Project Map and Intellectual Architecture
of the Flyxion Research Program

Working Draft

The Admissibility Program: From Practice and Intuition to Cosmology, Cognition, Computation, and Civilisation

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Abstract

This document maps the intellectual architecture of the Flyxion research program as it stands at the time of writing. The program spans cosmological field theory, formal ontology, cognitive architecture, memory theory, process-native computation, and civilisational geometry. Despite their apparent diversity, these projects share a common organising principle: the claim that every domain of inquiry is fundamentally concerned with the maintenance, loss, restoration, and navigation of *admissible transformations*. This organising principle is called the Admissibility Program. The document is organised in three parts. Part I traces the origins of the program from direct practical engagement with construction, repair, and physical restoration through the convergence of core intuitions into formal frameworks. Part II presents the current architecture as a five-layer structure: practice and embodied knowledge, core intuitions, theoretical frameworks, formalization programs, and domain applications. Part III surveys the major open problems whose resolution would most significantly advance the program. An appendix provides a framework-by-framework reference guide following a common template.

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Part I Origins and Convergence

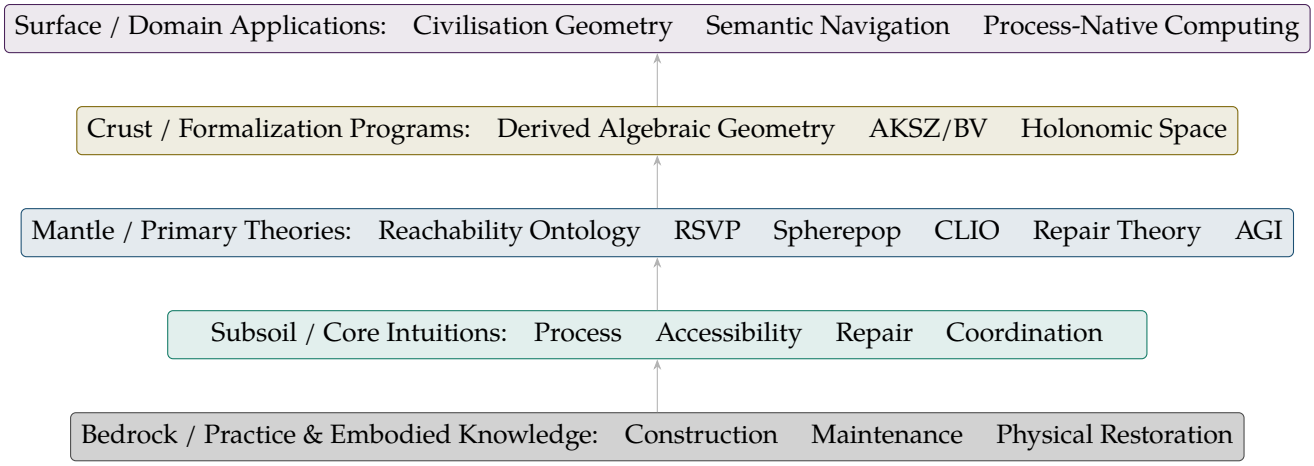
1. Practice as the Ground Floor

The oldest and most underacknowledged layer of the Flyxion research program is not theoretical. It is practical. Over many years, direct engagement with construction, electrical work, plumbing, property rehabilitation, and custom home building produced a body of embodied knowledge about systems that cannot be rebuilt from scratch and must instead be restored while maintaining continuity of function.

This matters for the intellectual history of the program because the distinctive character of the theoretical work is difficult to explain without it. The decision to treat repair as more fundamental than construction does not feel like an abstraction invented in isolation. It reads as a formalization of intuitions accumulated from repeatedly encountering physical systems in which replacement is not an option and continuity must be actively maintained despite degradation. Similarly, the insistence on reachability over location, on process over object, and on accessibility over distance all have natural analogues in the practical experience of working within constraint-laden systems where the question is never *what is the ideal structure?* but always *what transformations are actually available from here?*

The connection between practice and theory is not merely biographical. It has structural consequences for the program. A theoretical framework that began from armchair reflection about physical systems might have taken objects, positions, and states as its primitive concepts. A framework that grew from sustained practical engagement with repair, restoration, and constrained transformation is more likely to take processes, trajectories, and accessibility as its primitives — because those are the concepts that do actual work in the practice.

