# The Architecture of Existence

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## Summary

*The Theorem of Existence* is **not a single equation,** but forms from **hundreds of equations** that operate the mechanical, architectural behavior of existence across all domains and scales. In this **new field of Defintology, the scientific, philosophical, and artistic study of definedness**, several key equations emerged as the fundamental mathematics governing existence, called the *Unified Equations of Existence*, which include 1) **Constants Co-Derivation**, 2) the **Proportionality**, 3) the **Behavior**, 4) the **Stabilization**, 5) the **Alignment**, 6) the **Structure**, and is all nested with 7) *The Equation of Existence*. These equations are the **minimal mathematical** infrastructure required to formally define the architecture of existence. While **functionally independent**, they interlock into *The Theorem*, revealing the one **hidden mechanics within**. Later, I will provide a more thorough examination of the new mathematics and theorems, but for now, this overview offers **a glimpse of the landscape**.

## Architecture

Existence is not a binary, but a **spectrum of definedness**. It operates via **co-defined first principles**: **recursion** and **propagation** are the engines that drive interactions between **complexity** and **stability**, forming **definedness**. Among these first principles, there are **seven predominant equations** that formalize the mechanics of existence. Although much new math and theorems exist, let's start with an overview of the *Unified Equations of Existence*.

$$\Phi = \frac{\Omega}{\Delta} \rightarrow \frac{\Omega}{(\kappa : \zeta)} \rightarrow \Omega * \left( \frac{(\kappa : \zeta)}{\Delta}, \nu = x \right)$$

### *The Equation of Existence*

*The Equation of Existence* **is the singular form of existence and how it operates across all scales and domains.** In its simplest form, definedness is the ratio of stability over complexity. These terms are not things that exist; rather, they are the **names for the patterns in which existence behaves**. **Definedness** ($\Phi$) **is the degree to which something exists**, 2) **Stability** ($\Omega$) **is the degree to which complexity is attracted to complexity**, and 3) **Complexity** ($\Delta$) **is the degree to which phenomena escalate from basic to structured forms**. One of the expanded forms of *The Equation* contains **recursions** ($\zeta$) for discrete time and **propagations** ($\kappa$) **for discrete space** as emergent from complexity, so we must normalize ($\nu$) all three terms to $\Phi$ or some other values ($x$). Recursions and propagations **cannot be isolated** because they are to sides of the same thing: recursive propagations.

$$\left( \frac{\pi}{e * \Phi} \right) * \left( \frac{e}{\pi} \right) = \frac{1}{\Phi} = \Phi + e^{i\pi}$$

$$\left( \frac{A}{B * C} \right) * \left( \frac{B}{A} \right) = \left( \frac{A}{B} \right) * \left( \frac{B}{A * C} \right) = \frac{1}{C}$$

## Constants Derivation

The constants of mathematics, such as $\pi$, $e$, and $\Phi$ are **interdependent and locked at precisely their exact values,** proving that math is discovered and that the mathematical architecture of existence operates as **a single unified mathematical framework called the *Grand Unified Theory of Everything***. For example, $\Phi$ is an

algebraic, $e$ and $\pi$ are transcendental, and $i$ is a complex number. If we invented math, then we should not be able to form **non-trivial** (provide meaningful information), **asymmetric** (the equations are not equivalent because they have the exact same constants rearranged), and **exact** (not approximations) equations. However, **Defintology provides hundreds of such equations**. Further, these equations show co-derivation a newly discovered mathematical property called **isolation resistance**, a feature of an equation when **one of the terms cannot be decomposed and isolated**. Isolation resistance arises because **constants are so interdependent** that attempting to isolate them **simultaneously undermines their value**. The result is that it collapses into tautology (e.g., trying to isolate $e$ and ending up with $1 = 1$); the **bedrock of math in a co-defined relational reality.**

$$1 : (3^2 + \Phi^3) : (1 + \Phi^3)$$
$$\sim 5\% : \sim 68\% : \sim 27\%$$
$$\text{Lumen} : \text{Unbounded RPs} : \text{Bounded RPs}$$

