

Philosophical Resonances with Consciousness Across Three Worldviews

Supplement to The Ignorant Observer Framework

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Abstract

This supplement explores structural resonances between the Ignorant Observer Framework and the synthesis presented in *Consciousness Across Three Worldviews* by Sarvapriyananda, Agüera y Arcas, and Rovelli.¹ Both works developed independently, yet they converge on remarkably similar insights from different starting points: the IOF from physics and information theory, the essay from Vedānta, cognitive science, and relational quantum mechanics. The physical side of the comparison rests on the framework’s operational layer—finite-rate basis tracking as reference-frame physics within standard quantum mechanics, a classical and calibrated control law rather than a rival to quantum theory—so the resonances do not wait on any pending experiment: they live at the interpretive level and stand on their own terms there. The convergence suggests we may be approaching the same underlying truth from different levels of description. This supplement honors that resonance by analyzing the philosophical alignments without claiming priority for either approach.

How to Read This Document

This document is not independent evidence for the IOF. Its physical anchor is the framework’s operational layer: finite-rate basis tracking as reference-frame physics within standard quantum mechanics. That layer is not a pending conjecture. The control law

$$t_{\text{break}} \propto \frac{1}{h_{\text{KS}} - C_{\text{eff}} \ln 2}$$

is a calibrated, classical statement about observer-relative visibility: when an observer’s effective capacity C_{eff} falls below the information rate h_{KS} of its own reference dynamics, the contrast in its unconditioned records degrades—and is recoverable when the missing reference information is supplied. The law describes how finite observers fare *inside* standard quantum mechanics; it does not predict a deviation from it. The stronger reading—an unrecoverable, capacity-dependent loss beyond quantum mechanics—is raised and excluded in the foundational paper’s analysis (*The Ignorant Observer*, Part III), and nothing in this document depends on it.

¹<https://www.noemamag.com/consciousness-across-three-worldviews/>

The resonances mapped below therefore do not wait on an experiment. They are interpretive: a reading of what finite observation means for the observer's picture of the world, set alongside older traditions that arrived at structurally similar readings by very different routes. Like all interpretations, this layer is unfalsifiable by nature; it is offered plainly as such.

“The World is broken because the Eye is blinking.”

1 Semantic Information and Meaning-Filtered Capacity

The essay distinguishes between:

- Shannon information (statistical differences), and
- semantic information (differences that matter to an organism’s survival, behavior, or identity).

The Biological Observers supplement introduces $C_{\text{eff}} < C$, a relevance-filtered capacity, capturing the same insight: real observers process only semantically salient information.

This appears in both frameworks through:

- **The essay:** Bateson’s “a difference that makes a difference”
- **IOF:** The partition $C = C_{\text{homeostasis}} + C_{\text{internal}} + C_{\text{external}}$, where only $C_{\text{eff}} = C_{\text{external}}$ serves world-modeling

Both recognize that meaning, not mere correlation, defines what enters awareness.

The essay illuminates why this matters philosophically; IOF provides the information-theoretic mechanism.

2 The Umwelt and Observer-Dependent Reality

The essay describes reality as filtered through the organism’s *umwelt*—the perspective-dependent universe of behaviorally relevant information.

IOF captures this through basis uncertainty σ_{θ}^2 :

- Different observers have different basis-drift signatures
- Because their C_{eff} partitions differ
- And their semantic worlds differ

Both frameworks recognize that:

- There is no observer-independent “view from nowhere”
- What appears to each observer depends on its information structure
- The observer’s limitations shape what can be known

The essay explores this through biological examples (tick, bee, human); IOF formalizes it through finite capacity and internal unpredictability.

3 Fluid Self–World Boundaries

The essay emphasizes that the boundary between “self” and “world” is:

- semipermeable,
- dynamic,
- and dependent on coarse-graining.

IOF treats the observer as having finite capacity C , but does not explicitly address boundary fluidity.

Both frameworks recognize that:

- The “self” is not a fixed entity but a perspectival structure
- Information flow defines identity more than substance does
- What counts as “internal” vs “external” depends on the observer’s scale and function

The essay develops this explicitly through nested examples (cell, organism, colony); IOF implies it through the impossibility of complete self-tracking.

This links to Vedānta’s *upādhi* (limiting adjunct)—the empirical boundary that defines the apparent individual while not being fundamental.

4 The Light Metaphor as Semantic Thread

The essay builds a bridge using “light” to mean:

- physical illumination (photons),
- semantic relevance (what matters),
- and self-luminosity of awareness (Vedānta).

