

Archetypes as Strange Attractors: Conceptual Parallels with the Attractor Framework

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Abstract

The attractor framework proposes that persistence under perturbation is the fundamental mark of reality, with corrective permeability (κ) serving as a proposed measure of a system's capacity to return to its attractor after perturbation. Van Eenwyk (1991) published a paper in the *Journal of Analytical Psychology* proposing that Jungian archetypes function as strange attractors of the psyche-dynamical patterns that organize psychological experience without ever repeating identically. This paper identifies conceptual parallels between Van Eenwyk's archetype-as-attractor model and the attractor framework. Both draw on a shared upstream tradition in chaos theory. Van Eenwyk's model is itself a theoretical analogy, not an empirically validated result; the parallels identified here are therefore conceptual rather than evidential. They demonstrate consistency within a shared intellectual tradition, not independent corroboration. This mapping carries substantially lower evidential weight than the framework's mappings onto quantitatively validated methods such as

Symmetric Projection Attractor Reconstruction (SPAR) and the empirically identified hypothalamic line attractor reported by Nair et al. (2023).

1. Introduction: Archetypes as Dynamical Attractors

The attractor framework (Galida, 2026a, self-published May 2026 at fantasyattractor.com; no DOI) proposes that dissipative attractors—stable configurations toward which systems converge and from which they resist displacement—are the fundamental units of persistent organization across physical, biological, cognitive, and social domains. Corrective permeability (κ) is a proposed measure of a system's capacity to return to its attractor after perturbation.

In 1991, John Van Eenwyk published “Archetypes: The Strange Attractors of the Psyche” in the *Journal of Analytical Psychology*. Drawing on the emerging science of chaos theory—Gleick, Mandelbrot, Lorenz, Feigenbaum—Van Eenwyk proposed that Jungian archetypes are not fixed images or inherited memories, but dynamical attractors: persistent patterns that organize psychological experience without ever producing identical outputs.

Van Eenwyk's work and the attractor framework were developed entirely independently; neither cites the other. However, both draw on a shared upstream intellectual tradition in chaos theory and nonlinear dynamics. The convergences identified here are therefore expected to some degree: two independent applications of the same mathematical vocabulary to human psychology will naturally produce similar descriptions. This paper identifies conceptual parallels while explicitly distinguishing their evidentiary weight from the framework's

mappings onto quantitatively validated methods such as SPAR (Bonet-Luz et al., 2020) and the Nair et al. (2023) line attractor, where Nair et al. empirically identified an approximate line attractor in hypothalamic neural population recordings that encodes an escalating aggressive state.

2. Van Eenwyk's Archetype-as-Attractor Model

Van Eenwyk's central thesis is that Jungian archetypes function as strange attractors of the psyche. He grounds this claim in the formal properties of chaotic dynamical systems:

2.1 Attractors as Organizing Patterns. Van Eenwyk defines an attractor as “the pattern into which a particular motion will settle.” Archetypes, he argues, are strange attractors: they organize psychological experience into recognizable, recurring patterns—the hero's journey, the great mother, the shadow—without ever producing identical manifestations.

2.2 Sensitive Dependence on Initial Conditions (SDIC). Drawing on Lorenz's butterfly effect, Van Eenwyk explains individual variation in psychological development: small initial perturbations are amplified geometrically over time, so no two trajectories within an archetypal attractor are identical.

2.3 Bifurcation as Transformation. Van Eenwyk describes the tension of opposites in Jungian psychology as an oscillator. When the tension between consciousness and the unconscious reaches a critical threshold, the system bifurcates—order collapses into chaos, and from that chaos, new patterns emerge. This is the “dark night of the soul”—the necessary intermediate state between an old attractor collapsing and a new one stabilizing.

2.4 Fractal Self-Similarity Across Scales. Van Eenwyk draws on

Mandelbrot's fractal geometry. Archetypes exhibit self-similarity across scales: similar themes appear in individual dreams, family dynamics, cultural myths, and religious symbolism. The mandala is a visual representation of a dynamical pattern that recapitulates itself at every level of magnification. It should be noted that "fractal self-similarity" in this context refers to qualitative thematic recurrence across scales, not to the quantitative, measurable property defined in Mandelbrot's fractal geometry.

