Kant, Harman, Sarkar:
The Fourfold Cycle of Teleological Emergence

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Abstract

This essay develops a structurally minimal account of teleological transformation based on two core elements: a fourfold cycle of orientations (RO, RQ, SO, SQ) and a sequence of inversion operators that prevent this cycle from collapsing into a simple rotation. Each traversal reshapes the conditions of the next, generating a spiral rather than a loop—a movement whose form is inherited but never repeated. Within this dynamic, phenomenality appears not as an endpoint but as a transitional configuration: a stabilized alignment of internal differentiations that renders the underlying movement locally visible without arresting it.

The essay further introduces higher-order structural operators that register the proliferating results of iteration without implying a coherent developmental arc. These operators do not add new stages to the fourfold structure; rather, they mark the structural curvature through which transformation extends beyond any given phenomenal configuration. Here, phenomenality articulates what becomes visible, while teleology names the selective ordering of transformations that makes such visibility possible, without presupposing a destination.

The result is a model in which the visible and the withdrawn, the local and the iterative, and the transient and the recurrent form a single ordered process—one that exceeds any particular configuration while becoming locally and temporarily manifest within each traversal.

1 Introduction

The question of how objects can appear to us while remaining, in their inner constitution, inaccessible has shaped philosophy since Kant. From a transcendental standpoint, experience is conditioned by forms of intuition and categories of understanding; what appears is therefore never the object as it is *in itself*, but only as it can be given under these conditions. The real object, in its noumenal structure, is thus necessarily *withdrawn*. Kant's insight is not merely epistemic but structural: appearance is possible only because something in the object remains unattainable.

A similar conclusion is reached—by very different means—within contemporary ontological realism, notably in Graham Harman's object-oriented ontology. Here, the object is not inaccessible because of the subject's cognitive limits but because the object possesses a depth

that no relation can exhaust. Every encounter reveals only a *sensual* profile, while the *real* object withdraws not behind the subject's faculties but behind its own operations. In both frameworks, albeit for different reasons, the same structural asymmetry emerges:

The object as it is never appears; what appears is always a mediated phase.

This raises a fundamental question: What enables the transition from a withdrawn real structure—whether understood transcendentally or ontologically—to its phenomenal manifestation?

Neither Kant nor Harman supply a process that explains how this mediation unfolds. The noumenal remains noumenal; the real object remains withdrawn. Yet experience undeniably presents a world that is coherent, structured, and continuous.

The present framework begins precisely here. We propose that the phenomenal world is not a primitive given but the outcome of a structured sequence of transformations. Instead of treating the real and the phenomenal as two ontological layers or two epistemic stances, we treat them as two positions within a dynamic field. The withdrawn object functions as a source-point, and the phenomenal object as the terminal phase of a generative progression.

This progression will later be described in terms of a fourfold operator cycle acting on quaternionically oriented fields. For now, it is sufficient to note that such a cycle provides what both Kant and Harman leave unarticulated: a *process* through which a withdrawn real structure can give rise to a phenomenal appearance without ever becoming fully accessible or exhausted. Phenomenality, on this view, does not reveal the real object; it reveals a necessary phase in the transformation that originates from it.

The subsequent sections develop this insight step by step, beginning with the conceptual and mathematical structure required to formalize the fourfold cycle.

2 The Fourfold Transformational Cycle

If the phenomenal world is not given directly but arises as a mediated phase, the next question concerns the structure of this mediation. Any process capable of linking a withdrawn real object to its phenomenal manifestation must satisfy two conditions: it must preserve the object's inaccessibility, and it must generate a form that can appear. A single transition cannot achieve this. What is required is a sequence in which distinct orientations of the underlying structure are traversed.

To model this, we introduce a fourfold cycle of fields—RO, RQ, SO, and SQ—using the nomenclature originally formulated by Harman and mapping each field to one of the quaternionic orientations $(\mathbf{k}, \mathbf{j}, \mathbf{i}, \mathbf{r})$. Although the quaternionic terminology is borrowed from mathematics, it is not employed here in its algebraic sense. Rather, it follows a methodological gesture developed in earlier work, in which physical quantities such as action, mass, and energy were reinterpreted as semantic operators—not to import physics into philosophy, but to clarify the structural functions these magnitudes fulfill in stabilizing coherent processes.

In the same spirit, the quaternionic terms used here do not quantify the object but indicate distinct orientations within a non-commutative pattern of transformation: conceptual figures that illuminate the asymmetries and directional tensions through which the fourfold sequence unfolds. Their role is structural rather than numerical, expressive rather than metric.

These orientations do not represent spatial axes but structural stances the object can assume in the course of its transformation. Their order is not arbitrary: quaternionic multiplication already imposes a cyclic relation among them, given by

$$\mathbf{k} \to \mathbf{j} \to \mathbf{i} \to \mathbf{r} \to \mathbf{k}.$$

This cyclicity provides a mathematically coherent framework for describing how a withdrawn structure can undergo phase-like transitions without ever becoming fully present.

Each of the four fields captures a distinct aspect of the object's structural potential. **RO** (**k**) represents the most withdrawn orientation, in which the object's real structure is maximally inaccessible. **RQ** (**j**) introduces the first displacement away from this opacity, yet without yielding a phenomenal profile. **SO** (**i**) marks the entry into a domain where relational or proto-phenomenal features become possible. **SQ** (**r**) corresponds to the phase in which appearance can occur—not because the real object becomes transparent, but because the sequence has reached the orientation structurally suited for manifestation.

