

# Measurement from Inside

## How Analytic Idealism Dissolves the Quantum Zeno Problem

**Project:** [Return to Consciousness](#)

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### Abstract

The hardest technical obstacle facing consciousness-collapse interpretations of quantum mechanics — the quantum Zeno effect — is not a problem with the formalism but an artifact of the ontological framework within which consciousness-collapse models are developed. This essay diagnoses the Zeno problem as **framework-dependent**: it arises from the assumption, shared by materialism and property dualism alike, that consciousness is a property physical systems may or may not possess — an assumption that generates an emergence threshold the Zeno effect makes uncrossable. Under analytic idealism, where consciousness is the fundamental substrate and finite minds are dissociated fragments of universal consciousness, the assumption does not hold and the problem dissolves. The essay develops a central identification: the dissociative boundary that constitutes a finite mind IS what the quantum formalism describes as measurement, seen from inside rather than outside — not an additional postulate but a consequence of what dissociation already means. This identification dissolves the Zeno problem, eliminates the need for the technical machinery developed to circumvent it, explains why consciousness-collapse and purely physical collapse models yield identical predictions, and reinterprets the Zeno effect as a structural description of attentional constraint rather than a technical obstacle. The argument is conditional — if analytic idealism, then these consequences follow — and constructive, building in the space cleared by this project’s diagnostic work on causal closure and asymmetric methodological restraint.

**Keywords:** quantum Zeno effect · consciousness-collapse · analytic idealism · dissociation · measurement problem · integrated information theory · continuous spontaneous localization · super-resistance · mind-at-large · intersubjective regularity

### What This Essay Does and Does Not Establish

**This essay establishes:**

- That the quantum Zeno problem identified by Chalmers and McQueen (2022) as a central obstacle for consciousness-collapse models arises from a specific presupposition: that consciousness is a property physical systems may or may not possess
- That under analytic idealism, where consciousness is the fundamental substrate, this presupposition does not hold — and the Zeno problem does not arise
- That the dissociative boundary constituting a finite mind can be understood as the first-person process of which measurement is the third-person formal description — not as an additional postulate but as a consequence of the ontology
- That this identification dissolves multiple problems simultaneously: the Zeno effect, the early-universe problem, the need for approximate super-resistance, and the need for tuned collapse parameters
- That Chalmers and McQueen’s finding of empirical equivalence between consciousness-collapse and purely physical collapse is structurally necessary under idealism, not coincidental
- That idealism achieves the explanatory work of the consciousness-collapse program with fewer primitives and fewer open problems
- That intersubjective agreement on physics follows from shared dissociative origin — all alters encounter the same structural regularities because they are dissociated from the same experiential field

**This essay does NOT establish:**

- That analytic idealism is true — the argument is conditional: *if* idealism, *then* these problems dissolve
- That consciousness causes collapse in the sense Chalmers and McQueen explore — under idealism, “collapse” is a third-person description of a first-person experiential process, not a causal relation between two distinct kinds of entity
- That the granularity problem is solved — why dissociation takes the specific form it does (why these alters, this basis, these observables) remains open; the identification says what measurement IS but does not explain why dissociative boundaries have the particular structure they have
- That Chalmers and McQueen’s framework is wrong — their work is rigorous, technically sophisticated, and valuable as an exploration of what consciousness-collapse models require; the claim is that the framework within which they operate generates problems an alternative framework dissolves
- That the measurement problem is solved — though it may be dissolved, in the sense that it ceases to arise as a problem requiring solution

**The argument is constructive, not diagnostic.** Where *What Physics Actually Closes* removes a false obstacle (the appeal to causal closure), this essay builds in the cleared space — showing what the quantum formalism looks like when read through the ontology analytic idealism provides. The constructive case depends on accepting the diagnostic clearing WPC provides and the ontological framework *Return to Consciousness* develops.

**Role within the project:** This essay is a *structural extension* — downstream of the epistemic gatekeepers and the foundational synthesis. By the project’s [Non-Collapse Principle](#), if this essay’s argument fails, the diagnostic work of WPC, the asymmetry diagnosis of AMR, and the foundational synthesis of RTC remain intact.

## I. The Consciousness-Collapse Research Program

The idea that consciousness plays a role in quantum measurement has a distinguished lineage. Von Neumann (1932) demonstrated that the “cut” between quantum system and measuring apparatus can be pushed arbitrarily far along the measurement chain, terminating only at the observer. Wigner (1961) proposed that consciousness cannot be superposed — that it resists superposition and thereby triggers collapse. The idea was taken seriously by several of the founders of quantum mechanics, as *What Physics Actually Closes* documents.

The consciousness-collapse view fell out of favor — not because new evidence refuted it, but because the cultural trajectory traced throughout this project made consciousness-involvement inadmissible. *WPC* shows that the interpretive alternatives (many-worlds, decoherence-as-solution, hidden variables) each carry comparable or greater ontological costs, yet only the consciousness-involving reading was treated as disqualified by its difficulties.

Chalmers and McQueen (2022) represent the most technically serious attempt to revive this tradition. Their contribution is not merely philosophical advocacy but a concrete research program: combine a precise theory of consciousness (integrated information theory, IIT) with a precise account of collapse dynamics (continuous spontaneous localization, CSL) to yield a consciousness-collapse model with clear mathematical structure, specific predictions, and empirical testability.

### The Architecture of Their Model

Their framework rests on several interlocking components:

**Super-resistance.** Certain properties resist superposition — they tend to collapse systems into eigenstates of the corresponding observable. In standard CSL, mass density is super-resistant: superpositions of mass density are unstable and collapse at a rate proportional to the mass involved. Chalmers and McQueen propose that consciousness (or its physical correlate) is similarly super-resistant: superpositions of conscious states are unstable and tend to collapse.

**Integrated information theory.** IIT provides the precise theory of consciousness their framework requires. It specifies a physical correlate of total conscious states — the Q-shape (qualia shape) — which is a mathematical structure determined by the integrated information architecture of a system. Different conscious experiences correspond to different Q-shapes. Crucially, Q-shape is a physical correlate of *total* states of consciousness, not merely a scalar measure. This matters because a scalar measure like  $\Phi$  (the degree of integrated information) cannot distinguish between qualitatively different conscious states with the same  $\Phi$ -value — a problem Chalmers and McQueen identify and address by moving to Q-shape as the relevant observable.