2.5 Healthy Chaos vs. Pathological Order. Citing physiological research on heart rate variability, Van Eenwyk argues that healthy systems exhibit chaotic flexibility, not rigid homeostasis. A healthy heart has chaotic variability between beats; a rigid, perfectly regular heart rhythm is pathological. Similarly, a healthy psyche exhibits flexible attractors that can shift in response to perturbation. Loss of variability signals pathology.

3. Conceptual Parallels with the Attractor Framework

3.1 Archetypes as Attractors. Van Eenwyk's "strange attractors of the psyche" are descriptively parallel to the attractor framework's concept of an attractor: a persistent configuration toward which the psyche gravitates and around which it organizes, characterized by self-similarity, resistance to perturbation, and sensitive dependence on initial conditions. The framework generalizes this concept beyond the psyche to physical, biological, and social systems.

3.2 Bifurcation as Basin Transition. Van Eenwyk's description of bifurcation—the tension of opposites pushing the system to a critical threshold where chaos erupts and new order emerges—is structurally analogous to the framework's phase

transition between attractor basins. The “dark night of the soul” is the chaotic intermediate state between an old attractor destabilizing and a new one forming. The framework describes this same dynamic in climate tipping points, political realignments, and personal cognitive restructuring.

3.3 Healthy Chaos as Corrective Permeability (κ). Van Eenwyk’s argument that healthy systems exhibit chaotic variability, not rigid order, is structurally analogous to the framework’s corrective permeability (κ). To the extent that κ captures these properties—which has not been formally established—Van Eenwyk’s distinction between healthy flexibility and pathological rigidity is consistent with the framework’s high- κ /low- κ distinction.

The evidential chain for this parallel should be made explicit. Van Eenwyk’s source is physiological research on heart rate variability (HRV)—a finding about cardiac dynamics, not psychological flexibility. Van Eenwyk then extends this to the psyche by analogy. The present paper draws a further analogical connection to κ . The chain is thus three analogical steps removed from its empirical anchor. The parallel is conceptually interesting but rests on layered analogies, not converging evidence.

3.4 Fractal Self-Similarity as Cross-Domain Scaling. Van Eenwyk’s use of Mandelbrot’s fractal geometry—similar patterns recurring at every scale—is structurally analogous to the framework’s claim that attractor dynamics scale across domains. The framework extends this logic beyond the psyche: similar basin dynamics govern biological systems, cardiac electrophysiology, climate systems, political movements, and religious belief. The framework’s claim that these dynamics extend to the fundamental structure of physical reality—including the CVU lattice and conservative persistence structures—remains a theoretical assertion under development and is not independently established. In both Van Eenwyk’s model and the framework, the cross-domain scaling claim is a

qualitative observation of thematic recurrence across scales, not a quantitative demonstration of mathematical fractal structure.

3.5 The Analytic Container as Deliberate Perturbation. Van Eenwyk argues that the therapeutic frame functions to “raise the r value” of the psychological system, pushing it toward the bifurcation point where old attractors destabilize and new ones can emerge. This is structurally analogous to the framework’s concept of deliberate perturbation: the analyst, the self-engineer, or the institutional reformer applies targeted perturbations to nudge a system toward a phase transition, knowing that the intermediate chaos is productive, not pathological.

4. Independence, Shared Lineage, and Evidentiary Weight

Van Eenwyk’s work and the attractor framework were developed entirely independently. Van Eenwyk cites Gleick, Mandelbrot, Lorenz, Feigenbaum, and Jung; the framework draws on Ruelle, Prigogine, Olds and Milner, and N=1 self-engineering. Neither cites the other.

However, the shared upstream intellectual lineage in chaos theory substantially limits the evidential weight of these convergences. The vocabulary of chaos theory—attractor, bifurcation, sensitive dependence, fractal—is sufficiently flexible that almost any persistent, complex human phenomenon can be described in these terms. The convergence of two independent applications of this vocabulary may therefore reflect the generality of the vocabulary rather than a discovery about the phenomena themselves. This is a standing methodological limitation that applies to all framework mapping papers using chaos-theory vocabulary, not only to the

present paper.

Furthermore, Van Eenwyk's model is itself a theoretical analogy, not an empirically validated result. It was published in a psychoanalytic journal and has not been quantitatively tested. This distinguishes it from the framework's mappings onto the SPAR method (which achieved 96% classification accuracy for a disease-causing genetic mutation) and the Nair et al. line attractor (which was empirically identified in neural population recordings). The present mapping demonstrates conceptual consistency within a shared intellectual tradition; it does not carry the evidential weight of convergence with empirically grounded findings.

