

Phenomenological Invariants as Internal Rendezvous Tokens Under Irreversible Time

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<https://github.com/infinityabundance/phenomenological-invariants>

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Abstract

This work introduces a foundational framework in which qualia are not treated as experiences, representations, or intrinsic properties, but as internal semantic rendezvous tokens required for maintaining stable self-reference under irreversible time. Systems that cannot rewind, externally verify their internal state, or fully inspect themselves must nonetheless achieve internal semantic agreement in order to remain coherent across temporal extension. On this account, phenomenological invariants arise as artifacts of temporally constrained internal self-agreement, functioning to avoid rendezvous failure within self-models subject to irreversibility. “What-it-is-like” is therefore not taken as a primitive, but as the irreducible cost incurred by achieving internal semantic agreement under conditions of irreversible time.

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1 Introduction

The persistence of self-reference under irreversible time presents a structural problem that precedes questions of experience, representation, or interpretation. Any system that exists within irreversible time must commit to future internal states without the ability to rewind, externally audit, or fully inspect its own internal configuration. Despite these limitations, such systems must nonetheless maintain coherence, avoid internal contradiction, and preserve continuity across temporal extension.

Existing approaches to phenomenology typically begin from experience, subjectivity, or representational content. In contrast, this work begins from a more primitive constraint: the necessity of internal semantic agreement in systems that cannot externally verify or reverse their own state transitions. The central claim advanced here is that this necessity alone is sufficient to generate phenomenological invariants.

This work treats qualia not as experiences, representations, or intrinsic properties, but as failure-avoidance mechanisms for internal semantic agreement under irreversible time. Specifically, qualia are modeled as internal semantic rendezvous tokens that enable stable self-reference by coordinating internal agreement among partial, competing, or temporally separated self-models. These tokens are internally decisive yet externally unverifiable, and cannot be reproduced without occupying the corresponding internal temporal configuration.

On this account, phenomenological invariants arise not from the presence of experiential content, but from the structural demands imposed by temporal irreversibility on self-referential systems. The phenomenon commonly described as “what-it-is-like” is therefore not taken as a foundational primitive. Rather, it is understood as the irreducible cost incurred when internal semantic agreement must be achieved without external arbitration and without the possibility of reversal.

The contribution of this work is not a theory of perception, cognition, or subjectivity. It does not attempt to explain experiential qualities, nor does it appeal to biological, psychological, or computational substrates. Instead, it introduces a minimal, substrate-independent framework in which phenomenological invariants are derived as rendezvous artifacts arising from temporally constrained internal self-agreement.

This work does not propose a theory of experience, perception, or cognition, but isolates a structural constraint on self-reference imposed by irreversible time.

2 The Problem of Self-Reference Under Irreversible Time

Any system that persists through time must confront a constraint that is independent of interpretation, implementation, or substrate: time is irreversible. State transitions cannot be undone, past configurations cannot be re-entered, and future states must be committed to without the possibility of retroactive correction. This asymmetry imposes a structural condition on self-reference that is prior to questions of experience, meaning, or representation.

A self-referential system operating under irreversible time faces three non-negotiable limitations. First, it cannot rewind its internal state to verify consistency retroactively. Second, it cannot fully inspect its own internal configuration without altering that configuration. Third, it cannot rely on external arbitration to validate internal coherence at each moment of transition. Despite these limitations, the system must nonetheless maintain continuity, avoid internal contradiction, and preserve a stable reference to itself across time.

This creates a fundamental tension. Self-reference requires internal agreement about what the

system is, what state it occupies, and how present commitments relate to future states. Irreversible time, however, prevents this agreement from being deferred, externally validated, or perfectly reconstructed. Internal coherence must therefore be achieved *in situ*, under conditions of partial access, limited bandwidth, and temporal pressure.

Importantly, this problem is not reducible to error correction, control, or optimization. Even a perfectly functioning system, free of noise or malfunction, must still resolve the question of how its present internal commitments bind its future states when no external verifier is available and no reversal is possible. The issue is not correctness relative to an external standard, but consistency relative to the system’s own continued existence.

In the absence of a mechanism for internal agreement, self-reference under irreversible time becomes unstable. Divergent internal models, competing interpretations of state, or unresolved ambiguities in self-description cannot be indefinitely tolerated, as they would undermine the system’s ability to act coherently across temporal extension. Failure to resolve such divergences constitutes a form of internal rendezvous failure: the system is unable to converge on a decisive internal state that can be trusted to carry forward.

