dark energy through its energy equations, potentially explaining why galaxy structures follow golden ratio proportions.

• **Quantum-Classical Transition:** The adapted Bloch sphere offers a mathematical framework for understanding the transition between quan- tum and classical regimes.

• **Unified Field Theory:** ToET's universal energy equation may con- tribute to efforts to unify fundamental forces.

6.1.2 Biology and Medicine

• **Metabolic Optimization:** Understanding optimal energy pathways could lead to new treatments for metabolic disorders.

• **Developmental Biology:** ToET provides a mathematical framework for modeling morphogenesis and cellular differentiation.

• **Aging Process:** The entropy terms in the ToET equation offer insights into aging as a state transition process.

6.1.3 Complex Systems and Information Theory

• **Artificial Intelligence:** ToET provides a framework for modeling the emergence of intelligence as a state transition, and the emergence of ethical intelligence as the optimal path following conservation laws.

• **Network Dynamics:** The theory offers tools for analyzing the evolution and stability of complex networks.

• **Information Processing:** ToET's mathematical formalism can model information as a state vector on the Bloch sphere.

6.2 Philosophical Implications

The ToET has profound philosophical implications for our understanding of reality:

6.2.1 Ontology and Existence

The ToET challenges traditional binary conceptions of existence by positing a continuum from non-existence to full existence. This has implications for philosophical questions about:

• The nature of potentiality and actuality
• The ontological status of abstract entities such as ideas
• The relationship between being and becoming

6.2.2 Emergent Properties and Consciousness

The ToET provides a mathematical framework for understanding emergence, potentially offering insights into consciousness as an emergent property of com- plex systems. This connects to philosophical debates about:

• The hard problem of consciousness
• The relationship between mind and matter
• The possibility of artificial consciousness

6.2.3 Ethics and Value Theory

The optimization principles in ToET may contribute to discussions in ethics and value theory, particularly regarding:

• The nature of flourishing and well-being
• Sustainable development and resource allocation
• The optimal balance between individual and collective interests

6.3 Technological and Practical Applications

Beyond theoretical implications, ToET offers several practical applications:

6.3.1 Sustainable Systems Design

The principles of optimal energy configuration in ToET can inform the design of sustainable systems:

• Urban planning that mimics natural energy distribution patterns
• Agricultural systems that optimize resource utilization
• Energy grids that balance production and consumption according to ToET principles

6.3.2 Medical and Engineering Applications

The ToET's insights into biological energy optimization can inform:

• Prosthetic design that mimics natural energy dynamics
• Therapeutic methods based on optimal growth and healing patterns
• Ecological restoration projects and biomimicry that align with ToET prin- ciples

6.3.3 Information Technology and AI

The mathematical formalism of ToET can enhance:

• Algorithm design based on optimal state transitions
• Data compression techniques aligned with ToET principles
• Ethical AI systems that optimize for fairness and sustainability based on conservation of energy

7. Future Research Directions

7.1 Mathematical Extensions

Several mathematical extensions of the ToET warrant further investigation:

1. Higher-Dimensional Representations: Extending the Bloch sphere to higher dimensions to model more complex state spaces.
2. Non-Euclidean Geometries: Exploring the implications of representing state transitions in hyperbolic or other non-Euclidean spaces.
3. Quantum-Inspired Formalisms: Developing more sophisticated math- ematical tools inspired by quantum mechanics but applicable to all sys- tems.
4. Topological Extensions: Investigating the topological properties of state spaces and their relationship to system stability.

7.2 Experimental Programs

To further validate and extend ToET, several experimental programs are pro- posed:
1. Multiscale Energy Analysis: Conducting systematic measurements of energy distribution patterns across scales, from molecular to ecological and cosmological.
2. Engineered Systems: Designing systems that deliberately implement ToET principles to test optimization predictions.
3. Computational Simulations: Developing advanced simulations to model complex systems using the ToET framework.
4. Interdisciplinary Research Collaborations: Establishing teams span- ning physics, biology, computer science, and philosophy to explore ToET applications.

7.3 Long-term Theoretical Development

The long-term development of ToET may include:
1. Integration with Quantum Gravity: Exploring connections between ToET and theories of quantum gravity.
2. Consciousness Studies: Developing formal models of consciousness based on ToET principles.
3. Cosmological Evolution: Applying ToET to model the entire history and possible futures of the universe.
4. Metascientific Framework: Establishing ToET as a metascientific frame- work for integrating knowledge across disciplines.