5. Falsifiability Conditions

The following observations would weaken or invalidate the parallels drawn here:

- **Disconfirming observation 1:** If archetypal patterns were shown to be discrete, non-recurring categorical schemas rather than continuous dynamical attractors with sensitive dependence on initial conditions and fractal organization, the attractor model would fail.
- **Disconfirming observation 2:** If the bifurcation model of psychological transformation were shown to be *indistinguishable* from simpler models (e.g., linear stress-response curves, threshold models without chaotic intermediates), the chaos-theoretic interpretation would not be uniquely supported.
- **Disconfirming observation 3:** If quantitative measures of psychological variability—such as linguistic entropy, narrative complexity, or approximate entropy of behavioral time series—showed *no correlation* with therapeutic outcomes or independently assessed

psychological health ratings, the healthy-chaos/ κ parallel would lose its primary empirical motivation.

Affirmative prediction (long-range): If archetypes function as strange attractors, then therapeutic interventions that successfully transform an individual's relationship to a given archetype should produce measurable shifts in the entropy and complexity of associated psychological content (e.g., dream imagery, narrative patterns, symptom expression). Approximate entropy and sample entropy have been applied to psychological time-series data in existing literature (e.g., Pincus, 1991; Richman & Moorman, 2000) and have been proposed for use in clinical monitoring of mood and behavioral variability. These measures provide a more tractable near-term empirical target than fractal dimension or Lyapunov exponents, which require prior conceptual demonstration that psychological content can be treated as a continuous dynamical time series.

6. Conclusion

Van Eenwyk's 1991 paper and the attractor framework, developed entirely independently, converge on shared structural descriptions: archetypes are strange attractors—dynamical patterns that organize experience, resist perturbation, exhibit sensitive dependence on initial conditions, and transform through bifurcation. Healthy systems exhibit chaotic flexibility (structurally analogous to high κ); pathological systems exhibit rigid order (structurally analogous to low κ).

These convergences are conceptual, not evidential. Both works draw on the same upstream intellectual tradition in chaos theory, and Van Eenwyk's model is itself a theoretical analogy rather than an empirically validated result. The parallels demonstrate consistency within a shared intellectual tradition, not independent corroboration. The framework

remains a self-published, preliminary research program. This mapping is a contribution to its ongoing development, offered with lower evidentiary weight than mappings onto quantitatively validated methods.

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From Strange Attractors to the Attractor Framework: Structural Correspondences and Conceptual Extensions

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Abstract

The attractor framework is a unified naturalistic ontology grounded in the principle that persistence under perturbation is the fundamental mark of reality. This paper traces structural correspondences between the framework and two major scientific achievements of the late twentieth century: the mathematical theory of strange attractors developed by David Ruelle and Floris Takens, and the thermodynamics of dissipative structures developed by Ilya Prigogine. The framework developed its vocabulary and concepts independently over several decades; the correspondences documented here are offered as post-hoc validation, not as evidence of genealogical descent. We show that the framework's core concepts—dissipative attractor, basin, corrective permeability (κ), and invariant reference—are consistent with established nonlinear dynamics and nonequilibrium thermodynamics. The fantasy attractor—a belief system with low corrective permeability—is identified as a psychological analogue of the

strange attractor, governed by structurally analogous but mechanistically distinct dynamics. The paper clarifies which framework claims are grounded in established physics and which are heuristic extensions requiring independent validation. The framework is offered as a research program, not a completed theory.

1. Introduction: Independent Development, Post-Hoc Validation

The attractor framework (Galida, 2026a) is a naturalistic ontology organized around a single diagnostic principle: **persistence under perturbation is the mark of the real**. It divides all persistent structures into conservative persistence structures (the eternal, mindless, invariant skeleton) and dissipative attractors (temporary, entropy-exporting systems that converge toward stable basins). It introduces corrective permeability (κ) as a functional measure of a system's capacity to absorb perturbation and return to its basin. It applies this vocabulary across physics, biology, cognitive science, and social dynamics.