**Continuous collapse dynamics.** Drawing on Pearle’s CSL model, they propose that superpositions of Q-shape undergo continuous stochastic collapse — a “gambler’s ruin” process in which squared amplitudes for different Q-shape eigenstates fluctuate until one “wins,” with winning probability given by the Born rule. The collapse rate depends on the distance between superposed Q-shapes: more dissimilar conscious states collapse faster.

**Ontological flexibility.** The framework is designed to work under both materialism (consciousness is identical to a complex physical property, namely Q-shape) and property dualism (consciousness is a fundamental property that correlates with Q-shape via psychophysical laws). This flexibility is a deliberate feature — the model does not presuppose a particular solution to the hard problem.

## What They Achieve

The framework is genuinely impressive. It provides:

- A precise criterion for what triggers collapse (superpositions of Q-shape)
- A precise dynamics for how collapse proceeds (Pearle-style continuous localization)
- A distance metric governing collapse rate (extended Earth mover's distance between Q-shapes)
- In-principle empirical testability (quantum computer experiments could detect whether Q-shape superpositions are unstable)
- A causal role for consciousness that is mathematically specified, not merely gestured at

The model places consciousness-collapse interpretations on a technical footing comparable to GRW, Penrose-style gravitational collapse, and standard CSL — a significant achievement given that consciousness-collapse views are routinely dismissed as too vague to constitute genuine physical theories.

## II. The Zeno Problem

The framework's central technical challenge is the quantum Zeno effect.

### The Problem in Brief

The quantum Zeno effect is a well-established phenomenon: the more frequently a quantum observable is measured, the harder it is for the system to evolve into a different eigenstate of that observable. In the limiting case of continuous measurement, the system is frozen in its initial eigenstate — it cannot change at all.

The source is mathematical. For a system to evolve from one eigenstate to another via Schrödinger evolution, it must pass through superpositions of those eigenstates. Eigenstates are orthogonal, so continuous Schrödinger evolution cannot take a system directly from one to another without transiting through intermediate superpositions. If those superpositions are immediately collapsed (as they would be under continuous measurement), the system is overwhelmingly likely to return to its initial eigenstate at each step. The result: the system never leaves its starting state.

### Application to Consciousness

Chalmers and McQueen consider the strongest version of the super-resistance idea: absolute super-resistance, formalized as a superselection rule. On this view, consciousness (or its physical correlate Q-shape) can *never* enter a superposition — superpositions of Q-shape are absolutely forbidden.

This generates a clean and elegant model: whenever Schrödinger evolution would produce a superposition of Q-shape eigenstates, the system instead collapses immediately into a definite Q-shape eigenstate, with probabilities given by the Born rule. The dynamics is equivalent to continuous measurement of Q-shape.

But continuous measurement of Q-shape means the Zeno effect applies: Q-shape can never change. If a system starts in one conscious state, it remains in that state permanently. You could never wake from sleep. You could never shift from experiencing red to experiencing blue. More fundamentally, if the early universe contained no consciousness, consciousness could never

emerge — because the Zeno effect would freeze the system in its initial (unconscious) Q-shape eigenstate.

This is fatal. A model of consciousness that entails consciousness can never change or emerge is not a model of consciousness.

### Chalmers and McQueen’s Solution

Their response is to abandon absolute super-resistance for **approximate super-resistance**. On this view, consciousness can briefly enter superpositions — Q-shape is not a superselection observable but an *approximately* super-resistant one. Superpositions of Q-shape are unstable and tend to collapse, but they can exist transiently.

To make this precise, they adopt Pearle’s continuous spontaneous localization framework. The Schrödinger equation is modified to include a nonlinear stochastic term that drives the system toward Q-shape eigenstates:

$$d\psi_t = \left[ -\frac{i}{\hbar} \hat{H} dt + \sqrt{\lambda} \sum_{\alpha} (\hat{Q}_{\alpha} - \langle \hat{Q}_{\alpha} \rangle_t) dW_{\alpha,t} - \frac{\lambda}{2} \sum_{\alpha} (\hat{Q}_{\alpha} - \langle \hat{Q}_{\alpha} \rangle_t)^2 dt \right] \psi_t$$

The collapse rate  $\lambda$  governs how quickly superpositions resolve. If  $\lambda$  is large, collapse is fast and superpositions are fleeting (fast-collapse model). If  $\lambda$  is small, collapse is slow and large superpositions may persist (slow-collapse model). The rate can be made proportional to the distance between superposed Q-shapes, so that superpositions of very different conscious states collapse quickly while superpositions of similar states linger.

This avoids the Zeno effect: because brief superpositions are permitted, the system can transit through superposition en route from one Q-shape eigenstate to another. Consciousness can change states.

### The Cost

The solution works, but at significant cost:

**Superpositions of consciousness must be accepted.** The approximate model requires that subjects can be in superpositions of conscious states — brief, low-amplitude, and sub-introspective, but real. Chalmers and McQueen acknowledge this is “a significant cost of the view” and devote a full section (their §9, Objection 1) to exploring what superposed states of consciousness might involve. The options are uncomfortable: either there is no subjective experience during superposition (violating the Unity Thesis), or superposed consciousness is a novel phenomenal mode we have no introspective access to.

**Collapse parameters must be tuned.** The rate  $\lambda$  must be set carefully: fast enough that large superpositions of consciousness are rare (preserving the phenomenological datum that we experience definite conscious states), but slow enough that the Zeno effect does not prevent state transitions. The parameters are not derived from any deeper principle; they are chosen to fit.

**The model is complex.** What began as a simple, elegant idea — consciousness resists superposition and triggers collapse — has become a multi-layered construction: IIT provides Q-shape, which defines collapse operators, which are fed into a modified Schrödinger equation

with Pearle-style stochastic dynamics, with parameters tuned to thread the needle between Zeno freezing and experiential definiteness. The simplicity of Wigner’s original insight has been lost.

