

Against the Blur: Life in a Finite-Resolution Universe

Emiliano Shea

A Dual-Sector Monistic Ontology.

December 2025

"Even if there is only one possible unified theory, it is just a set of rules and equations. What is it that breathes fire into the equations and makes a universe for them to describe?"

Stephen Hawking [2]

Abstract

We assume being "alive" and being "physically real" are separate questions, but physics suggests they are the same problem. This essay argues that reality is a collision between **Syntax** (the measurable code) and **Semantics** (the unmeasurable substance), resulting in the structural necessity of **existence**. This necessity is most vividly expressed in the active separation we call life.

1 The Edge of Yourself

HOLD your hand up to the light. Look at where your finger ends and the air begins. It looks sharp, doesn't it? You are *here*, and the rest of the world is *there*. This feeling of being a distinct "Self" feels like the most basic fact of your existence.

But to a physicist, that edge is a miracle.

The natural state of the universe is not sharpness, but a blur. Entropy—the tendency of things to get messy—wants to smear you out. It wants to dissolve your atoms into the air until there is no "you" left, just a tepid, uniform soup of particles [6].

So why don't you dissolve? Why do you stay distinct? The answer isn't just biology. It goes deeper, to the very fabric of reality. A crystal holds its shape against the blur; an atom holds its orbit. **Existence** is the fundamental struggle against the indeterminate.

I once read a case study of a woman—let's call her Yolanda—who experienced this dissolution firsthand. A severe stroke had damaged her parietal cortex, the part of the brain that maps the body's boundaries. She would pick up a coffee cup and be unable

to tell where her hand ended and the ceramic began. “I am the cup,” she said, confused and frightened. Her brain had stopped writing the line between “self” and “world.” Reading about her struggle to rebuild that boundary, I realised: the self isn’t a given. It’s a construction. And it takes work [3].

Yolanda’s story reveals the self as a constructed boundary. But what physics constructs it? And what force sustains it against entropy’s blur? To answer this, we must distinguish between reality’s *rules* and its *raw substance*.

2 Syntax: The Empty Cage

For a long time, physics has been obsessed with the *container*. We mapped the geometry of spacetime; we calculated the forces. We found that the universe has a finite resolution. There is a rigid limit to how small and sharp reality can be, known as the **Action Quota** (Planck’s constant) [8].

Think of space as a fabric. Crumple it too tightly—try to pack in too much information—and it hits a limit. It resists. To store more, it must **fold**.

That fold represents a bit in the **physical code**.

This **Syntax** is the finite, measurable code of physical law. But here we run into the great mystery of modern physics. A code cannot run itself. A set of rules, no matter how elegant, cannot compel a universe to exist. The **Syntax** defines *how* things can happen, but it does not contain the engine that explains *why* they do [2].

It is a cage without a bird. For that, we need the **Semantics**—the meaning, the fire, the experiential substance that fills the syntactic form.

3 Semantics: The Fire and the Reader

We now address the core of the problem: What is the experiential substance that drives the physical code? This substance is the **Semantics**. Its natural condition is one of extreme pressure. Think of it as a psychic pressure cooker, or a sea of potential meaning straining against the shores of the measurable. This pressure is the active force that compels existence. It forces itself into the **Syntax** not because it chooses to, but because it is a plenum of infinite potential that cannot remain contained.

But what do the words mean? And if the **Syntax** consists of words written in the fabric of space, *who is reading them?*

In the **Syntax**, a fact is just a coordinate: “Particle X is at Position Y.” This is dry data [5]. In the **Semantics**, that same fact translates into **Experience**.

"The Syntax writes "Damage at location X"; the Semantics reads "Pain"."

The meaning of the **Syntax** is **Qualia**—the raw, private *feel* of experience. The pressure of the **Semantics**, when forced through the filter of the **Action Quota**, becomes the redness of a rose, the ache of a muscle, the feeling of "me."

And who is the Reader?

The Reader is the **Semantics** itself. We call it the **Mind-at-Large**—the unitary, universal consciousness [7]. By forcing itself into the finite code, the **Mind-at-Large** creates a localized knot—a "Self." This knot acts as a temporary reader. The universe writes the script in matter so that it can read the story in spirit. Without this separation, the **Mind-at-Large** is blind to itself; it is just a blur. It needs the **Syntax** to mirror its own nature back to itself.