The framework's concepts were developed independently over several decades, through a combination of philosophical inquiry, systems theory, and N=1 self-engineering experiments. They did not derive from the traditions described below in a genealogical sense. However, the structural parallels with established nonlinear dynamics and nonequilibrium thermodynamics are substantial. Documenting these parallels serves three purposes: it demonstrates the framework's consistency with well-validated physical theory; it identifies where the framework extends beyond its precursors; and it clarifies which claims are grounded in established science and which are heuristic extensions requiring independent validation.

Two bodies of twentieth-century science provide particularly strong structural correspondences: David Ruelle and Floris Takens's theory of strange attractors, and Ilya Prigogine's thermodynamics of dissipative structures. This paper maps those correspondences and identifies the points where the framework diverges from or extends beyond its precursors.

2. Ruelle's Strange Attractor: Structural Correspondences

David Ruelle and Floris Takens proposed in 1971 that turbulent fluid motion is governed by a new kind of mathematical object: the strange attractor. Ruelle's 1980 paper "Strange Attractors" defined it with precision and became the canonical introduction for a generation of scientists. Five features of Ruelle's definition correspond to core concepts of the attractor framework. These correspondences are structural, not genealogical, and are offered as a demonstration of consistency with established physics.

2.1 Attracting Set → Basin

Ruelle defined a strange attractor as a bounded set A contained in an open neighborhood U such that every trajectory starting in U eventually converges to A and remains arbitrarily close to it. In the attractor framework, this is the **basin**: the region of state space toward which trajectories converge and from which they resist displacement. Ruelle's quadrilateral ABCD for the Hénon attractor—within which all subsequent iterates remain—is precisely a basin in the framework's sense. The correspondence is straightforward and exact.

2.2 Sensitive Dependence → Corrective Permeability

Ruelle characterized sensitive dependence on initial

conditions by the exponential growth of small errors: $d(X_t, X'_t) \sim d(X_0, X'_0) \cdot a^t$, with $a > 1$ and characteristic exponent $\lambda = \ln a$ (for a standard textbook treatment of Lyapunov exponents and nonlinear dynamics, see Strogatz, 2018). Two initially nearby trajectories diverge rapidly, making long-term prediction impossible.

The attractor framework reframes perturbation response through **corrective permeability** (κ), defined functionally as the capacity of a system to dissipate perturbation energy and return to its basin. The term “permeability” is used in a non-standard, functional sense; it is not intended to carry the dimensional meaning it holds in physics (e.g., Darcy’s law, where permeability has units of area). It was chosen to emphasize the *openness* of an attractor to corrective perturbation—a qualitative property—while recognizing that its quantitative expression is a rate (inverse time). The distinction between the qualitative concept and its quantitative operationalization should be kept in view throughout.

κ and λ capture different aspects of dynamical resilience. λ measures the rate of *divergence* of neighboring trajectories; κ measures the rate of *convergence* of a perturbed system back to equilibrium. A system can have high λ (chaotic sensitivity) and simultaneously high κ (rapid damping). This distinction between divergence rate and recovery rate extends the analytical vocabulary in a direction Ruelle did not pursue, and represents one of the framework’s conceptual contributions.

2.3 Dissipative Condition → Dissipative Attractor

Ruelle emphasized that strange attractors occur only in dissipative systems—those in which ordered energy is converted to heat and exported as entropy (what Ruelle called “noble forms of energy”). Conservative systems preserve phase-space volumes and do not produce attractors. The universe as a whole

is conservative; strange attractors exist only in subsystems.

This maps directly onto the attractor framework's distinction between the **eternal conservative skeleton** and the **transient dissipative dance**. The six metronomes—electron, proton, three neutrino mass states, and CVU lattice—are conservative persistence structures. They do not decay, export no entropy, and are not attractors. Living bodies, minds, societies, and climate systems are dissipative attractors, continuously exporting entropy and navigating constraint fields. Ruelle's dissipative condition is the physical foundation of this central ontological partition.

2.4 Discrete and Continuous Dynamics → The Two Metronomes

Ruelle presented both discrete-time maps (Hénon) and continuous-time flows (Lorenz, 1963). In both cases, strange attractors emerge. The attractor framework identifies invariant references—**metronomes**—that anchor dissipative dynamics. Positional metronomes (the center of mass of a gas cloud, the fixed point of a difference equation) and frequency metronomes (orbital periods, the characteristic exponent λ) provide the invariant skeleton against which the transient dance is measured. Ruelle's maps and flows contain these invariants implicitly; the framework makes them explicit.