**The early-universe problem persists.** Even with approximate super-resistance, consciousness must emerge from an initially unconscious state. On the approximate model, this is possible (low-probability collapse events in the early universe can eventually produce consciousness), but it requires the right initial conditions and raises Loewer’s (2002) “collapse too early” problem: if collapse is triggered by any superposition of consciousness, including the null state, then the first collapses in the early universe will collapse *onto* the null state — reinforcing unconsciousness rather than enabling consciousness to emerge.

**Empirical equivalence undermines the motivation.** Most significantly, Chalmers and McQueen acknowledge that a purely physical version of their model — in which the physical correlates of consciousness (Q-shape states), rather than consciousness itself, trigger collapse — produces identical physical outcomes. There is “at least a possible world (we might think of it as a quantum zombie world) where collapse works this way. In that world, the physical wave function will evolve just as in our world.” The consciousness-collapse interpretation and its purely physical twin are empirically indistinguishable.

This is an honest and important finding. But it raises the question: if the entire technical apparatus — IIT, Q-shape operators, Pearle dynamics, parameter tuning — yields predictions identical to a version that does not invoke consciousness at all, what has been gained?

### III. Why the Zeno Problem Is Framework-Dependent

The Zeno problem is real, technically precise, and genuinely fatal for simple consciousness-collapse models. But it arises from a specific presupposition that Chalmers and McQueen do not examine — because it is shared by both the materialist and dualist versions of their framework.

#### The Hidden Presupposition

Both versions assume that consciousness is a **property that physical systems may or may not possess**:

- On the materialist version, consciousness is identical to a complex physical property (Q-shape). Systems with the right physical organization have consciousness; systems without it do not.
- On the dualist version, consciousness is a fundamental property that correlates with physical states via psychophysical laws. Systems whose physical correlates satisfy certain conditions ( $\Phi$  above a threshold, appropriate Q-shape) are conscious; others are not.

In both cases, consciousness **emerges at some threshold**. There is a transition from “no consciousness” to “consciousness” — whether this is understood as a physical system crossing a complexity threshold or as psychophysical laws coming into play when the right physical conditions obtain.

This presupposition generates the Zeno problem. If consciousness emerges at a threshold, then:

1. The early universe is unconscious (below threshold)
2. Schrödinger evolution must eventually produce systems at or above the threshold
3. But reaching the threshold requires transiting through superpositions of sub-threshold and super-threshold Q-shape states

4. If Q-shape is super-resistant, these superpositions are suppressed → the system cannot cross the threshold → consciousness never emerges

The Zeno problem is a problem about **emergence** — about how consciousness transitions from absent to present. It presupposes that this transition occurs.

### **The Presupposition Under Analytic Idealism**

Analytic idealism rejects the presupposition. Consciousness is not a property that physical systems acquire at a threshold. Consciousness is the **fundamental substrate** — the ontological primitive from which everything else is constituted. What we call “physical systems” are the extrinsic appearance of experiential processes — the way consciousness looks when observed from outside a dissociative boundary rather than experienced from inside.

Under this ontology:

- Consciousness was never absent. There is no “early universe without consciousness.” The early universe is a state of universal consciousness (mind-at-large) prior to dissociation into finite minds — not an unconscious physical system awaiting the emergence of consciousness.
- There is no threshold to cross. Finite minds are not systems that acquired consciousness by reaching sufficient complexity. They are dissociated fragments of a consciousness that was always already present.
- The “first emergence” question does not arise. Consciousness does not emerge from non-consciousness. It dissociates — partitions itself into experiential perspectives with limited access to the whole.

**The Zeno problem dissolves.** Not because a technical solution has been found within the consciousness-collapse framework, but because the ontological revision removes the presupposition that generates the problem. There is no transition from “unconscious” to “conscious” that the Zeno effect could freeze. There is only consciousness, always present, dissociating into finite perspectives.

### **This Is Not an Evasion**

One might object that dissolving the problem by changing the ontology is a philosophical sleight of hand — avoiding the technical challenge rather than meeting it. But consider what the technical challenge actually requires:

Chalmers and McQueen’s framework needs: 1. A precise theory of consciousness (IIT) 2. A super-resistance principle (Q-shape resists superposition) 3. A collapse dynamics (Pearle-style CSL) 4. Parameter tuning (to avoid Zeno while preserving definiteness) 5. Acceptance of superpositions of consciousness 6. A solution to the early-universe problem

All of this machinery is needed to make consciousness-collapse work within a framework that treats consciousness as emergent. Under idealism, items 2–6 are unnecessary. Item 1 may still be valuable (a precise account of the structure of conscious states is desirable regardless of ontology), but it is no longer load-bearing for the collapse dynamics — because the dynamics is not what needs explaining. What needs explaining, under idealism, is the structure of dissociation — and that is a different question with different formal requirements.

The machinery is the cost of the wrong starting point. The Zeno problem is a symptom, not a fundamental obstacle.

## IV. Dissociation as Measurement

If the Zeno problem dissolves under idealism, the question becomes: what does the quantum formalism describe, when read through the idealist ontology? This section develops the central claim: that the dissociative boundary constituting a finite mind **is** what the formalism calls measurement, understood from inside rather than from outside.

### What Dissociation Does

Under analytic idealism (Kastrup 2019), finite minds are dissociated alters of universal consciousness. The dissociative boundary:

- **Constrains experiential scope.** The alter can experience only a subset of the mind-at-large's experiential content. The boundary defines what is accessible and what is excluded.
- **Creates local definiteness.** Within the alter's scope, experience is definite — the alter has specific, determinate conscious states. This definiteness is not produced by an external mechanism; it is constitutive of what dissociation is. To be a finite mind *is* to have locally definite experience within a bounded scope.
- **Is persistent but not absolute.** The boundary is maintained continuously (the alter remains a distinct experiential perspective) but is not impervious (it can thin under certain conditions — psychedelics, meditation, trauma, near-death states — as documented in [Consciousness Structure](#) and [Phenomenology of Awakening](#)).

### What Measurement Does

In the quantum formalism, measurement:

- **Constrains possible states.** A measurement reduces the system's state to an eigenstate of the measured observable — constraining which outcomes can manifest.
- **Creates local definiteness.** Prior to measurement, the system may be in a superposition (indefinite with respect to the measured observable). After measurement, it is in a definite eigenstate. The measurement process is what produces definiteness.
- **Is characterized by a basis.** The measurement operator defines which observable is being measured — which question is being asked. Different operators correspond to different observables and yield different sets of possible definite outcomes.