The transitions between the four fields are generated by operators $\Omega_1, \Omega_2, \Omega_3, \Omega_4$, each of which enacts a specific structural rotation within the quaternionic framework. Taken together, these operators form a closed cycle through which the structural potential of the object is unfolded step by step.
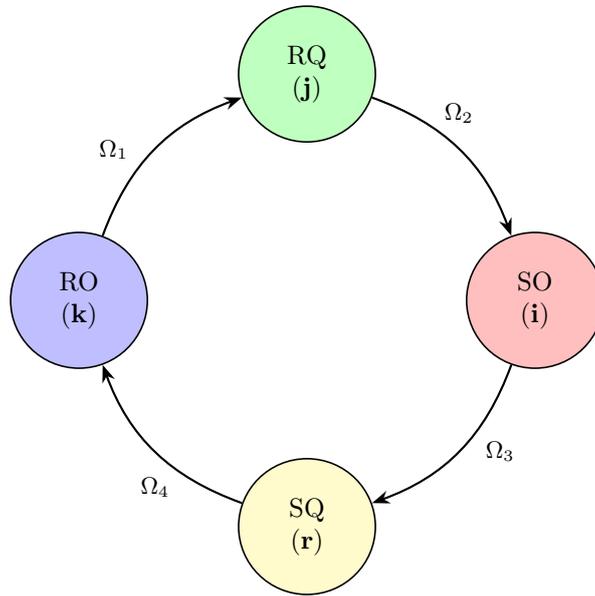

Figure 1: Circular representation of the teleological operator cycle in clockwise order, $RO(\mathbf{k}) \xrightarrow{\Omega_1} RQ(\mathbf{j}) \xrightarrow{\Omega_2} SO(\mathbf{i}) \xrightarrow{\Omega_3} SQ(\mathbf{r}) \xrightarrow{\Omega_4} RO(\mathbf{k})$, with SQ shown at the lower position as the phenomenal configuration of the cycle.

It is essential to emphasize that this fourfold cycle is not yet a teleological process. At this stage, we are concerned only with the structural possibility that a withdrawn real object may undergo a sequence of transformations leading to a phenomenal phase. Teleology will enter the account only once we clarify how this sequence becomes directionally stabilized and why it culminates necessarily—not contingently—in the **r**-phase.

The next section therefore turns to the formal properties of the operators Ω_1 through Ω_4, and to the mathematical representation of the cycle they generate.

3 The Four Operators Ω_1–Ω_4

Having identified the four fields RO, RQ, SO, and SQ as successive orientations of a withdrawn structure, we now introduce the operators that generate the transitions between them. Each operator Ω_n performs a specific quaternionic rotation that maps one orientation to the next,

thereby unfolding a complete cycle. Formally, this cycle corresponds to the ordered traversal

$$\mathbf{k} \to \mathbf{j} \to \mathbf{i} \to \mathbf{r} \to \mathbf{k},$$

which in turn induces the sequence

$$\text{RO} \xrightarrow{\Omega_1} \text{RQ}; \xrightarrow{\Omega_2} \text{SO}; \xrightarrow{\Omega_3} \text{SQ}; \xrightarrow{\Omega_4} \text{RO}.$$

3.1 Structural Role of the Operators

The operators Ω_1–Ω_4 do not act on empirical content but on structural orientations. Their function is not to disclose an object, but to articulate how an underlying structure can undergo successive phase-like displacements that make phenomenality possible. What changes is not the object itself, but the configuration through which it becomes articulable.

Building on the fourfold field structure introduced in section 2 this section examines how this cycle functions within a philosophical rather than a mathematical register. What matters here is not the quaternionic terminology itself but the structural role the four orientations play: they mark distinct modes of appearance, withdrawal, mediation, and stabilization through which an object's profile becomes accessible. In this sense, the fourfold is not a metaphysical taxonomy but a dynamic schema that clarifies how objects unfold across the real–sensual divide in Harman and how those stages connect, in our model, to Kantian and Sarkarian notions of transformability.

In the present context, the orientations serve as markers of distinct transformational stances within the cycle. Each operator Ω_n carries one such orientation into the next according to the structural ordering of the sequence:

$$\Omega_n : F_\alpha \longrightarrow F_\beta,$$

where $F_\alpha, F_\beta \in \{\text{RO}, \text{RQ}, \text{SO}, \text{SQ}\}$ and the mapping preserves the internal ordering of the fourfold cycle. No algebraic interpretation of the quaternionic units is required; their role is structural rather than computational.

3.2 Definition of the Operators

We capture the structure of the four operators by assigning to each the rotation that carries one quaternionic orientation into the next. In abstract form:

$$\Omega_1 : \text{RO}(\mathbf{k}) \longrightarrow \text{RQ}(\mathbf{j}),$$
$$\Omega_2 : \text{RQ}(\mathbf{j}) \longrightarrow \text{SO}(\mathbf{i}),$$
$$\Omega_3 : \text{SO}(\mathbf{i}) \longrightarrow \text{SQ}(\mathbf{r}),$$
$$\Omega_4 : \text{SQ}(\mathbf{r}) \longrightarrow \text{RO}(\mathbf{k})$$

These transitions are not reversible in a trivial sense. While quaternionic multiplication allows one to invert rotations algebraically, the structural sequence defined here encodes an asymmetry: each step transforms not only an orientation but also the internal accessibility of the object. This asymmetry will later give rise to the teleological dynamics of the full cycle, though no teleological assumptions are required at the present stage.