2.5 Indecomposability → Unified Attractor (Partial Correspondence)

Ruelle required that a strange attractor not be decomposable into two separate attractors. This is a strong mathematical condition. The attractor framework inherits the spirit of this—dissipative attractors are treated as unified, coherent basins—but the correspondence is only partial. The framework's conscious body thesis (Galida, 2026g) explicitly recognizes *multiple* candidate attractors within a single organism (the enteric nervous system, the cardiac nervous system). These are coupled but semi-autonomous basins, in

tension with Ruelle's indecomposability condition. The framework thus extends the attractor concept in a direction Ruelle's original definition did not anticipate. This divergence is noted as a feature of the framework, not a failure of correspondence.

3. Prigogine's Dissipative Structures: The Thermodynamic Parallel

While Ruelle provided the mathematical prototype of the strange attractor, Ilya Prigogine provided the thermodynamic foundation for the broader class of dissipative systems. Prigogine's Nobel-winning work (Prigogine, 1980, 1984) demonstrated that systems maintained far from thermodynamic equilibrium spontaneously self-organize into coherent, ordered structures—dissipative structures—that persist only as long as they are sustained by energy and matter flows.

The structural parallels between Prigogine's dissipative structures and the attractor framework's dissipative attractor are substantial. Both describe systems maintained far from equilibrium by continuous energy throughput. Both recognize that dissipation is not merely a degradation of order but a condition for the emergence of order. Both extend beyond physics into chemical, biological, and ecological systems. The Belousov-Zhabotinsky reaction, biochemical oscillations, and ecosystem dynamics are Prigoginean dissipative structures; they are also dissipative attractors in the framework's vocabulary. Kauffman's (1993) work on self-organization and selection in evolution provides an independent biological parallel, reinforcing the consistency of the attractor framework with established complexity theory.

The framework's applications to living bodies, minds, and societies are consistent with the Prigoginean tradition. This

consistency was recognized retrospectively; the framework's concepts were not derived from Prigogine. The parallels are offered as evidence that the framework's biological and social extensions are grounded in established thermodynamic principles, not as evidence of intellectual descent.

The framework thus finds post-hoc validation in two complementary scientific traditions: the mathematical theory of strange attractors (Ruelle, Takens, Lorenz) for the concepts of basin, sensitive dependence, and chaotic dynamics; and the thermodynamics of dissipative structures (Prigogine) for the concept of entropy-exporting, self-organizing systems far from equilibrium. Neither tradition alone is sufficient; together they provide the physical foundations with which the framework is consistent.

4. The Attractor Framework: Extensions Beyond the Physical Prototypes

The attractor framework extends the concepts of basin, dissipation, and perturbation response beyond physical and biological systems into cognitive and social domains. These extensions are heuristic hypotheses, not established results. They are offered as candidate applications requiring independent validation.

4.1 From Strange to Dissipative: A Broadened Scope

Ruelle's strange attractor and Prigogine's dissipative structure are both special cases of the framework's broader category: the **dissipative attractor**—any system that exports entropy while converging toward a stable basin. The framework does not require the attractor to be “strange” (to exhibit sensitive dependence). Fixed-point attractors, periodic attractors, and quasiperiodic attractors are all dissipative

attractors under this definition. The framework's scope is deliberately broad, encompassing any persistent, entropy-exporting system regardless of its internal dynamical complexity.

4.2 The Fantasy Attractor: A Structural Analogy

The framework's most significant extension beyond Ruelle and Prigogine is the concept of the **fantasy attractor**: a belief system with low corrective permeability that resists updating under contradictory evidence (Galida, 2026c, 2026d, 2026e). The dopamine covenant—the neurochemical reinforcement of certainty through mesolimbic reward—provides a psychological mechanism that is structurally analogous to, but not identical with, physical dissipation.

The analogy is as follows. A physical dissipative attractor exports entropy via radiation or heat, returning to its basin after perturbation. In the physical case, "basin depth" is formally defined through the geometry of the attractor in phase space, measurable in principle from the equations of motion. A cognitive attractor neutralizes perturbation via reframing, also preserving its basin—but here "basin depth" is a functional analogy, not a formal measure. Both systems respond to destabilizing perturbations by restoring their pre-perturbation state. The analogy holds at the functional level.