### The Structural Correspondence

The parallel is not metaphorical. Dissociation and measurement are performing the same structural function — **producing local definiteness from a broader field of possibilities** — described from different perspectives:

Dissociation (first-person)	Measurement (third-person formalism)
The mind-at-large's experience constitutes the full experiential field	The quantum state of the universe describes the full state space

Dissociation (first-person)	Measurement (third-person formalism)
The dissociative boundary constrains what can be experienced	The measurement operator constrains which outcomes can manifest
The alter has definite experience within bounded scope	The measurement yields a definite eigenvalue
The boundary is maintained continuously	Continuous measurement constrains the system continuously
The boundary defines <i>which aspects</i> of experience are accessible	The measurement operator defines <i>which observable</i> is being measured

The claim is that these are not two processes that happen to resemble each other. They are **one process described at two levels**: the dissociative boundary is the first-person reality of which measurement is the third-person mathematical description.

### Why This Is Not an Additional Postulate

Under analytic idealism, the already-accepted primitives are:

1. Consciousness exists and is fundamental
2. It has the capacity to dissociate into finite minds
3. Finite minds have locally definite experience within bounded scope

Claim (3) is not an additional postulate — it is constitutive of what a finite mind *is*. To be a dissociated alter is to have locally constrained, definite experience. The dissociation-as-measurement claim simply notes that this is the same structure the quantum formalism describes as measurement. The identification follows from the ontology; it does not extend it.

Compare with *Where Explanation Stops*: idealism’s acknowledged brute facts are the existence of consciousness and its capacity to dissociate. The *character* of dissociation — that it produces local definiteness — is part of what dissociation means. Asking why dissociative boundaries constrain experiential content is like asking why boundaries separate inside from outside: the constraint is constitutive of the boundary, not an additional feature requiring separate explanation.

Under the dualist/physicalist frameworks Chalmers and McQueen employ, measurement requires extensive additional machinery: a precise theory of consciousness to identify the measurement trigger, a super-resistance principle to explain why consciousness resists superposition, a collapse dynamics to specify how collapse proceeds, and parameter tuning to avoid the Zeno effect. Under idealism, measurement *is* dissociation. The machinery is unnecessary because the primitive already does the work.

### What the Mind-at-Large’s “Experience” Amounts To

A natural question: if the mind-at-large’s experience constitutes the full experiential field, and its experience is always definite (since it is always conscious), why is there a measurement problem at all?

The answer requires distinguishing between the mind-at-large’s experience and the alter’s experience. The mind-at-large’s experience is **unconstrained** — it encompasses the full field of

experiential possibilities without dissociative narrowing. It is not that the mind-at-large experiences “everything at once” in the way a superposition is “all outcomes at once” — that would be projecting the formalism’s categories back onto the ontology. Rather, the mind-at-large’s experience has a character that the formalism can only approximate as “superposition” because the formalism was developed within a framework that treats individual measurement outcomes as primitive.

The definite, determinate experience we know as conscious subjects — seeing red, hearing a tone, feeling pain — arises at the level of the dissociated alter. It is the dissociative boundary that introduces the constraint, the narrowing, the definiteness-within-a-scope that the formalism describes as measurement. The “problem of definite outcomes” is a problem about how the broader experiential field becomes locally constrained — and dissociation is the answer analytic idealism already provides.

The measurement problem, under this reading, does not need to be solved. It needs to be recognized as a question about dissociation asked in a vocabulary that was developed without recognizing what it was describing.

## V. Attention, Constraint, and the Zeno Reinterpretation

If dissociation is measurement seen from inside, then the quantum Zeno effect — freezing under continuous measurement — acquires a new interpretation.

### The Zeno Effect as Attentional Constraint

Under the dissociation-as-measurement identification, continuous measurement by the alter corresponds to the alter’s **ongoing experiential engagement** with some aspect of its environment. The dissociative boundary is always active — the alter is always in a state of constrained, definite experience. This continuous constraint is the structural equivalent of continuous measurement.

Now consider what happens when the alter **focuses attention** on a specific observable. Attention, phenomenologically, is a further narrowing of experiential scope within the already-narrowed dissociative boundary. It selects one aspect of the experiential field for enhanced engagement while others recede. This corresponds to **increasing the rate of measurement** for the attended observable — measuring it more frequently, more intensely, with tighter constraint.

The Zeno effect follows: the more intensely the alter attends to a system, the more tightly constrained the system’s state becomes within the attended basis, and the harder it is for the system to evolve away from its current eigenstate. Focused attention *stabilizes* the observed system.

This is not a counterintuitive technical artifact. It is a **description of what attention does**, translated into the formalism’s vocabulary. Attention stabilizes. It holds. It constrains. It prevents fluctuation. This is phenomenologically obvious to anyone who has practiced sustained concentration — the meditative traditions documented in *Reflexive Awareness* and *Phenomenology of Awakening* describe exactly this: sustained attention stabilizes the experiential field, while relaxed attention allows it to become more fluid.

## The Hierarchy of Constraint

The identification suggests a natural hierarchy:

**The mind-at-large** provides the background experiential field. Its experience is unconstrained relative to any particular observable — not indefinite, but not narrowed by dissociative boundaries. From the formalism’s perspective, this corresponds to the quantum state of the universe evolving unitarily. The mind-at-large does not “measure” in the sense of constraining outcomes to specific eigenstates — it is the field within which measurement (dissociation) creates local definiteness.

**The dissociative boundary** introduces persistent local constraint. The alter has definite experience within its scope — specific conscious states, not vague potentialities. This corresponds to the ongoing measurement that produces the definite, classical world the alter perceives. The classical appearance of the macroscopic world is the content of the alter’s dissociatively constrained experience.

**Focused attention** introduces additional local constraint within the alter’s scope. It selects one observable for enhanced engagement, stabilizing the attended system’s state more tightly than the background dissociative constraint. This corresponds to increased measurement frequency for the attended observable — and the Zeno-like stabilization that follows.

