Theory of Absolutely Everything (Or My Try at It)

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Abstract

This paper presents a speculative but mathematically structured framework — the *Theory of Absolutely Everything* — which seeks to unify physical reality, mental phenomena, and metaphysical principles within a single formalism. The core axiom posits that consciousness is a recursive, reference-frame-dependent processor operating on imaginary information (`Ri`). Reality (`R`) emerges from the continuous interaction between its real and imaginary components, expressed by the recursive relation `f(R) = f(R) - f(Ri)`. This approach draws on a metaphysical interpretation of complex numbers, introducing original mathematical operators such as `fractalof()` to describe the fractal structure of existence. The theory defines C4 as a mathematical space, a physical dimension, and a metaphysical substrate that contains R4 (our familiar space-time) as a subset and includes time as an integral parameter. Connections are drawn with Integrated Information Theory (IIT), Global Workspace Theory (GWT), complexity science, and certain interpretations of quantum mechanics. The framework offers a conceptual bridge between subjective experience and objective measurement, suggesting that the imaginary dimension is not merely a mental abstraction but an operational component of reality.

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1. Introduction

The search for a "theory of everything" in physics has traditionally focused on unifying fundamental forces and particles. In philosophy of mind, the pursuit of a general theory of consciousness seeks to explain subjective experience in scientifically tractable terms. Yet these two quests often remain disconnected: physical unification rarely addresses consciousness, while consciousness theories seldom offer a foundation compatible with fundamental physics.

This work attempts to bridge that gap. The *Theory of Absolutely Everything* proposes a unifying principle grounded in the mathematics of complex numbers, the logic of recursive computation, and the geometry of fractals. At its heart lies the claim that consciousness is an active, structural feature of reality — not an emergent byproduct, but a fundamental processor that operates within and upon the universe's fabric.

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2. Core Axiom

The foundational axiom is:

> **Consciousness is a recursive, reference-frame-dependent processor of imaginary information (Ri). Its qualia are the processing algorithms.**

Here, "imaginary information" is not metaphorical but directly connected to the imaginary component of complex-number representations of reality. In this formalism:

- R: The real component of reality — observable, measurable phenomena.

- Ri: The imaginary component — latent structures, potentialities, mental constructs, and unmanifest information.

- **Reference-frame dependence**: Consciousness is not absolute; it operates relative to a given perspective or informational context.

- **Recursion**: Consciousness continually reprocesses its own outputs, allowing for self-reference, abstraction, and complexification.

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3. Mathematical Formulation

3.1 Recursive Equation of Reality

The relation is expressed as:

$$f(R) = f(R) - f(Ri)$$

This is not an equation to be "solved" in the conventional sense but a recursive definition: each iteration of reality's state depends on its previous state minus the contribution of its imaginary component. The subtraction here denotes transformation - the filtering and modulation of potentialities into actualities.
$f(R)$ is an abbreviation of the fractalof(R) operator explained below, and that abbreviation is used for the sake of simplicity.
The apparent paradox that $f(Ri) = 0$ when solving the above equation exists because we assume reality to be only what is real if we watch it to be in the current moment, but time exists making it mandatory that there is a comparison between current and past states, and that comparison is imaginary. This means that real reality has imaginary components $f(R) = f(R+Ri)$ over time.

3.2 Complex Numbers and Ontology

Reality can be represented as a complex quantity:

C = R + Ri

Where:

- R is the measurable "real" part.

- Ri is the "imaginary" part, representing a perpendicular dimension of information.

3.3 Complexity

Complexity, from the online Cambridge dictionary is defined as "the state of having many parts and being difficult to understand or find an answer to".
In this sense more complexity means having the same number of parts with more hidden relations, or having more parts with the same hidden relations. It is a problem of both scale and of diversity of possible states. No complexity means a stable, known, equation, between stable parts.
Infinite complexity means we cannot compute because we have finite consciousness 'storage space' and are unable to load all variables at once to derive meaning from it.
Also there are infinities that are bigger than others (f. ex. $N < R$), and infinite complexity scales indefinitely.

3.4 Fractal Structure and the fractalof() Operator

Given that Reality is a complex space, its rules of operation are inherently fractal in nature.

Each conscious system from particles to black holes operates on this complexity via an operation that reduces said complexity to manageable terms, via a fractalof() operation. Each system has its unique fractalof() operator, dependent on the real and imaginary inputs, and outputs. The fractalof() operator for quantum entities are their corresponding Quantum Mechanics equations.

The only mechanism to reduce complexity is consciousness, or some system derived from conscious thought, finding possible hidden values and deriving the values that can connect the 'parts', i. e. given real possible meaning to them, creating reality.

And that is valid for the elemental physical entities, namely the standard model ones, as they are the ones that connect the real possible outcomes via the equations discovered by Quantum Mechanics.