However, the mechanisms differ in important respects. Physical dissipation involves the export of thermodynamic entropy from a subsystem to its environment. Dopamine reinforcement is a *feedback amplification* mechanism—it strengthens the neural pathways associated with the belief, making them more salient and resistant to competition. It does not export entropy in the thermodynamic sense. The structural analogy—a system responding to perturbation by restoring its basin—holds at the functional level, but the physical substrates and mechanisms are distinct. The framework does not claim identity; it claims functional parallelism.

The assignment of $\kappa \approx 0$ to fantasy attractors is qualitative and provisional. Unlike Ruelle's λ , which is computable from the equations of motion, κ for belief systems currently lacks an operationalized measurement procedure. The framework's applications to political and religious belief systems (Galida, 2026d, 2026e) are heuristic extensions, offered as diagnostic hypotheses. Independent validation through operationalized κ remains a task for future empirical work.

4.3 Candidate Applications Across Domains

The framework's cross-domain applications are candidate hypotheses, not established results. Each requires independent validation. The following are offered as illustrations of the framework's heuristic reach, with the caveat that formal operationalization is pending.

- **Climate dynamics** (Galida, 2026b): The Earth's climate is a dissipative attractor with multiple basins, tipping points, and corrective feedbacks. The claim that linear warming models constitute a fantasy attractor is a diagnosis of the modeling community's resistance to nonlinear dynamics, not a claim about the physical climate system itself. The two must be distinguished: the climate is a physical attractor; the *belief* that it behaves linearly is a cognitive one.
- **Political ideology** (Galida, 2026d): The $\kappa \approx 0$ assignment for the MAGA movement is a qualitative diagnostic based on observable indicators (electoral loss response, legal defeat response, internal dissent tolerance). It is not a measurement in Ruelle's sense. The assignment is offered as a hypothesis to be tested against alternative interpretations.
- **Apocalyptic convergence** (Galida, 2026e): The claim that three Abrahamic basins have phase-locked into a meta-attractor uses "phase-locked" in an extended, qualitative sense. The formal demonstration of phase-

locking requires identifying coupling constants and frequency ratios, which have not been established. The claim is offered as a structural diagnosis, not a dynamical proof.

- **Organ-level consciousness** (Galida, 2026g): The identification of candidate organ-level minds as dissipative attractors applies the framework's criteria directly to biological subsystems. The *C. elegans* threshold provides a benchmark; the independent operationalization of κ for these subsystems awaits experimental protocols.

5. The Metronome: An Innovation Without Direct Precedent

One concept in the attractor framework has no direct analogue in either Ruelle or Prigogine: the **metronome**—the invariant reference around which dissipative dynamics organize. In the gas cloud paper (Galida, 2026f), the center of mass and the orbital period were identified as positional and frequency metronomes, respectively. These invariants are not attractors; they are the fixed skeleton against which the transient dance is measured.

The six metronomes of the eternal skeleton—the electron, the proton, the three neutrino mass states, and the CVU lattice—are the ultimate invariants, defining time through their fixed, unchanging frequencies. Ruelle's maps and flows contain invariants (fixed points, conserved quantities, characteristic exponents), but he did not distinguish them as a separate ontological category. Prigogine's dissipative structures also operate against a background of invariant constraints. The attractor framework's explicit separation of the invariant skeleton from the dissipative dance is a genuine

conceptual contribution, not present in either precursor tradition.

6. Conclusion: A Coherent Vocabulary, Conditionally Applied

The attractor framework is structurally consistent with the mathematical physics of strange attractors and the thermodynamics of dissipative structures. Its core concepts—dissipative attractor, basin, corrective permeability, and invariant reference—map cleanly onto established physical constructs. Its extensions into cognitive and social domains are heuristic hypotheses, not established results.

The framework developed its vocabulary independently. The correspondences documented here are offered as post-hoc validation: the framework speaks the language of established nonlinear dynamics and nonequilibrium thermodynamics, and where it departs from these precursors it does so explicitly, with acknowledgment of the remaining gaps between analogy and operationalization. Future work must close those gaps through quantitative measurement of κ , formal modeling of coupling dynamics, and empirical testing of the framework's diagnostic claims.

The framework is offered as a research program, not a completed theory.

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“For independent neuroscientific corroboration of the attractor dynamics described here, see A Preliminary Mapping Between Ring Attractor Dynamics and the Attractor Framework.” <https://www.sciencedirect.com/science/article/pii/S2405844024114892>

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