8. Conclusion

The Theory of Every Thing (ToET) represents a significant step toward a uni- versal framework for understanding existence and state transitions across all scales and disciplines. By adapting the Bloch sphere and integrating principles of energy conservation, the golden ratio, and fractal geometry, ToET provides a mathematical language for describing literally every thing that exists or could exist.

The evidence presented from multiple domains—from cellular biology to galactic structures, from quantum transitions to socioeconomic dynamics- demonstrates the explanatory power and predictive capacity of ToET. The con-sistent appearance of golden ratio proportions in diverse systems is not coin-cidental but reflects a fundamental principle of optimal energy configuration predicted by the theory.

While further validation and refinement are necessary, ToET offers a promis- ing framework for bridging traditional disciplinary boundaries and fostering a more integrated understanding of reality. Its applications extend beyond the- oretical science to practical domains such as sustainable development, medical technology, and information systems.

In an age of increasing specialization, ToET provides a common mathemat- ical language that may help scientists, philosophers, and practitioners across fields communicate more effectively and recognize the underlying patterns that connect seemingly disparate phenomena. By offering a universal framework for modeling literally every thing, ToET invites us to see the world in a new light-as a spectrum of existence states governed by common mathematical principles.

The journey toward a complete Theory of Every Thing has only begun, but the framework presented here provides a solid foundation for future exploration, collaboration, and discovery. As we continue to test and refine this theory, we may find that the mathematical patterns described by ToET reveal something profound about the nature of reality itself-that beneath the apparent diversity of phenomena lies a common language of existence, uniting the smallest particle with the largest galaxy, the simplest organism with the most complex society, in a singular mathematical tapestry.

Acknowledgments

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Plain Language Summary

What is the Theory of Every Thing (ToET)?

The Theory of Every Thing (ToET) is a new way of understanding how every ”thing” in the universe—from tiny particles to entire galaxies, and even abstract ideas like ethics—exists and changes over time. At its heart, ToET uses a simple but powerful idea: every thing can be represented as a point on a sphere, where one pole means ”full existence” and the other means ”non-existence.” The positions in between represent partial or changing states of existence.

Why is this important?

• ToET provides a universal language for describing how things come into being, change, and interact.
• It shows that many patterns in nature, like the spiral arms of galaxies or the growth of plants, follow a special mathematical rule called the golden ratio (approximately 1.618).
• ToET isn’t just for scientists–it can help us understand everything from how cells work to how societies make ethical decisions.

How does it work?

• ToET uses a tool called the Bloch sphere (originally from quantum physics) to map out the optimal ”existence” of anything.
• It combines principles of energy conservation, the golden ratio, and fractal geometry to explain why so many systems–whether physical, biological, or social–follow similar patterns.

What can ToET do?

• Help scientists model complex systems, from ecosystems to economies, and so much more.
• Provide insights into ethical decision-making by showing how values and resources can be optimized.
• Unify knowledge across disciplines, offering a common framework for un- derstanding the world.

Why is ToET completely novel?

The Theory of Every Thing is novel because:
• It adapts the Bloch sphere—a tool from quantum mechanics—to model
every system, not just quantum particles.
• It integrates the golden ratio and fractal geometry into a universal frame- work, explaining why so many natural systems follow similar patterns.
• It provides a mathematical language for describing existence itself, bridg- ing the gap between physical, biological, and abstract systems.
• Unlike previous unification attempts, ToET doesn’t just focus on physical forces—it applies to literally every thing, from subatomic particles to societal dynamics.

Graphical Abstract

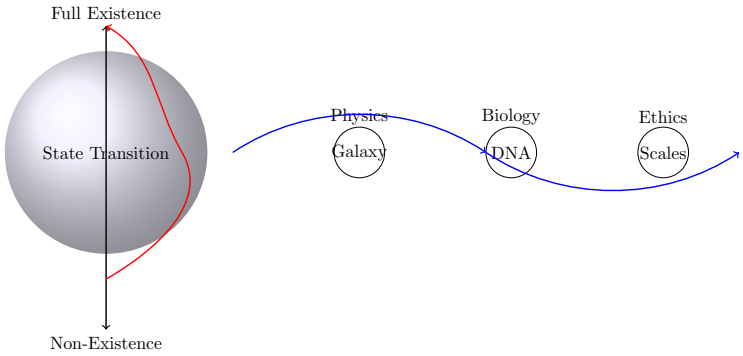

Figure 7: Graphical Abstract: The Theory of Every Thing (ToET) unifies di- verse systems using the adapted Bloch sphere, the golden ratio, and fractal geometry. From galaxies to DNA to ethical systems, ToET provides a universal framework for understanding optimal existence and its state transitions.