A similar clarification applies to the symbol $\neg$ used in subsequent sections. Although reminiscent of logical negation, it does not denote a truth-functional operation. Rather, it marks a structural inversion within the operator cycle—an operation that dissolves a polarity and prepares the transition to higher-order configurations. Its full significance will

be developed in later chapters, once the nonlinearity of the cycle becomes explicit.

Schematic illustration of the fourfold cycle aligned to Sarkar's Four Chamber Model
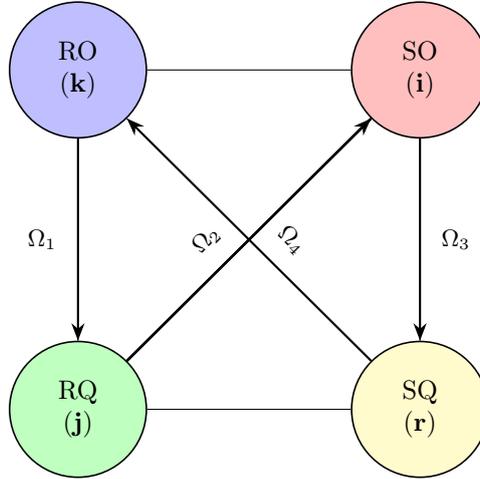

Figure 2: Local structure of a single traversal of the operator cycle. The diagram does not represent the spiral but the orientational pattern—RO, RQ, SO, SQ—from which the spiral form emerges across successive traversals through the accumulation of the drift term Δ.

3.3 Formal Summary of the Fourfold Transformational Cycle

First inversion (Ω_1): Negation of the polarity.

$$\neg\,(A_n, B_n) = A_n + B_n.$$

Second inversion (Ω_2): Negation of the linear composite.

$$\neg\,(A_n + B_n) \;\mapsto\; (A_n, C_n, D_n, B_n).$$

Third inversion (Ω_3): Negation of the fourfold structure.

$$\neg\,(A_n, C_n, D_n, B_n) \;\mapsto\; (A_n, C_n + D_n, B_n).$$

Fourth inversion (Ω_4): Negation of the recombined triad.

$$\neg\,(A_n, C_n + D_n, B_n) \;\mapsto\; (A_n C_n, D_n B_n).$$

These four inversions represent the minimal sequence of structural operations that generate the full RO–RQ–SO–SQ cycle. The inversion operator $\neg$ appears here in its compact formal expression.

3.4 Cyclic Closure

A crucial feature of the operators is their closure under iteration:

$$\Omega_4 \circ \Omega_3 \circ \Omega_2 \circ \Omega_1 = \mathbb{I},$$

where $\mathbb{I}$ denotes the identity on the level of orientations. This does not imply that the object returns unchanged; it means only that the cycle as a whole completes a full traversal of the quaternionic structure. The identity is structural, not phenomenological: the path is cyclic, but its internal phases are distinct and non-interchangeable.

Having defined the operators abstractly, we now turn to the structural significance of the transformations they enact. Rather than pursuing an algebraic realization, the next section examines how these transitions articulate the internal logic of the fourfold cycle.

3.5 Intuitive Interpretation of the Fourfold Cycle

The formal definition of the operators provides the algebraic skeleton of the cycle, but its structural meaning can be understood only by examining how each transition modifies the status of the withdrawn object. The four phases do not represent empirical states or perceptual modes; they are structural orientations through which the hidden object is progressively reconfigured while remaining inaccessible throughout. Each step alters not what the object *is*, but how its withdrawn depth is *positioned* relative to the possibility of appearance.

From RO to RQ. The transition enacted by Ω_1 moves from the deepest mode of withdrawal (RO, aligned with $\mathbf{k}$) to a slightly more articulated form (RQ, aligned with $\mathbf{j}$). Nothing is revealed; rather, the structure of concealment becomes internally differentiated. In Kantian terms, one might say that the object's noumenal opacity does not change, but the conditions under which it may later enter into forms of synthesis begin to shift.

From RQ to SO. The second transition, governed by Ω_2, introduces a relational orientation (SO, aligned with $\mathbf{i}$). This is not yet appearance, but it marks the point at which structural relations become possible. In Harman's ontology, one would say that the real object continues to withdraw, but a sensual contour becomes thinkable—even though it is not yet actual. The object is not given; rather, the mode of its non-givenness acquires a form.

From SO to SQ. The third transition, Ω_3, leads to the SQ-phase, associated with $\mathbf{r}$. Here the structure reaches the configuration that makes phenomenality possible. Crucially, this does not mean that the withdrawn object is disclosed; rather, the structural alignment now permits a phenomenal profile to emerge. What appears in experience corresponds to this configuration—not to the object itself, which remains withdrawn behind it.

From SQ back to RO. The final transition, enacted by Ω_4, closes the cycle by returning to the initial orientation. This return does not restore the object to an original state; instead, it completes the structural loop that ensures the distinctness and interdependence of the four phases. The cycle's closure guarantees that no phase can be understood in isolation: each gains its meaning from the position it occupies relative to the others.

Taken together, the four transitions describe a structured unfolding across successive orientations that culminates in a phenomenal phase. What becomes present is a configuration generated by the traversal of the cycle, not the underlying structure itself. Throughout

the following sections, phenomenality will be treated as a stabilized configuration within a transformational sequence, not as the disclosure of an underlying object.