This hierarchy explains an empirical observation that the measurement problem makes puzzling: measurement devices seem to produce definite outcomes whether or not a human observes them. Under idealism, this is not mysterious. The mind-at-large is not absent from the measurement device — the device IS part of the mind-at-large’s experiential content. The device has definite states because it exists within the experiential field, not because a human has observed it. The human alter’s observation adds a local constraint on top of what was already definite from the mind-at-large’s perspective — and from the perspective of whatever dissociative processes may be operative at the device’s level of complexity.

## What This Means for Contemplative Phenomenology

The connection to contemplative traditions is structural, not merely metaphorical. Contemplative practices involve systematic manipulation of the attentional process — and the phenomenological reports are strikingly consistent with what the identification predicts:

**Concentrative meditation** (samatha, one-pointed focus) involves sustained attention on a single object. Practitioners report that the attended object becomes more stable, more vivid, more definite — while the surrounding experiential field becomes less determinate. Under the identification: increasing measurement frequency for one observable, producing Zeno-like stabilization of the attended state while reducing constraint on unattended aspects of the field.

**Open awareness practices** (vipassana, shikantaza, dzogchen) involve relaxing attentional fixation — attending to the field as a whole rather than to specific objects. Practitioners report increased fluidity, less fixation, experience becoming more process-like and less object-like. Under the identification: reducing measurement frequency for specific observables, allowing the experiential field to evolve more freely — weakening the Zeno-like constraint that focused attention imposes.

**Awakening experiences** documented in *Phenomenology of Awakening* involve progressive dissolution of the dissociative boundary itself. The reports converge: boundary dissolution

produces experiences of expanded scope, luminosity, intimacy with the experiential field, and recognition of something that was always present but excluded by the boundary. Under the identification: the dissociative boundary *is* the measurement operator, and its dissolution corresponds to a reduction in the ongoing measurement that produces the alter’s locally definite world. What is disclosed when measurement (dissociation) relaxes is the broader experiential field — the mind-at-large’s unconstrained experience, or an intimation of it.

This convergence across contemplative traditions — the phenomenological equivalence of attentional constraint with experiential fixation, and of boundary dissolution with experiential expansion — functions as independent evidence. The dissociation-as-measurement identification predicts that manipulating the dissociative boundary (through contemplative practice, psychedelics, or other means) should produce phenomenology consistent with changes in measurement regime. The contemplative literature confirms this prediction independently.

## VI. The Cost Comparison

The argument from parsimony is not decisive on its own — simpler theories can be wrong. But when two frameworks address the same phenomena, the one requiring fewer primitives and generating fewer open problems holds a structural advantage. This section makes the comparison explicit.

### Chalmers and McQueen’s Framework

To achieve a viable consciousness-collapse model, they require:

Component	Status	Open Problems
Integrated information theory (IIT)	A specific theory of consciousness, chosen for mathematical precision	Whether IIT applies to real physical systems; whether Q-shape can be defined for quantum systems; the exclusion problem
Super-resistance principle	An additional postulate: consciousness resists superposition	Why consciousness specifically resists superposition; why this property rather than others
Approximate (not absolute) resistance	A weakening of the original principle, forced by the Zeno problem	Superpositions of consciousness must be accepted; what these involve phenomenologically is unclear
Pearle-style CSL dynamics	A modification of the Schrödinger equation with stochastic collapse terms	Collapse parameters ( $\lambda$ ) are not derived from deeper principles; possible energy conservation violations

Component	Status	Open Problems
Q-shape collapse operators	Mathematical objects defined over the space of quasi-classical Q-shapes	Whether the operators can be constructed for realistic systems; the set-selection problem for quasi-classical states
Parameter tuning	Rate $\lambda$ must be set to avoid both Zeno freezing and experiential indefiniteness	No principled derivation of parameter values
Early-universe account	Consciousness must emerge from an initially unconscious state via low-probability collapses	Loewer's "collapse too early" problem; fine-tuning of initial conditions

**Total primitive count:** Consciousness + IIT + super-resistance + CSL dynamics + parameter values + the assumption that consciousness emerges from non-consciousness.

**Major open problems:** The Zeno effect (addressed but not eliminated — parameter tuning is required), superpositions of consciousness (accepted but not understood), the early-universe problem (addressed but not resolved), empirical equivalence with the purely physical version (acknowledged but not explained).

### The Idealist Framework

Under analytic idealism with the dissociation-as-measurement identification:

Component	Status	Open Problems
Consciousness as fundamental	The ontological primitive	Why consciousness exists at all (shared with all ontologies — physicalism also cannot explain why anything exists)
Dissociation	The capacity to partition into finite minds	The granularity problem: why these particular alters, this basis, these observables
Dissociation-as-measurement	A consequence of the ontology, not an additional postulate	Consistency check (does dissociation have the structural properties measurement requires?) is developed but not exhaustive

**Total primitive count:** Consciousness + dissociation. The measurement identification follows from these; it is not additional.

**What is avoided:** - The Zeno problem does not arise (no emergence threshold) - No super-resistance principle needed (dissociation already provides constraint) - No Pearle-style dynamics needed (the dissociative structure is the collapse dynamics, seen from inside) - No parameter

tuning needed (the “rate” of constraint is determined by the dissociative structure itself) - No superpositions of consciousness needed (the mind-at-large is always conscious; alters are always in definite states within their scope) - No early-universe problem (consciousness was never absent) - Empirical equivalence is structurally necessary, not puzzling (see next section)

**Remaining open problems:** The granularity problem (why these alters, this basis, these observables), and the general question of how the dissociative structure generates the specific regularities we observe (the laws of physics as experienced by alters).

### **The Parsimony Assessment**

The comparison is not close. Chalmers and McQueen’s framework requires six or more components to achieve a result that is empirically equivalent to a version that doesn’t invoke consciousness at all. The idealist framework requires two primitives and generates the measurement correspondence as a structural consequence.

This does not mean idealism is correct. Parsimony is one theoretical virtue among several. But the structural economy is significant — especially because the more complex framework was driven to its complexity specifically by the Zeno problem, a problem the simpler framework does not face.

The honest question for the consciousness-collapse research program: if the most technically sophisticated version of your model yields predictions identical to a consciousness-free alternative, and a different ontological framework achieves the same explanatory work with fewer primitives and without the Zeno problem, what is the technical apparatus accomplishing?