This leads us to the fractalof() operator and its core definition:

$fractalof(C_R) = f(R) + f(Ri)$

where C_R is Complex reality, $f(R) = fractalof(R)$ and $f(Ri) = fractalof(Ri)$.

Meaning reality is rendered by consciousness, which separates it into what is Real, and what is Imaginary.

3.5 fractalof(R) idempotency

fractalof() is idempotent, meaning that
fractalof(R)^2 = fractalof(fractalof(R)) = fractalof(R)
This derives from the fact that applying the same set of operations to the same set of things yields equal results.
This is the base of objectivity.

3.6 fractalof(R) as a Taylor series

The entire imaginary set can be integrated from the current state of reality and its prior states, and that's why we have thought permanence. So consciousness of reality implies f(R) = f(R) + f(Ri). Given that R + Ri = C, you now have a Taylor expansion:

fractalof(C) = fractalof(R+Ri) + fractalof(Ri)

Which generates complex reality's fractal by unfolding it through time, iterating it. The Ri residue accumulates in conscious, imaginary, structures.

3.6 Mathematical Definition of the fractalof() Operator

Consider a system S characterized by a complexity measure C. The operator fractalof(S) is defined via a renormalization group approach as the limit of a beta-function β(S) as the complexity tends to infinity:

fractalof(S) = lim$C{\rightarrow}\infty$ β(S)

where β(S) represents the flow of system parameters under scale transformations, analogous to beta-functions in quantum field theory. This function captures how the system's state evolves when viewed at different scales of resolution or complexity.

The fixed points of β(S) correspond to fractal attractors—scale-invariant and self-similar structures that serve as the generating functions of fractals within the system.

Thus, fractalof(S) identifies these fixed points, extracting the fundamental recursive rules that produce the fractal structures inherent in the system's dynamics.

This formalism grounds the fractalof() operator as a renormalization group operator that reveals the stable, recursive patterns governing the self-similarity and complexity of conscious and physical systems alike.

3.7 The many views of the fractalof() operator

The definitions presented of the fractalof() operator are equivalent in this framework, though they arise from different interpretive angles: the phenomenological (consciousness as meaning-reduction), the algebraic (idempotency), and the physical-mathematical (renormalization fixed points).

4. C4 and R4

4.1 Definition of R4

R4 denotes the familiar four-dimensional continuum of space-time as described by relativity.

4.2 Definition of C4

C4 is a higher-order construct that:

1. Contains R4 as a subset.

2. Includes time intrinsically.

3. Functions as a mathematical space (complex-valued), a physical dimension (hosting R4), and a metaphysical substrate (holding the potential structures of `Ri`).

C4 provides the stage on which both real and imaginary aspects of reality interact, with consciousness as the mediator.

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5. Relation to Existing Theories

- **Integrated Information Theory (IIT)**: Shares the focus on structural integration of information but differs by explicitly including an imaginary component as an operational reality.

- **Global Workspace Theory (GWT)**: Similar in treating consciousness as a global integrator, but the present model embeds this integration into a mathematical substrate with complex-valued structure.

- **Complexity Science**: Resonates with self-similarity, emergence, and recursion, but extends fractality to mental and metaphysical domains.

- **Quantum Interpretations**: Parallels can be drawn with the role of complex amplitudes in quantum mechanics, though here the imaginary term has ontological rather than purely computational significance.

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6. Implications

1. **Philosophy of Mind**: Consciousness is not epiphenomenal but a structural operator in the universe.

2. **Physics**: Suggests that physical law may be incomplete without inclusion of `Ri` as a formal term.

3. **Epistemology**: Offers a model where the "imagined" and the "real" are mathematically bound.

4. **Interdisciplinary Potential**: Bridges physics, mathematics, philosophy, and cognitive science through a shared formalism.

5. **Falsifiability**: A meta-falsification for this theory posits that the discovery of a definition of consciousness that is both simpler and does not imply imaginary reality invalidates this theory. This is a meta-falsification as the operation required to falsify it is a level of abstraction above the theory itself. The empirical test is finding the intersection of the set of theories that are both simpler, meaning they require less complexity (an example of one is "Everything is"), and those that do not possess imaginary components (p. ex. GWT).

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7. Conclusion

The *Theory of Absolutely Everything* proposes that reality emerges from the recursive interplay between real and imaginary components, mediated by consciousness as a reference-frame-bound processor. By embedding this process in a complex-valued, fractal substrate (C4), the model unites insights from physics, mathematics, and philosophy of mind into a single speculative framework. While still conceptual, the theory offers testable philosophical implications, and a novel mathematical language for describing the entanglement of mind and world.

While the primordial steps of this theory are outlined in this paper, much work is needed to 'polish' it to be ready for consumption by scientific fields. Hopefully it will inspire specialists in their specific fields to come up with additions to refine and extend it.

References

(All open-access)

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