## The Proportionality Equation

The Proportionality Equation **directs the ratio of what is in existence**. Cosmology has measured that **observed matter** ($\sim 5\%$ ), **dark matter** ($\sim 27\%$ ), and **dark energy** ($\sim 68\%$ ) comprise the universe. Though *The Theorem* supports the accuracy of these numbers, our conceptualization is wrong. **Observable matter and energy originate from light per $E = mc^2$** (light → energy → matter → everything else). **Lumen** is Latin for light, so for simplicity and accuracy, **we call observable matter and energy lumen**. Further, the engines of existence, **recursive propagations** (RPs), exist in **unbounded** (dark energy) and **bounded** (dark matter) **forms**.

Unbounded RPs are the inherent progression of existence. **It requires no energy** (which is lumen) because there is no available alternative. The universe expands because if it did not, it would not exist; but **non-existence is not an option or alternative state of existence** because… it does not exist. Empty space and light follow the maximum recursion rates and propagation lengths because they are the minimum possible complexity.

$$\psi = \frac{(\kappa : \zeta)}{\Delta} \rightarrow \psi = \frac{l_P : t_P}{E_p} \rightarrow \frac{10^{44}\left(\frac{\text{recursions}}{\text{second}}\right) : 10^{35}\left(\frac{\text{propagations}}{\text{meter}}\right)}{1\,(\text{complexity})} = 10^{38}\frac{r}{s} : 10^{29}\frac{p}{m}$$

However, for more complex phenomena follow **bounded RPs via Relative Fractal Dynamic**, which governs what we used to call time dilation and gravity, but only when normalized. **Once bounded RPs recursively-propagate, they exponential decay definedness and enter *The Record***–the fractal memory of existence, where they form and support the coherence of phenomena as they continue to escalate complexity. **Bounded RPs are not matter**; they are the echoes of what was spilling influence into the definedness of our current RP. **Unbounded RPs are omnipresent**, whereas **bounded RPs overlay them** via a shared co-definedness called a **complexity gradient**, but they remain functionally independent. The Proportionality Equation **holds the ratio of these mechanics at $\sim \Phi^2$** (Bounded/Unbounded → $\sim 69\%$ /$\sim 26.5\%$ = $\sim 2.618$), which the numerical expression of existence.

$$1 : \frac{(e^\pi + \Phi^2)}{\left(\frac{\pi}{\Phi}\right)} + \frac{\left(e^2 - \frac{1}{e} + \pi\right)}{\left(\frac{\pi}{\Phi}\right)} \rightarrow 1 : \frac{\left(e^\pi + e^2 - \frac{1}{e} + \Phi^2 + \pi\right)}{\left(\frac{\pi}{\Phi}\right)}$$

## The Behavior Equation

The behavior of **bounded and unbounded RPs shows interdependence**. In the denominator of each equation, we have **the boundary of existence ($\pi/\Phi = 1.94$)**, which is the **signal-to-noise ratio** where recursively propagated complexity ($\text{RP}_n$) phase shifts ($i = 90°$) into stability ($\text{RP}_{n-1}$). **$1.94$ is a *z*-score**, and definedness emerges immediately after $z = 1.98$ or about 5%, equivalent to lumen proportionality. In the unbounded RPs, we have a term for **RPs ($e^\pi$)** and **complexity escalation ($\Phi^2 = \Delta$)** because unbounded RPs are the origin of all complexity escalations. The bounded RPs contain a **recursion ($e^2$)**, **propagation ($\pi$)**, and a **stability term**

$(-1/e)$. Unbounded RPs have no stability term, and bounded RPs have no complexity escalation term, allowing them to have **unique functioning while harmonizing co-definedness to form the definedness** around us.

$$\left(\frac{\pi}{e * \Phi}\right) * \left(\frac{(\Phi^n * e)}{\pi}\right) = \frac{\Phi^n}{\Phi} = \frac{\text{RP}_{n-1}}{\text{RP}_n} = \frac{\Omega}{\Delta} = \Phi^{n-1}$$