## **VII. Empirical Equivalence as Structural Necessity**

Chalmers and McQueen’s finding of empirical equivalence — that a purely physical version of their model produces identical predictions — is presented as an honest acknowledgment of a limitation. Under idealism, it becomes an expected structural feature.

### **The Finding**

They construct a “quantum zombie world” in which collapse is triggered by physical correlates of consciousness (Q-shape states) rather than by consciousness itself. In that world, the physical wavefunction evolves identically to our world. The consciousness-collapse interpretation and its purely physical twin are experimentally indistinguishable.

This leads to a natural objection: “Someone might object that we do not give a genuine causal role to nonphysical consciousness at all. Instead, all the causal work is done by the physical correlates of consciousness.” Chalmers and McQueen respond by distinguishing the dualist interpretation (consciousness directly causes collapse) from the physicalist interpretation (physical correlates do the causal work), arguing that on the dualist view, consciousness is genuinely causally responsible.

### **Why Idealism Predicts This**

Under analytic idealism, the empirical equivalence is not a limitation to be explained away — it is a **necessary consequence** of the ontology.

What physicalists call “the physical correlates of consciousness” and what idealists call “the extrinsic appearance of experiential processes” are the same thing. They are not two distinct entities that happen to correlate; they are one reality described at two levels. The physical is what experience looks like from outside a dissociative boundary; experience is what the physical is from inside.

If this is correct, then *of course* a model attributing collapse to consciousness and a model attributing collapse to its physical correlates make identical predictions. They are describing the same process in different vocabularies. The “quantum zombie world” — a world physically identical to ours but lacking consciousness — is not a genuine metaphysical possibility under idealism; it is a misdescription generated by treating the physical and the experiential as separable when they are aspects of the same reality.

### **The Deeper Point**

This structural necessity has a further implication. The entire consciousness-collapse research program — the effort to specify precisely how consciousness triggers collapse, to distinguish consciousness-caused collapse from physically-caused collapse, to identify empirical signatures that would favor one over the other — is predicated on the assumption that consciousness and its physical correlates are *distinct enough* that their causal contributions can be separated. Under idealism, they cannot be separated because they are not distinct. The program is trying to draw a line within a unity.

This does not make the program worthless. The technical work — the Q-shape formalism, the collapse dynamics, the analysis of the Zeno problem — is valuable regardless of ontological framework. It clarifies what any consciousness-involving account of quantum mechanics requires and what obstacles it faces. But the finding that the two versions of the model are empirically equivalent is, under idealism, not a problem to be overcome but a confirmation that the formalism is tracking a reality that does not admit the separation the dualist/physicalist framework presupposes.

## **VIII. Intersubjective Regularity and the Experiential Field**

The dissociation-as-measurement identification has an implication that extends beyond the consciousness-collapse debate: it provides a specific account of why different observers agree on physics.

### **The Standard Objection**

A persistent objection to idealism asks: if reality is experiential rather than mind-independent, why do different minds agree on what they observe? Why is physics intersubjectively valid? Under physicalism, the answer is straightforward — all observers access the same mind-independent physical reality. If the physical world is “really” just experience, what grounds the shared structure?

### **The Dissociative Answer**

Under the dissociation-as-measurement identification, the answer is precise:

1. All finite minds are dissociated from **the same mind-at-large** — the same universal experiential field

2. The structural regularities of that field — the patterns, constraints, and dynamics of the mind-at-large’s experience — are what the alters encounter as the laws of physics
3. Different alters agree on physics not because they independently discover a mind-independent reality, but because they share a **common experiential source** whose structure is invariant across dissociative perspectives

The laws of physics, on this reading, are the **structural regularities of the mind-at-large’s experiential dynamics**. Conservation laws, Born rule statistics, causal structure — these are not features of a mind-independent substrate that consciousness observes from outside. They are features of the experiential field itself, encountered by every alter because every alter is dissociated from the same field.

### Why the Classical World Appears Classical

The “quantum-to-classical transition” — one of the deepest open problems in the foundations of physics — maps onto the transition from the mind-at-large’s unconstrained experience to the alter’s dissociatively constrained experience. The alter’s world appears classical — definite, stable, law-governed, composed of persistent objects — because the dissociative boundary constrains experience to definite states within a limited scope. Classicality is not a feature of reality at the deepest level; it is a feature of *dissociated* reality — the world as experienced through a boundary that selects for definiteness.

Decoherence, on this reading, captures part of the story: it describes how environmental entanglement suppresses interference and makes the world *appear* classical. But decoherence alone does not explain definite outcomes — it produces a diagonal density matrix (a probabilistic mixture), not a specific result. Dissociation completes the account: the dissociative boundary produces the local definiteness that decoherence alone cannot deliver. Decoherence describes the process by which the mind-at-large’s experiential dynamics generates the *conditions* for classical appearance; dissociation is the process by which those conditions become the alter’s *actual definite experience*.

### Why Mathematics Describes the World

The structural regularity of the physical world — the fact that mathematics describes it with extraordinary precision — becomes less mysterious under this reading. Mathematics is the language of structure. If the mind-at-large’s experiential dynamics has structure (and it does — it is not chaotic, not arbitrary, but patterned in ways that every alter encounters as lawful), then mathematical description of that structure is not “unreasonably effective” (Wigner 1960) but expected. Mathematics works because it captures the patterns inherent in the experiential field, and those patterns are invariant across dissociative perspectives because they belong to the field itself, not to any particular alter’s interpretation of it.

The quantum formalism, specifically, describes the experiential field’s dynamics at a level prior to dissociative constraint — which is why quantum mechanics appears strange, non-classical, and counterintuitive. It describes reality as it is *before* the dissociative boundary introduces classicality. The alter’s everyday experience is post-dissociative: classical, definite, object-like. The formalism describes pre-dissociative dynamics: superposed, entangled, probabilistic. The apparent gap between quantum mechanics and ordinary experience is not a gap between a mind-independent micro-reality and a macroscopic observer — it is the gap between the mind-

at-large's unconstrained experience and the alter's dissociatively constrained experience, described in the only vocabulary physics had available.