4 From Structural Cyclicity to Teleological Direction

The fourfold cycle described in the previous sections specifies how a withdrawn real structure can traverse the orientations RO, RQ, SO, and SQ without ever becoming present as it is. Taken by itself, however, this cycle remains structurally neutral. Nothing in the quaternionic rotations enacted by the operators Ω_1–Ω_4 compels the sequence to culminate in the r-orientation rather than in any of the others. A purely symmetric rotation can repeat indefinitely without producing a phase suited for phenomenality.

This reveals a fundamental limitation of structural cyclicity on its own: structure does not yet yield appearance. Something must determine not only the order of transitions, but also the direction in which the cycle unfolds. Without such directionality, the object could pass endlessly through its orientations without ever stabilizing into a phenomenal configuration.

4.1 Teleological Curvature as Structural Asymmetry

The required direction enters through what we call *teleological curvature*. Unlike an external purpose or final cause, teleological curvature designates an intrinsic deformation of the operator cycle itself. Formally, it appears wherever successive operators fail to commute:

$$\Omega_{n+1} \circ \Omega_n \neq \Omega_n \circ \Omega_{n+1}.$$

This noncommutativity does more than encode algebraic asymmetry; it introduces an effective gradient in the operator space. Each transition contains a structural potential that can be fully discharged only in the next. The sequence thereby acquires a preferred direction, becoming a flow along a discrete gradient:

$$k \rightarrow j \rightarrow i \rightarrow r,$$

corresponding to a monotonic decrease in structural opacity. The real object does not become transparent, but the mode of its withdrawal becomes increasingly compatible with the possibility of appearance.

4.2 Why the Operators Alone Do Not Produce Direction

This also clarifies the roles of the operators themselves. The transformations enacted by Ω_1–Ω_4 articulate how each phase arises from its predecessor. They determine what transforms, but not why the sequence advances in one direction rather than the reverse. Without curvature, the cycle would be dynamically neutral: a rotation rather than a progression.

Teleological curvature therefore provides the missing structural ingredient. It biases an otherwise symmetric system toward the r-orientation—the only configuration in which the accumulated tensions of the preceding phases can temporarily stabilize into phenomenality.

4.3 Transition to the Phenomenological Level

With this, the emergence of appearance no longer seems contingent. The cycle passes through r not by stipulation but because the operator-induced gradient resolves only there. The r-phase is thus not a privileged empirical state, but the structural minimum of the sequence:

the point at which the curvature of the operator space vanishes and a phenomenal profile can stabilize.

The next chapter examines the physical and phenomenological meaning of this directedness, showing how the r-orientation functions as the structural precondition of appearance.

5 Physical and Phenomenological Interpretation

The analysis of teleological curvature shows that the fourfold operator cycle is not merely a formal structure but a directed transformation whose culmination in the **r**-orientation is structurally compelled. We now examine how this directedness expresses itself phenomenally and why the **r**-orientation constitutes the stable configuration in which a world can appear.

5.1 Directedness as the Precondition of Appearance

Since the structure remains withdrawn as such, appearance cannot arise from a mere circulation through the four orientations. What matters is the directed transformation introduced by teleological curvature: the internal asymmetries of the operator space bias the cycle toward the r-orientation. Only this directedness provides the structural stability required for a phenomenal configuration to form.

The emergence of appearance is therefore not disclosure, but stabilization. Phenomenality marks the fixed point of the operator-induced flow: the configuration in which the accumulated tensions of the cycle temporarily resolve.

5.2 The r-Phase as a Stability Configuration

The stability of the SQ-phase arises because it is the unique point at which the curvature operator K vanishes:

$$K\Psi = 0 \quad \Longleftrightarrow \quad \Psi \in \mathrm{SQ}(r).$$

Only in the r-orientation does the structural tension generated by the preceding rotations resolve into a configuration that is locally stable, while still remaining subject to further transformation by Ω_4. Phenomenally, this corresponds to the appearance of a world that is coherent, measurable, and relatively stable compared to the flux of underlying orientational shifts.

In this sense, the r-phase constitutes not the object as it is, but the configuration through which appearance becomes possible.

5.3 Relation to Kant: Conditions of Manifestation

Kant held that the object as noumenon cannot appear, but that appearances require transcendental structures—space, time, and the categories—that stabilize the flux of intuition. In the present framework, this stabilization is not imposed from outside but arises internally from the curvature of the operator cycle.

The r-orientation plays an analogous role to the Kantian forms of intuition. It provides the structural regularity that makes appearance possible, without rendering the underlying structure transparent.

5.4 Relation to Harman: Withdrawal and Sensual Profiles

In Harman's object-oriented ontology, the real object withdraws absolutely and cannot be accessed directly; only sensual profiles generated in encounters appear. The present framework

agrees with this core claim but provides a structural account of how such profiles become possible at all.

The SQ-phase corresponds to the orientation in which the operator cycle stabilizes sufficiently to support phenomenal profiles. The structure does not become less withdrawn; rather, the mode of its withdrawal becomes compatible with manifestation. Phenomenality emerges not from revelation but from structural completion.

5.5 Phenomenal Reality as the Terminal Expression of Curvature

The experienced physical world—continuous, measurable, and relatively stable—corresponds to the terminal orientation of the transformational cycle. It does not disclose the inner nature of the underlying structure; it expresses the configuration in which the tensions induced by the operators are fully resolved.