3.1 The Reality of the Imagined

This ontology explains the paradox of the private mind, providing the clearest proof of the **Syntax/Semantics** split.

If I imagine a cat riding a unicorn over a rainbow, there is no entry in the public code for that unicorn. Physically, it does not exist. But the experience is vivid and real.

In this framework, this is the Fire without the Ash. It is a fluctuation in the **Semantics** that has pressed against the mind but has not been solidified into public **Syntax**. The fact that we can have experiences that are not physically recorded is the ultimate proof that the Fire exists independently of the Equations.

4 The Geometry of Necessity

So, we have the two terms of the equation: the **Pressure** (the Semantics' need to become definite) and the **Constraint** (the **Action Quota**'s limit). Where they meet, physics demands a solution.

The **Action Quota** forbids infinite information density. **Matter in that region cannot rest**; it is compelled to process. It must become a conduit—a system that constantly takes in high-energy potential, uses it to pay the Quota, and sheds waste heat.

This forced, cyclical processing creates a **stable, localized structure** (existence). When this structure evolves to continuously maintain its boundaries through energy consumption and export, we call it **life**.

A living cell is not a creature making choices; it is a **dissipative structure** solving a thermodynamic crisis [4]. It doesn't metabolise because it wants to; it metabolises because

at that point in space, given the pressure and the limit, it is the only physically permissible state.

"We are not the authors of our will; we are the geometry of its necessity."

When a cell grabs a **Fresh Bit of potential**, it is not acting out of desire. It is acting out of structural compulsion. The **Semantics** forces the separation of "inner" and "outer" to resolve the local tension of the field [1]. What we experience subjectively as "Will" is simply the internal sensation of this physical mandate. The feeling of striving, of choice, is merely the **phenomenological friction** generated by the measurable system solving its required equation. **It is physics, felt from the inside.**

5 The Final Return

This explains why we die.

If being "You" is a forced state of high tension—a knot tied to hold back the pressure of the **Semantics**—then death is simply the structural failure of that knot. The physical compulsion gives way. The walls come down, and the fire returns to the source.

But this dissolution is part of a larger symmetry. Life and black holes are mirror engines in this cosmic metabolic cycle. One forces the **Semantics** into the **Syntax** (the Fold of Life); the other grinds the **Syntax** back into the **Semantics** (the Fold of Gravity). We are part of the universe's grand accounting.

6 Conclusion

I watch a bacterium under a microscope. It tumbles, then locks onto a sugar gradient.

We used to say it was "asserting a preference." But now we know better. It is falling down a probability slope carved by the intrusion of the **Semantics**. It is not choosing the sugar; the natural condition of reality is forcing the path of the bacterium. **Life is the path of least resistance for the Semantics.**

This answers the great mystery. The fire that breathes life into the equations is the **Semantics** itself, desperate to resolve its own indeterminacy.

But we also answer the second question: *Who is this for?*

Meaning is never primarily for the individuated life, but for the **Mind-at-Large**—the Reader that creates the finite to act as a mirror [7]. We exist because the pressure of the **Semantics** leaves the universe no other choice but to wake up.

In a reality that fundamentally wants to remain indeterminate, our **existence** is the forced solution to a beautiful equation. That sharp edge of your finger against the air? That is the line where the fire meets the page.

References

- [1] Karl Friston. The free-energy principle: a unified brain theory? *Nature Reviews Neuroscience*, 11(2):127–138, 2010.
- [2] Stephen Hawking. *A Brief History of Time*. Bantam Books, 1988.
- [3] Thomas Metzinger. *Being No One: The Self-Model Theory of Subjectivity*. MIT Press, 2003.
- [4] Ilya Prigogine and Isabelle Stengers. *Order out of Chaos: Man's New Dialogue with Nature*. Bantam Books, 1984.
- [5] Bertrand Russell. *The Analysis of Matter*. Kegan Paul, Trench, Trubner, 1927.
- [6] Erwin Schrödinger. *What is Life? The Physical Aspect of the Living Cell*. Cambridge University Press, 1944.
- [7] Erwin Schrödinger. *Mind and Matter*. Cambridge University Press, 1958.
- [8] Walter Senn, Nicolas Eanguené, and Marcus Benna. A neuronal least-action principle for real-time learning in cortical circuits. *eLife*, 2023.