## IX. What This Does Not Establish

This essay has argued that the Zeno problem is framework-dependent, that it dissolves under analytic idealism, that dissociation is measurement seen from inside, and that the idealist framework achieves the explanatory work of the consciousness-collapse program with fewer primitives. It has not established several things that intellectual honesty requires naming.

**It has not proven analytic idealism.** The argument is conditional throughout: *if* consciousness is fundamental and *if* finite minds are dissociated fragments of universal consciousness, *then* the Zeno problem dissolves and the formalism simplifies. The antecedent is argued elsewhere in this project (*Return to Consciousness*, supported by the epistemic gatekeepers). This essay extends the framework; it does not establish it.

**It has not solved the granularity problem.** The dissociation-as-measurement identification says that what the quantum formalism describes as measurement IS dissociation, seen from outside rather than inside. The formalism for measurement already exists — it is quantum mechanics. The identification does not need to re-derive the formalism from the ontology any more than identifying water with  $H_2O$  needs to re-derive chemistry from the identification. What remains genuinely open is why dissociation takes the specific form it does: why do these particular dissociative boundaries form? Why this basis rather than another? Why do human alters experience position-like observables rather than some other set? The structure of the dissociative boundaries determines the structure of measurement as experienced by the alter, and that structure is what's unexplained. This is the deepest open question under the idealist framework, and this essay does not resolve it.

**It has not exhaustively verified the identification.** There is a legitimate consistency question distinct from the granularity problem: does dissociation — as characterized by Kastrop (scope constraint, local definiteness, persistent but permeable boundary) — actually have the structural properties that measurement requires in the formalism (basis selection, Born-rule statistics, the specific form of state reduction)? This is not a demand to derive the formalism from the ontology — that would import a physicalist direction of explanation. It is a check on whether the identification holds in detail or whether the correspondence is only superficial. This consistency check has been developed structurally in Section IV but not exhaustively, and further analysis could reveal tensions. The identification operates at a level prior to the choice of formalism — wherever unitary evolution fails to produce definite outcomes, idealism identifies the process that introduces local definiteness (measurement) with the process that constitutes finite minds (dissociation). This structural gap between unitary evolution and definite outcomes is the same in non-relativistic quantum mechanics and in quantum field theory; the formalism changes, the gap does not. QFT introduces features of independent interest — Haag's theorem (unitarily inequivalent representations) might prove congenial to the identification, and the algebraic structure of local observables (Type III von Neumann algebras) could constrain or enrich the dissociative account of subsystem decomposition — but these are opportunities for future work, not obstacles to the identification's structural validity.

**It has not solved the measurement problem.** The essay argues that the measurement problem *dissolves* under idealism — it ceases to arise as a problem requiring solution, because the question “how does the physical world produce definite outcomes?” is replaced by “how does

the experiential field dissociate into locally definite perspectives?” But dissolution is not solution. A critic might argue that the problem has been relocated rather than eliminated: instead of explaining how matter produces definite outcomes, idealism must explain how consciousness produces definite dissociative structures. This is a genuine burden, though this essay argues it is a lighter one — an intra-category question (behavior of a known primitive) rather than a cross-category one (generation of experience from non-experience).

**It has not shown that consciousness-collapse is the correct interpretation.** The essay is consistent with *What Physics Actually Closes*, which maintains diagnostic neutrality on whether consciousness plays a causal role in outcome-selection. The claim here is narrower: *if* one pursues the consciousness-collapse program, idealism provides a simpler framework than dualism or physicalism. But the essay does not argue that the consciousness-collapse program is the right approach to quantum mechanics — only that its hardest problems are artifacts of the ontological framework rather than of the formalism.

**It has not engaged with all relevant interpretive alternatives.** The essay focuses on Chalmers and McQueen’s framework because it is the most technically developed consciousness-collapse model. Other approaches — Stapp’s quantum mind model, Penrose-Hameroff’s Orch OR, various quantum cognition frameworks — face their own versions of the measurement problem and might respond differently to the idealist reframing. A complete treatment would engage these alternatives individually.

### How This Essay Could Fail

Following the project’s commitment to naming its own failure conditions:

- **If the dissociation-as-measurement identification fails the consistency check** — if closer analysis reveals that dissociation (as characterized under analytic idealism) lacks structural properties that measurement requires in the formalism, the identification would be superficial rather than substantive. The question is not whether the formalism can be re-derived from the ontology (that imports a physicalist direction of explanation) but whether the identification holds in detail.
- **If Chalmers and McQueen’s framework can be simplified** — if future work resolves the Zeno problem, eliminates the need for parameter tuning, and explains the empirical equivalence within the dualist/physicalist frame, the parsimony advantage disappears.
- **If the granularity problem proves intractable under idealism** — if no account of why consciousness dissociates into *these* particular alters with *these* experiential scopes can be given, the framework’s open problem may prove as severe as the problems it dissolves.
- **If the contemplative phenomenology proves unreliable** — if the convergent reports of attentional stabilization and boundary dissolution turn out to reflect cultural expectation rather than structural features of consciousness, the phenomenological support for the identification weakens.

## X. Connection to the Project

This essay connects to the project’s broader architecture at several points:

**What Physics Actually Closes (wpc):** WPC establishes that the quantum formalism does not deliver causal closure, that the outcome-selection degree of freedom is real and open, and that the interpretive history exhibits asymmetric restraint against consciousness-involving readings.

This essay builds constructively in the space WPC clears. WPC removes the false obstacle; this essay shows what the formalism looks like when read through the idealist ontology. The relationship is diagnostic → constructive: WPC does not require this essay's conclusions, but this essay requires WPC's diagnostic work.

**Where Explanation Stops (wes):** WES maps where each framework places its brute facts. This essay extends the analysis: under the dualist/physicalist framework, consciousness-collapse requires multiple additional primitives (super-resistance, collapse dynamics, parameter values). Under idealism, the measurement identification follows from the existing primitives (consciousness and dissociation) without additional postulates. The cost comparison developed in Section VI operationalizes WES's framework for the specific case of quantum measurement.

**Return to Consciousness (rtc):** RTC develops the idealist ontology — the mind-at-large, dissociation, the constraint model of finite minds. This essay applies that ontology to the specific technical challenge of quantum measurement, showing that the framework RTC develops has consequences beyond philosophy of mind: it simplifies the most technically demanding problem in the foundations of physics.