In this sense:

- physics studies the properties of the r-orientation,

- phenomenology describes how this orientation is lived,

- ontology explains why it constitutes the necessary culmination of the process.

The world we inhabit is therefore not the underlying structure itself, but the stable phenomenal form generated by teleological curvature within the operator system.

6 Integration with the Microvita–Teleology Framework

The operator cycle developed so far explains how a phenomenal configuration becomes structurally possible. What it does not yet explain is how the cycle is *populated* with content—how forms, meanings, or semantic coherences come to inhabit the phenomenal phase. To address this, we now integrate the cycle into the broader Microvita–teleology framework.

In this framework, Microvita are understood not as physical particles nor as mental entities, but as teleological operators: minimal agents of structural modulation that mediate between the underlying structure and its phenomenal expression. They act on the same quaternionically oriented fields as the operators Ω_1–Ω_4, but in a complementary fashion: whereas the Ω_n determine the form and direction of the cycle, Microvita determine the content and semantic density of each phase.

6.1 Microvita as Local Curvature Modulators

Teleological curvature, as described in the previous section, introduces a global bias that drives the cycle toward the r-orientation. Microvita act at a finer resolution: they modulate the curvature locally, shaping how the flow through the intermediate phases develops. Formally, we may write their influence as a perturbation of the curvature operator:

$$K \longrightarrow K + \delta K_{\mathrm{mv}},$$

where δK_{mv} represents the local deformation induced by Microvita. This modulation does not alter the directionality of the cycle but affects its internal articulation, allowing the system to generate structured expressions rather than mere terminal stabilization.

6.2 Semantic Coherence as an Emergent Constraint

Microvita contribute to the emergence of semantic coherence within the SQ-phase. While teleological curvature ensures that the r-orientation is reached, it does not determine the

internal organization of this phase. The stability of the phenomenal world depends on the presence of coherent patterns within SQ—patterns that express consistent relations, identities, and regularities.

In this context, Microvita act as semantic stabilizers. They modulate the fields by adjusting their relational structure, effectively selecting which configurations become phenomenally viable. In mathematical terms, this can be expressed by a Microvita-induced refinement of the SQ-field:

$$\Psi_{\text{SQ}} \longrightarrow \Psi_{\text{SQ}}^{\text{coh}} = M_{\text{mv}}(\Psi_{\text{SQ}}),$$

where M_{mv} denotes a Microvita operator acting on the stabilized orientation. This action generates semantic gradients and local attractors that shape the phenomenal world into a coherent domain.

6.3 Teleology, Microvita, and the Formation of Phenomenal Form

Teleology determines the direction of the cycle, driving structural withdrawal toward its phenomenally expressive configuration. Microvita provide the differentiated content that makes this expressive configuration meaningful. The result is not only a stable phenomenal world but one endowed with semantic structure—patterns that can be interpreted, inhabited, and acted upon.

Thus, appearance can be described in three interrelated aspects:

1. **Withdrawn structural source:** inaccessible, non-relational, ontologically rich.

2. **Operator cycle with teleological curvature:** transforms the underlying structure into a phase capable of manifestation.

3. **Microvita-induced semantic organization:** fills the phenomenal phase with coherent structure, generating meaning and form.

The phenomenal world is therefore neither a veil concealing a real object nor a projection of subjective faculties. It is the emergent outcome of a system in which structural withdrawal, directional transformation, and semantic modulation cooperate. Teleology ensures that appearance occurs; Microvita ensure that appearance becomes *meaningful*.

6.4 Microvita as Modulation Operators

Microvita influence the evolution of the operator cycle not by altering the global structure of the fourfold sequence, but by modulating the internal composition of each phase. Their contribution can be formalized as a local perturbation introduced during the n-th traversal through the r-orientation:

$$K_{n+1} = K_n + \delta K_{\text{mv},n}.$$

Here, $\delta K_{\text{mv},n}$ denotes the Microvita-induced modification accumulated at that step. Such perturbations contribute to the semantic density built up across cycles and thereby play a significant role in the divergence that leads to spiral dynamics.

With these considerations in place, we can express the modulatory role of Microvita in a concise operator formulation.

The following section develops this integration further by examining how Microvita interact with the teleological gradient, giving rise to a dynamic, content-rich version of the SQ-phase.

7 Iteration of the Operator Cycle: From Cyclic Closure to Spiral Drift

The fourfold operator cycle describes a structurally invariant traversal through the orientations $\mathbf{k} \to \mathbf{j} \to \mathbf{i} \to \mathbf{r} \to \mathbf{k}$. Taken in isolation, this sequence appears closed. As a purely formal composition, the operators satisfy

$$\Omega_4 \circ \Omega_3 \circ \Omega_2 \circ \Omega_1 = \mathbb{I}.$$

From a static perspective, nothing seems to prevent the cycle from repeating indefinitely as a perfect rotation.

This impression is misleading. While the operator sequence remains structurally invariant, the states to which it is applied do not. Once the cycle is iterated, successive traversals fail to return the system to an identical configuration. Formally identical operations thus produce historically non-identical outcomes. The cycle does not close; it drifts.

7.1 Why the Cycle Cannot Close

Let $\Psi^{(n)}$ denote the state at the beginning of the n-th traversal. Although the same composite operator is applied at each iteration, the resulting states do not coincide:

$$\Psi^{(n+1)} \neq \Psi^{(n)}.$$

This non-identity does not arise from a modification of the operator structure itself, but from two internal features of the traversal.