IOF provides the information-theoretic grounding for this metaphor:

- “Light” = accessible information (capacity C , effective capacity C_{eff})
- “Darkness” = the deficit caused by finite capacity and basis uncertainty σ_{θ}^2

Both frameworks use illumination as more than analogy:

- **The essay:** Awareness as the universal field within which perspectival structures arise

- **IOF**: Information accessibility as the boundary of what can be known by a finite observer

The metaphor works because both capture the same structural truth: knowing has limits determined by the knower's architecture.

5 Nested Observers and Compounded Ignorance

The essay highlights nested coarse-grainings:

- Immune cells observe threats
- Organisms observe environments
- Colonies observe ecological niches

Each level defines its own umwelt and identity.

The Biological Observers supplement employs the same hierarchical structure:

- Neurons \rightarrow microcircuits \rightarrow columns \rightarrow networks \rightarrow global workspace
- Each level has its own σ_{θ}^2 and C_{eff}
- Convergence must occur at each level before higher levels can integrate

Both frameworks recognize:

- Observers exist at multiple scales
- Self-ignorance compounds across hierarchical levels
- Consciousness emerges from multi-level convergence

The essay illustrates this biologically; IOF quantifies it through layered timescales (68 ms \rightarrow 200–300 ms \rightarrow 350 ms).

6 Homeostasis and Information Preservation

The essay notes:

A living subject is defined by the information it preserves over time.

IOF captures this through capacity partitioning:

- Most of C must maintain homeostasis ($C_{\text{homeostasis}}$)

- Limited bandwidth remains for world-modeling (C_{eff})
- This increases self-ignorance

Both frameworks recognize:

- Identity is informational, not substantial
- Survival requires preserving certain patterns
- This preservation consumes capacity, limiting what else can be known

The essay explores this philosophically; IOF quantifies the capacity trade-off.

7 Convergence with Advaita Vedānta

The deepest resonance is structural, not verbal.

Three perspectives on the same pattern:

IOF (physics):

The observer cannot trace the causal origin of its own measurement basis due to finite capacity and internal chaos.

Advaita (metaphysics):

The empirical self (*jīva*) cannot illuminate its own source; only the Self (*ātman*) is self-luminous.

Three-Worldviews essay (synthesis):

Awareness as the universal field of illumination; individual observers as perspectival structures within it, each with limited access.

Common recognition:

All three recognize:

- The knower cannot fully know itself
- Self-ignorance is structural, not accidental
- Something beyond the empirical observer must be the ground

- The empirical observer-boundary itself is *upādhi* (limiting adjunct)—not fundamental

IOF provides the information-theoretic structure; Vedānta provides the metaphysical insight; the essay bridges them through cognitive science and relational quantum mechanics.

None reduces to the others; each illuminates a different facet of the same truth.

8 Observer-Induced Quantization: Extending the Resonance

The following section is interpretation, not physics. The operational result it leans on—that a finite-rate observer cannot fully track its own evolving measurement basis—is classical reference-frame physics within standard quantum mechanics; it neither adds to nor subtracts from quantum theory’s predictions. What follows is a reading of that result: an account of what finite directional sampling looks like from the inside, set alongside traditions that reached structurally similar conclusions by other routes.

A striking convergence between the Ignorant Observer Framework and the themes explored in *Consciousness Across Three Worldviews* lies in a deeper insight that neither the Vedāntic nor the relational-quantum nor the computational view fully articulates, yet all implicitly gesture toward: the discreteness of experience arises from the structure of the observer, not from any fundamental granularity in the observed.

While quantum theory traditionally assumes that physical quantities possess inherently discrete spectra, and while Vedānta asserts that multiplicity emerges through epistemic limitation (*avidyā*), the IOF offers a reading that links these perspectives. It does not replace quantum discreteness; it interprets the binary, record-level form of measurement outcomes as what finite directional sampling of an underlying quantum state looks like to an embedded observer. A finite-capacity observer cannot fully track its own evolving measurement basis, and the records it can stably form therefore take the shape of discrete classifications—what appear, from the inside, as “quantized outcomes.” What the observer’s finitude generates is specifically the *binary, single-system* record weight—and, by the same finite-record invariance, no more: the multi-outcome spectra and relative phase that make the world recognizably quantum remain hosted by standard quantum mechanics, not produced by the observer.

This leads to a unified philosophical reading:

Quantization is observer-relative: the record-level discreteness is cleanly real *within* the observer’s record-layer—every observer at that access finds it the same way—yet it is reference-frame bookkeeping *relative to* the continuous substrate, not an intrinsic granularity of reality.

Quantization as Coarse-Graining by a Finite Observer

In Vedānta, the apparent world (*nāmarūpa*) is shaped by the limitations of the embodied mind. In the essay, semantic filtering and umwelt selection define which distinctions “make a difference”

for an organism. In IOF, finite capacity C and basis drift driven by internal chaos λ force the observer into discrete classifications.