**Consciousness Structure (cst):** CST's two-dimensional model (boundary permeability × integrative coherence) describes how the dissociative boundary can thin or thicken. Under the dissociation-as-measurement identification, changes in boundary permeability correspond to changes in measurement regime — increased permeability means reduced constraint, producing the “more fluid, less object-like” phenomenology CST predicts for high-permeability states. The clinical observations CST catalogs (psychotic fragmentation under high permeability without coherence, integrated insight under high permeability with coherence) acquire a formal dimension: the measurement regime is changing, and the experiential consequences depend on whether the system maintains integrative coherence during the transition.

**Phenomenology of Awakening (poa):** POA documents the progressive dissolution of the dissociative boundary in awakening — the terror, the death-like quality, the irreversibility, and the positive phenomenology of what is disclosed. Under the dissociation-as-measurement identification, this is the dissolution of the measurement operator itself — the progressive relaxation of the constraint that produces the alter's locally definite world. The terror is structurally accurate: the alter's identity *is* the dissociative boundary, and its dissolution is genuinely a kind of death. What is disclosed — luminosity, fullness, intimacy — is the mind-at-large's unconstrained experiential field, or an intimation of it. The convergent phenomenology across traditions functions as independent evidence for the identification: if dissociation is measurement, then dissolving the boundary should produce phenomenology consistent with reduced measurement constraint — and it does.

**One Structure (ost):** OST identifies “non-arbitrary structure” as a constraint that recurs wherever thought remains stable under pressure. Under the dissociation-as-measurement identification, this non-arbitrary structure is the mind-at-large's experiential regularity — the structural patterns in the experiential field that every alter encounters as the laws of physics. The intersubjective regularity Section VIII develops is a specific instance of what OST diagnoses across traditions: that reality exhibits discoverable, non-arbitrary structure. If dissociation is measurement, then the structure traditions discover through contemplative inquiry and the structure physics discovers through mathematical formalization are descriptions of the same experiential field at different levels of dissociative constraint.

**The Generativity Question (tgq):** TGQ argues that the correct criterion for evaluating on-

tologies is whether they expand or contract the space of conceivable scientific theories. This essay provides a concrete example: idealism expands the interpretive space for quantum mechanics by dissolving the Zeno problem and simplifying the consciousness-collapse program — directions that the dualist/physicalist framework forecloses by generating problems it then must spend resources solving.

## Conclusion

The quantum Zeno effect is the most technically precise objection to consciousness-collapse interpretations of quantum mechanics. Chalmers and McQueen's response — approximate super-resistance with continuous collapse dynamics — is rigorous, creative, and honest about its costs. It demonstrates that consciousness-collapse models can be developed to the level of mathematical precision that characterizes serious interpretive alternatives.

But the costs are high: superpositions of consciousness, parameter tuning, the early-universe problem, and — most significantly — empirical equivalence with a version of the model that does not invoke consciousness at all. These costs are not intrinsic to the consciousness-collapse idea. They are generated by the framework within which Chalmers and McQueen develop it — a framework that treats consciousness as a property that physical systems may or may not possess, and therefore faces the question of how consciousness first emerges from non-consciousness.

Under analytic idealism, consciousness was never absent. It does not emerge; it dissociates. The Zeno problem — which is fundamentally a problem about emergence — does not arise. The dissociative boundary that constitutes a finite mind performs the structural function the formalism describes as measurement: it produces local definiteness from a broader experiential field. This is not an additional postulate but a consequence of what dissociation already means. The Zeno effect, under this reading, becomes a description of what focused attention does — constraining the experiential field within the alter's scope — rather than a technical obstacle threatening to make consciousness-collapse models unworkable.

The result is a framework that achieves the explanatory work of the consciousness-collapse program with fewer primitives, fewer open problems, and without the machinery Chalmers and McQueen were forced to introduce by the Zeno problem their framework generated. The empirical equivalence they honestly acknowledge becomes a structural necessity rather than a puzzling limitation. The measurement problem does not need to be solved; it needs to be recognized as a question about dissociation asked in a vocabulary that did not know what it was describing.

This does not prove idealism. It shows that idealism simplifies. The Zeno problem — the hardest technical challenge for consciousness-collapse models — is an artifact of the wrong starting point. Remove the assumption that consciousness emerges from non-consciousness, and the problem does not arise. What remains is the genuine open question: why does consciousness dissociate into these particular finite perspectives with these particular experiential scopes? That question is real, and this project does not yet answer it. But it is a question about the behavior of a known primitive — not about the generation of experience from a substrate that lacks it. And that is a structurally lighter burden.

The founders of quantum mechanics recognized that the formalism terminates at the observer — that something outside the scope of unitary evolution accounts for the transition from possibility to actuality. They proposed that this something is consciousness. The subsequent interpretive tradition dismissed this proposal under cultural pressure, not empirical pressure. Chalmers and

McQueen have shown that the proposal can be explored with genuine mathematical precision — even if the resulting model is, by their own assessment, not yet as simple or powerful as leading alternatives. This essay suggests that it can be developed with philosophical economy — if one is willing to take the further step the founders’ instincts pointed toward: that consciousness is not a property of some physical systems, but the fundamental nature of reality, of which the physical is the extrinsic appearance.

The measurement problem is a question about measurement. Measurement is dissociation seen from outside. The question answers itself once one recognizes what is being asked.

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### **Related Essays in This Project**

Available at: <https://returntoconsciousness.org/>

[What Physics Actually Closes \(wpc\)](#) — The diagnostic clearing this essay builds upon

[Where Explanation Stops \(wes\)](#) — The brute-fact framework this essay’s cost comparison operationalizes

[Return to Consciousness \(rtc\)](#) — The idealist ontology this essay applies to quantum mechanics

[Consciousness Structure \(cst\)](#) — The boundary-permeability model that acquires formal significance under the dissociation-as-measurement identification

[Phenomenology of Awakening \(poa\)](#) — The phenomenology of boundary dissolution that provides independent evidence for the identification

[The Generativity Question \(tgq\)](#) — The criterion for evaluating ontologies that this essay provides a concrete example of