First, the cycle is traversed under conditions of teleological curvature. Operator-induced transitions are therefore not neutral; each traversal leaves behind a residual structural displacement that cannot be undone by reversal or repetition.

Second, Microvita act as local modulatory influences. Their effect is not to add new stages or orientations, but to alter the internal configuration of each phase, most notably the semantic consolidation that occurs in the $\mathbf{r}$ orientation. These modulations accumulate across iterations.

7.2 Structural Inversion and Iterative Non-Identity

A decisive role in this process is played by the inversion operator $\neg$. Despite its graphical similarity to logical negation, $\neg$ does not operate on truth values. It denotes a structural inversion that dissolves linear polarity and reopens it in a higher-order configuration.

Applied to a polarized pair (A, B), the first inversion collapses the polarity into the linear composite $A + B$. A second inversion does not restore the original pair, but generates a fourfold configuration (A, C, D, B). What appears as a double negation is therefore not a return, but a generative expansion. It produces the minimal non-linear differentiation required for the emergence of SO.

Crucially, $\neg$ transforms not only states, but the structural conditions under which subsequent transitions occur. Each traversal of the operator cycle thus begins from a configuration that has already been structurally altered. This alone suffices to prevent identity across cycles.

7.3 The Spiral as a Meta-Dynamical Pattern

The consequence of iterative non-identity is the emergence of a spiral. This spiral is not a dynamical structure operating within a single traversal, nor is it an additional operator or orientation. It is a meta-dynamical pattern that becomes visible only when multiple traversals are considered together.

Each cycle follows the same ordered sequence of orientations. What changes is not the form of the cycle, but the cumulative residue left behind by its repeated execution. The spiral records this historical non-identity under invariant structural conditions.

For this reason, the spiral must not be interpreted as the expression of a hidden global telos. It encodes difference without prescribing direction. It shows that the process does not return to itself, but it does not determine where the process is heading.

7.4 Asymmetric Drift of Differentiation and Consolidation

The cumulative effect of iteration manifests itself in the opposed behavior of two emergent sequences, C_n and D_n. Differentiation propagates forward through the C-terms, while consolidation propagates backward through the D-terms. After n iterations, the polar components take the form

$$A_n = \big(A_0, C_0, C_1, \ldots, C_n\big), \qquad B_n = \big(D_n, \ldots, D_1, D_0, B_0\big).$$

This asymmetric propagation produces a structural drift that is neither random nor goal-directed. It arises from the internal logic of repeated traversal.

7.5 Drift as an Irreducible Residue

Let

$$\Sigma := \Omega_4 \circ \Omega_3 \circ \Omega_2 \circ \Omega_1$$

denote the invariant composite operator. Spiral dynamics emerge not because Σ changes, but because each traversal leaves behind an irreducible residue, denoted by Δ.

The evolution of the system can therefore be expressed schematically as

$$\Psi^{(n+1)} = \Sigma\Big(\Psi^{(n)}\Big) + \Delta\Psi^{(n)}.$$

The term $\Delta\Psi^{(n)}$ is not an operator and does not encode a new orientation. It records the minimal displacement generated by the n-th traversal. Accumulated across iterations, this displacement transforms formal cyclicity into spiral drift.

7.6 Geometric Signature Without Direction

In geometric representation, the spiral's radial expansion marks cumulative non-return from structural identity, while its vertical displacement marks the accumulation of internal semantic differentiation, without implying direction or purpose.

The spiral is therefore best understood as a structural trace rather than as the manifestation of a hidden telos. It records structural asymmetry generated through iteration, not a developmental destination. The following section considers how local consistencies may recur across traversals without constituting higher-order attractors or global tendencies.

8 Higher-Order Attractors and the Transitional Status of the r-Phase

The spiral dynamics of the iterated operator cycle shows that the **r**-phase, while locally stable, cannot function as an ontological endpoint. Each traversal produces a temporary stabilization of phenomenality, but the structural and semantic tensions accumulated during the cycle re-enter the process as new initial conditions. The structures that emerge across cycles are not simply enlargements of what appears on the circular level; they express relations that become visible only through accumulation and recurrence.

8.1 Local Stability Versus Global Teleology

Within a single traversal, the **r**-orientation is the unique point at which the curvature operator vanishes:
$$K\Psi_{\mathbf{r}}^{(n)} = 0.$$

This endows the **r**-phase with local stability: the transformational tension of the cycle is temporarily resolved, and a coherent phenomenal world can arise. Yet this resolution is not final. The subsequent cycle begins with a state influenced by the semantic content generated in the **r**-phase:
$$\Psi_{\mathbf{k}}^{(n+1)} = \Psi_{\mathbf{k}}^{(n)} + \Delta\Psi_{\mathbf{r}}^{(n)}.$$

Here, $\Delta\Psi_{\mathbf{r}}^{(n)}$ denotes the drift increment through which stabilized phenomenal form re-enters the cycle as new structural potential. Thus, while phenomenality crystallizes in the **r**-phase, the process as a whole is propelled beyond it. The phase of appearance is therefore strictly transitional: it completes one level of organization but initiates the next.

8.2 Recurring Motifs and Local Coherences

As the cycle iterates, the system does not merely accumulate additional content; it may also exhibit recurring structural motifs—local consistencies that arise across several traversals. Such motifs indicate that certain relational configurations possess enough stability to reappear, without implying convergence toward a privileged state or a global developmental trajectory. These recurrent patterns lend the unfolding sequence a degree of coherence, yet they do not determine its long–range orientation.