Across these systems, the same structure emerges:

- **Vedānta**: the mind constructs discrete objects from the undivided field of awareness.
- **Cognitive science**: the organism selects behaviorally relevant distinctions from a continuous environment.
- **IOF**: the observer’s internal ignorance generates discrete outcome sets as the only stable representational strategy.

Thus, discrete measurement outcomes are not properties of the world but stable islands carved out of a continuum by a limited observer embedded in a dynamical flow.

The Absence of Absolute Properties

Both Vedānta and relational quantum mechanics emphasize that no property exists “in itself”:

- For Vedānta, attributes are superimposed by the mind (*adhyāsa*).
- In relational QM, values exist only in inter-system interactions.

The IOF gives this claim an information-theoretic gloss: even if the underlying physical ontology is continuous and deterministic at its core, the observer’s inability to track its own basis means that the description accessible to it—the record-level description—is effectively discretized. The discreteness lives in the records, not in a new physical channel.

This difference is not metaphysical but informational:

What cannot be stably tracked cannot be experienced.

What cannot be experienced collapses into discrete alternatives.

The Observer as the Source of “Quantum Events”

The three-worldviews essay highlights the centrality of semantic information: a difference that makes a difference. IOF makes this operational by quantifying the observer’s maximum tracking rate and demonstrating when this rate is exceeded.

When the basis drifts faster than the observer can follow, standard quantum mechanics still holds—but the observer’s reference frame is unresolved, and the representations it can stably maintain contract to discrete alternatives. On this reading, those discrete representational attractors are what an embedded observer registers as “measurement outcomes.”

This yields a philosophical synthesis:

- **Vedānta**: differentiation appears when awareness interfaces with limiting adjuncts.
- **Cognitive science**: discrete symbols and categories arise from informational bottlenecks.
- **Relational QM**: “events” occur in interactions, not in the system itself.
- **IOF**: a finite observer must discretize; therefore discrete events are inevitable.

In this picture, “quantum jumps” can be *read* as record-level necessities of finite sampling rather than ontological mysteries—a reading the predictions are invariant under.

A Shared Insight: The Observer Limits the World It Can See

The convergence becomes clearest in what all three traditions deny:

No observer has unmediated access to an observer-independent world.

And in what all three affirm:

The structure of experience is shaped—sometimes dictated—by the structure of the observer.

The Vedāntic metaphor of “light” as awareness, the cognitive notion of an *umwelt*, and the relational physics view of mutual information all point to the same insight: the observer filters, limits, and structures reality.

IOF adds an interpretive extension of its own:

Structural Correspondence 8.1. The very discreteness of quantum events is one of those limits. On this reading, the observer does not merely observe quantization—it generates it: the discreteness belongs to the finite observer’s records, not to the world those records are about.

Closing Reflection

What began as separate lines of thought—Vedāntic metaphysics, cognitive science, relational quantum mechanics, and observer-based physics—reveals a shared architecture:

- A continuous underlying substrate—the ontic state, the dynamical world: the deepest *describable*, world-side layer, not to be conflated with the Absolute (Brahman), which is no stratum but the ground in which the whole layered appearance arises.
- A finite-capacity observer embedded within it.
- Self-ignorance resulting from internal chaos and limited bandwidth.
- Discrete, stable, reportable experiences emerging from that ignorance.

Within this unified perspective, discreteness is not a property of the universe but a consequence of being a finite observer in it.

This extension makes explicit the philosophical resonance that the IOF formalism brings to light: on the IOF reading, quantization can be read as a fact about the knower's record-layer rather than an intrinsic fact about the world—while the predictions stand either way.

Thus the circle closes: the physical and the metaphysical point toward the same structural truth.

9 Conclusion: Convergent Paths to the Same Insight

The *Three-Worldviews* essay and the IOF converge on fundamental recognitions:

From the essay:

- Reality is observer-dependent
- Semantic information, not raw data, defines experience
- Self-world boundaries are fluid and perspectival
- Nested observers compound ignorance
- Identity is informational preservation
- Awareness cannot be reduced to its contents

From IOF:

- Finite capacity C and chaos λ produce structural self-ignorance
- Observers cannot trace their own basis evolution
- Semantic filtering ($C_{\text{eff}} < C$) explains biological implementation
- Hierarchical observers produce layered timescales
- The measurement basis is hidden, not the measurement outcome

Both frameworks point to the same underlying truth: the observer is fundamentally unable to escape its own perspectival limits, not due to practical difficulty but due to the structure of knowing itself.

This supplement honors that convergence—not claiming priority for either approach, but recognizing that independent paths, pursued honestly, arrive at the same destination.