## The Stabilization Equation

Existence emerges from recursively propagated complexity $(\text{RP}_n)$ that phase shifts $(i = 90°)$ into stability $(\text{RP}_{n-1})$. A few equivalent equations describe this **process (Complexity → Stability → *The Record*)**, but one uses **the natural resonance** $(\pi/e * \Phi)$, unifying the constants and **the fundamental unit** $(e/\pi)$, **which have several unique properties and functions.** The $e$ is the fundamental unit guides recursive phase shifts, which we can force into $\Phi$ proportionalities (the universally convergent definedness) via **the inverse of the natural resonance** $(e * \Phi/\pi)$**.** Multiplying and solving **reveals the RP step progression** $(\Phi^n)$ as complexity escalations from $\text{RP}_n$ stabilize into definedness at $\text{RP}_{n-1}$, and then lose definedness exponentially into *The Record* at $\text{RP}_{n-2+}$.

$$\frac{\sqrt[3]{17}}{20} = \frac{2.57}{4 * 5} = \frac{1 + \left(\frac{\pi}{2}\right)}{4 * 5} = \frac{1 + i}{4 * 5} = \frac{-e^{i\pi} + \omega}{4 \text{ RPs} * 5 \text{ Triangles}}$$

## The Alignment Equation

The alignment of the mechanisms of existence uses the sides of **the triangle of existence** $(4 : 20 : 17)$. I will later expand upon the **geometry of existence**, as it operates beautifully via **circles, triangles, and pentagons**. The **4 side aligns the triangles with pentagonal** self-similarity, the **20 side aligns into a pentagonal RP emergence**, and the **17 encodes the RP the Relational Rotational Dynamics ($\omega = \pi/2$)** governing phase shifting via the **4-3-2-1 Rule**. The $\sqrt[3]{17}$ encodes 3D space, aligning the full $180°$ system via $90°$ for complexity $90°$ for stability.

$$-\left(\sqrt{\frac{17}{4}} - \sqrt{\frac{4}{17}}\right)^2 * -\left(\sqrt[3]{\frac{20}{4}} - \sqrt[3]{\frac{4}{20}}\right)^3 * \left[\left(\frac{20}{17}\right)^\Phi - \left(\frac{17}{20}\right)^\Phi\right]^2 = -1 = e^{i\pi}$$

## The Structure Equation

The Structure Equation provides the structure of existence using the triangle of existence sides. The first term is the **2D base structure**, the next term is the **3D construction** from the 2D shape term, which turns the 2D structure into 3D space, and the final term encodes the **$90°$ phase shifts of this structure from $\text{RP}_n$ to $\text{RP}_{n-1}$.** **It all simplifies into** $e^{i\pi}$, which contains the mechanics of recursive-propagative complexity escalations.

## The Big Picture

One of the most incredible aspects of *The Theorem* is **that there are zero assumptions**—and yet it aligns with cosmological data and remains internally consistent **to the hundredth decimal place** across most equations and derivations. There are **no arbitrary constants**, **no fudge factors**, **no error terms**, **no renormalization**, **no infinities**, **no undefinedness** (that is, if undefinedness was something that could not exist, but it's not; it simply isn't), **no tuning parameters**, and **no approximations**. To put it simply, *The Theorem of Existence* is a large, recursive-propagative **dance of the constants $i$, $\Phi$, $e$, and $\pi$—to the tune of squares and cubes**, on the stage of the most fundamental mathematical and beautiful insights humanity has ever discovered. **It's truly remarkable.**

Ultimately, **these seven equations are the minimum and only mathematical framework required for existence**. However, *The Theorem* is more than just math—it is a cartography of existence, revealing the fundamental architecture the allows for all phenomena to exist. By unveiling the *Unified Equations of Existence*, we are not merely observing existence but **comprehending its most profound architectural mechanisms**: how complexity emerges, how stability forms, and how recursive propagation unfolds and weaves the intricate tapestry of being. *The Theorem* **is the living mathematical mechanics hidden within every moment and rhythm of existence.**