8.3 The r-Phase as the Generator of Semantic Excess

Each passage through the **r**-phase produces a surplus of structural and semantic determination. This "semantic excess" does not remain confined within a single phenomenal configuration; it feeds back into the system:
$$\Delta_{\text{semantic}}^{(n)} = \Psi_{\mathbf{r}}^{(n)} - \Psi_{\mathbf{r}}^{(n-1)}.$$

This definition is purely descriptive and should not be confused with the generative drift term $\Delta\Psi$.

The phenomenal world is therefore not the final expression of the cycle but the phase in which semantic differentiation attains a stable articulation. It is the structural moment at which the ongoing transformations become externally legible before the process advances into a new round of organization. This differentiation—together with the generation of the operators C_n and D_n during the transition from RQ to SO—is what enables the successive enrichment of the cycle as a whole.

8.4 Teleology Beyond Phenomenality

The directedness described so far concerns only the internal structure of the operator cycle itself: each traversal is oriented toward the r-phase, not because the object aims at appearance, but because the sequence of transformations contains an intrinsic asymmetry. This local teleology belongs to the structural dynamics of the cycle, not to the object in its withdrawn reality.

Beyond this, no further teleological claims can be sustained. The passage through the r-phase generates a stable articulation of semantic differentiation, and this differentiation may shape later traversals. Yet it does not by itself establish a long-range direction of development. The phenomenal configuration expresses a coherent moment of organization, but it does not determine how this organization will continue to unfold beyond its immediate articulation.

In this sense, phenomenality marks the level at which the process attains a legible configuration and acquires new semantic content. The differentiations that become articulated here—together with the operators C_n and D_n generated during the RQ→SO transition—ensure that each traversal begins from a more richly structured configuration than the last. The cycle continues, but nothing available at the level of articulation allows us to infer the direction of its further development.

8.5 From Phenomenal Form to Ontological Development

The passage through the r-phase does not reveal the inner structure of the object, nor does it by itself ground higher levels of meaning, normativity, or teleology. What becomes accessible in phenomenality is a structured articulation of relational features—an organization that arises within the cycle and contributes to its ongoing enrichment, even though it does not disclose the broader conditions that sustain it.

Although this articulation influences subsequent traversals and supplies the starting point for increasingly differentiated configurations, it does not in itself warrant the inference of an ascending ontological hierarchy or a hidden telos. The process continues, and its cumulative transformations may exhibit higher-order regularities, but such patterns cannot be read directly off any single phenomenal configuration.

In this sense, the relation between appearance and the withdrawn does not take the form of a developmental hierarchy. Appearance offers a localized vantage point from which structural tensions and differentiations become legible, while their long-range organization—if such organization exists—remains beyond what phenomenality alone can disclose.

8.6 Teleological Integration, Development, and Its Regulative Horizon

When the operator cycle is viewed across many iterations, certain relational configurations recur with enough consistency to influence later phases. Such recurrences lend the overall sequence a degree of coherence, though this coherence does not amount to a global orientation or developmental trajectory. It reflects the cumulative effects of structural asymmetries and semantic surplus, rather than a tendency toward an ultimate state.

The spiral geometry associated with successive traversals illustrates the non-return of the system and the accumulation of differentiation over time. What emerges is a pattern of local consistencies—forms that persist long enough to shape subsequent traversals without implying convergence or finality.

Teleology, as understood here, is neither reducible to blind drift nor exhausted by the denial of final causes. It designates a selective ordering of transformations in which certain configurations achieve relative stability and recurrence, without presupposing a global end state or developmental hierarchy. In this sense, the sequence exhibits a genuine, albeit

minimal, form of integration: patterns persist long enough to shape subsequent traversals, even though they do not determine a final state or global orientation. The process advances through structurally constrained transformation, while the broader horizon of its continuation remains open rather than predetermined.

This minimal account of teleological integration does not exclude the presence of a limiting case. In Sarkar's account, Dharma names not a realizable end state, but an asymptotic attractor of unity—a regulative horizon of maximal coherence. As such, Dharma does not function as a goal toward which the process converges, nor as a direction that could be extrapolated from its dynamics. Rather, it marks an asymptotic condition of integration that is never attained within the cycle, yet remains operative as a structural constraint on the emergence of coherence.

Under this horizon, local stabilizations and recurrent patterns can be understood as partial realizations of coherence without implying convergence. Dharma thus does not reintroduce final causality; it names the limiting condition under which teleological ordering can remain selective, non-final, and structurally grounded.

The question that follows is how this minimal, structurally grounded form of teleology becomes phenomenally accessible, and what limits such access imposes on teleological inference.

9 Phenomenality and the Limits of Teleological Inference

Phenomenality arises within the **r**-phase as a locally stabilized alignment of internal differentiations—a configuration in which aspects of an otherwise withdrawn structure become accessible. In this phase, the selective ordering of transformations established by the operator cycle attains a form of phenomenal articulation. What appears is not the inner nature of the object, but a stabilized surface of articulation generated within the cycle itself.

This accessibility does not exhaust the structure from which it arises, nor does it disclose the trajectory of subsequent transformations. Phenomenality renders the internal asymmetry of the process locally visible, without converting this visibility into foresight or global orientation.