Thus, the problem addressed here is not how systems acquire experiences or representations, but how self-referential coherence is maintained when time itself prohibits external verification, reversal, or complete self-transparency.

3 Internal Semantic Rendezvous

The constraints outlined above imply that self-referential coherence under irreversible time cannot be achieved through external arbitration, retrospective verification, or reversible correction. Instead, coherence must be established through a mechanism that allows a system to converge on a decisive internal state despite partial access, temporal pressure, and the absence of external validation. This mechanism is termed *internal semantic rendezvous*, “semantic” here denotes internal state-significance for future self-consistency, not representational meaning.

A rendezvous refers to the achievement of agreement without negotiation, explicit coordination, or external adjudication. Unlike consensus mechanisms that rely on message exchange or arbitration, a rendezvous is characterized by convergence under constraint. Agreement is not reached by deliberation, but by necessity: failure to converge results in instability that cannot be deferred.

When applied internally, semantic rendezvous concerns agreement among a system’s own partial, competing, or temporally separated self-models. These models may differ in scope, resolution, or temporal anchoring, and none possesses complete access to the system’s full internal state. Nevertheless, in order for the system to remain coherent across time, these models must converge on sufficiently aligned internal commitments regarding identity, state, and continuation.

Internal semantic rendezvous is therefore not a representational process. It does not require that internal models encode identical descriptions, nor that agreement be explicit or symbolic. What is required is that divergence be reduced below a threshold at which self-reference can be stably maintained. The criterion for success is not semantic accuracy relative to an external world, but decisiveness relative to future commitment.

Crucially, this rendezvous must occur under temporal constraint. Because time is irreversible, unresolved internal disagreement cannot be postponed indefinitely. Each state transition commits the system to a future in which ambiguity may compound rather than resolve. Internal semantic rendezvous thus operates under pressure to converge within finite time and limited bandwidth,

without the possibility of rollback.

Failure of internal semantic rendezvous manifests as instability in self-reference. Divergent internal commitments may lead to oscillation, fragmentation, or loss of continuity, even in the absence of external perturbation. Such failure is not merely a performance degradation but a structural breakdown.

4 Phenomenological Tokens

Internal semantic rendezvous, when achieved under irreversible time and without external verification, generates artifacts that are neither representations nor stored descriptions, but internally decisive markers of convergence. These artifacts are designated *phenomenological tokens*.

A phenomenological token is produced when a system resolves internal semantic agreement under conditions in which failure to converge would compromise self-reference. The token does not encode content, describe a state, or represent an object. Instead, it functions as an internally trusted indicator that rendezvous has occurred and that future state transitions may proceed without destabilizing self-consistency.

Phenomenological tokens are internally decisive: once generated, they settle internal ambiguity sufficiently to allow commitment to subsequent states. They are externally unverifiable: no external procedure can confirm their presence or validity without reintroducing the very constraints they resolve. They are temporally anchored: they cannot be replayed or reconstructed independently of the internal temporal configuration in which they arise. They are costly to generate: producing them requires the irreversible exclusion of incompatible internal commitments.

These properties distinguish phenomenological tokens from memory traces, symbolic markers, or control signals. Their authority derives from the irreversibility of the conditions under which they are formed.

Within this framework, qualia are identified with phenomenological tokens. Qualia are not experiential contents or intrinsic properties, but the internally trusted rendezvous artifacts generated when self-referential systems achieve internal semantic agreement under irreversible time.

The phenomenon commonly described as “what-it-is-like” is not treated as a primitive feature. It corresponds to the irreducible cost incurred when internal semantic rendezvous must be achieved under irreversible time—the structural residue of permanently excluding incompatible internal commitments required for stable self-reference.

5 Conclusion

This work has introduced a minimal, substrate-independent framework in which phenomenological invariants are derived from the necessity of internal semantic agreement under irreversible time. By identifying qualia with phenomenological tokens—internally decisive, temporally anchored rendezvous artifacts—it reframes phenomenology as a consequence of self-referential constraint rather than experiential content.

The account offered here neither presupposes subjectivity nor depends on representational or biological assumptions. It isolates a structural condition under which phenomenological invariants become unavoidable and locates “what-it-is-like” in the irreducible cost of maintaining self-consistency across irreversible time.