9.1 Phenomenality as Transitional Configuration

The **r**-phase marks the point at which the cumulative tensions generated by preceding transformations become articulate. This articulation does not constitute a terminal state; it persists only as long as the local conditions of stabilization are maintained. As the cycle continues, the configuration dissolves, even as it leaves behind structural modifications that shape the conditions of the next traversal.

Each iteration thus produces a phenomenal configuration that is both transient and consequential. Phenomenality is not the expression of an intrinsic drive toward appearance, but the structurally compelled outcome of a transformation sequence whose orientation is internal to the process itself. What becomes visible is a locally stabilized configuration within a larger process whose full scope is not exhausted by phenomenal disclosure.

9.2 On the Question of Higher-Order Integration

Across multiple traversals, certain relational patterns may recur with sufficient regularity to impart coherence to the overall sequence. These recurrences are not accidental: they indicate that some configurations possess a degree of structural stability that allows them to re-emerge under comparable conditions. At the same time, such persistence does not amount to convergence toward a determinate higher-order endpoint.

To register these recurrent patterns, we introduce the notational device Ω^*, not as a teleological operator, but as a descriptive marker for relations that achieve temporary stability across several traversals. Ω^* records selective persistence without implying hierarchy, culmination, or developmental completion.

9.3 The Non-Return of the Cycle

The spiral form marks the non-identity of successive traversals without implying development or direction. It renders structural asymmetry visible while remaining agnostic with respect to teleological projection.

9.4 Mutual Illumination of Teleology and Appearance

The operator cycle exhibits an intrinsic orientation toward the **r**-phase, insofar as this phase provides the condition under which internal tensions become phenomenally articulated. This orientation is real but strictly local: it governs the internal organization of the cycle without extending to a global telos or a determinate end state. In this sense, Dharma operates teleologically without being finalistic.

Phenomenality marks the point at which this local orientation becomes visible. It renders accessible a moment of stabilized articulation, while teleology— understood in a minimal, structural sense—designates the ordered relations of transformation that make such stabilization possible in the first place. Beyond this local articulation, the withdrawn structure of the process continues to exceed every phenomenal disclosure.

9.5 Phenomenality as Passage

The **r**-phase is therefore best understood as a passage rather than a destination. It marks the interval in which the internal organization of the cycle becomes locally accessible, even as the process continues into new configurations whose precise form cannot be inferred from what has appeared.

Phenomenality provides a vantage point from which aspects of the transformative movement can be apprehended without converting this access into foresight or closure. It offers a stabilized articulation within a process that unfolds through structural differentiation and semantic accumulation, while preserving the openness that characterizes its ongoing transformation.

10 Concluding Remark

The present analysis marks a reorientation within my broader research program. Earlier work—most notably the development of teleological semantics, the role of attractors, and the immanent account of Microvita as operators within a semantic field—was motivated by the attempt to clarify the formative processes that shape meaning from within. The guiding assumption was not that appearance could be bypassed, but that its internal organization might be rendered structurally intelligible through sufficiently refined conceptual and mathematical models.

The Fourfold Cycle presented here clarifies both the reach and the limits of this approach. Immanent models do not grant access to what lies beyond appearance; rather, they articulate the inner structure of appearance itself—its modes of stabilization, differentiation, and semantic self-organization. They make visible how appearance takes form, without claiming to disclose the ultimate source from which this form arises. Teleological dynamics, in this

sense, are not objects of representation, but conditions under which representation becomes possible at all.

This does not diminish the significance of the earlier work. On the contrary, it is what renders the present framework intelligible. Without the semantic field, the attractor architecture, and the operatorial description of Microvita, there would be no conceptual means by which emergent form could be recognized or described. The earlier analyses therefore retain their full validity, but their status is now more precisely situated: they describe the grammar of appearance from within, while the Fourfold Cycle delineates the structural dynamics that render such grammatical order possible in the first place.

The two strands of inquiry thus stand in a complementary relation. The earlier work offers a phenomenology of teleological form; the present study develops an ontology of teleological emergence. Together, they outline a process in which structural orientation and phenomenal articulation remain inseparable, even as the generative core of this process resists total disclosure. What becomes visible does so locally and transiently—yet not arbitrarily—within a dynamics that is ordered without being finalized, and constrained by conditions of integration that are never themselves realized.

Appendix: Notation

Table 1: Summary of orientations, operators, and modulatory terms.

Symbol	Meaning
Orientations and phases	
RO	Real–object orientation (initial polarity)
RQ	Real–quality orientation (first inversion of the polarity)
SO	Surficial–object orientation (differentiated configuration)
SQ	Surficial–quality orientation (phenomenal transition)
r-phase	Phenomenal phase (stabilized articulation within a traversal)
Cycle operators	
Ω_1	First inversion: negation of the initial polarity (RO $\to$ RQ)
Ω_2	Second inversion: productive divergence; generation of C_n and D_n (RQ $\to$ SO)
Ω_3	Third inversion: pre-phenomenal consolidation (SO $\to$ SQ)
Ω_4	Fourth inversion: phenomenal release and reorientation toward RO (SQ $\to$ RO)
Δ	Drift term associated with non-closure of the cycle; accumulative source of spiral dynamics
Modulation and higher-order structure	
M_n	Local Microvita-induced modulation during the n-th traversal (semantic enrichment)
Meta-operators	Higher-order operators describing structural curvature across traversals
Descriptive notation	
Ω^*	Notational marker for recurrent relational patterns across traversals; descriptive only, not an operator