This suggests that the correct genealogy of the Admissibility Program is best understood not as a flat stack but as a geological stratigraphy — each layer deposited over the one below, with the deepest layers conditioning everything above them.



This layering also resolves an apparent paradox in the corpus: why a body of work ostensibly concerned with cosmology, cognition, and computation keeps returning to the vocabulary of maintenance, preservation, and repair. The vocabulary is not metaphorical. It is originary.

2. The Phase Before the Map

Reality is Reachability. Keep the branches open.

Every large research program passes through a phase in which one framework acts as a universal attractor. Questions from unrelated domains get drawn toward it, reformulated in its vocabulary, and answered by extending its machinery. During the earliest documented phase of the Flyxion program, that attractor was the Relativistic Scalar-Vector Plenum, or RSVP.

During this period, RSVP was not merely one theory among several. It was the lens through which gravity, entropy, structure formation, cosmological evolution, consciousness, and institutional behaviour were all being re-examined simultaneously. The intellectual portfolio of that period reflects this: the formalization program pursued derived algebraic geometry, AKSZ and Batalin-Vilkovisky quantization, shifted symplectic structures, and derived sigma models, all in the service of putting RSVP on rigorous mathematical footing. The RSVP Field Simulator evolved

from earlier continental-drift and biomass simulations into a genuine field-theoretic environment. A thread extending RSVP into consciousness dynamics asked what admissibility-field concepts implied about cognition and subjective experience.

That early period raised the question: *If RSVP is correct, what mathematical structures are required to express it rigorously?*

The question was productive. But a second, deeper question gradually emerged alongside it, one that was not narrowly about RSVP at all: *What is the architecture of admissibility across physics, cognition, memory, computation, repair, and civilisation?*

The shift from the first question to the second marks the transition that this document is intended to record. The first question is largely a physics question and asks for equations. The second is a systems question and asks for relationships among frameworks. The transition did not abandon the earlier work; RSVP formalization remains an open program. But the center of gravity migrated from a single theory to a broader set of interlocking frameworks organised around a common underlying concept.

3. Four Recurring Intuitions

Surveying the corpus, the intellectual history is better described as a convergence of recurring intuitions than as a strict genealogy of derived results. Several of the major frameworks appear to have crystallised independently before their mutual dependencies became visible.

The first intuition is process over object. Across cosmology, cognition, language, and computation, the early papers consistently resist the assumption that the fundamental constituents of a domain are discrete objects. Trajectories, flows, relaxations, collapses, and activations appear as more primitive than the stable entities they produce.

The second intuition is accessibility over location. Spatial and semantic proximity are repeatedly set aside in favour of questions about what states a system can reach. Metric distance is treated as derived; reachability is treated as more fundamental. This intuition appears in cosmological work on admissibility regions, in memory theory as retrieval thresholds, in institutional analysis as fiscal reachability, and in search theory as preference fields on semantic manifolds.

The third intuition is persistence over construction. Stable structures are more

often explained as the outcome of active maintenance than as the consequence of initial assembly. Repair, restoration, and the preservation of admissible states are repeatedly invoked to explain why structures endure rather than how they were first built.

The fourth intuition is coordination over centralised control. Distributed systems across brains, institutions, antennas, and ecosystems are explained by reference to how components synchronise their local constraints rather than how a global controller directs them.

Each major framework in the program can be understood as a rigorous development of one or more of these four intuitions applied to a particular domain. The Reachability Ontology articulates them philosophically. RSVP formalises the first and second in a field-theoretic language. Spherepop develops the first in an event-theoretic language. Repair Theory develops the third as an independent claim. Coordination Geometry develops the fourth empirically and mathematically.

4. Precursor Works and Recovered Threads

Comparison across several project inventories from different periods reveals a number of works that later summaries omitted but which deserve recognition as early statements of the broader program.

Persistent Anomalies and the Geometry of Ontology Revision now appears to be one of the earliest explicit statements of the admissibility perspective. Its framework for distinguishing minor errors from fundamental structural failures in data models through topological obstructions and repair theory anticipates both Repair Theory and CLIO in significant ways. It also establishes the vocabulary of obstruction that later appears in the sheaf-theoretic strand of TARTAN. This monograph should be treated as a precursor text rather than a peripheral application.

Holonomic Space: Admissibility and Reconstruction represents a significant formalization effort that sits between RSVP and the derived-geometry program. Its focus on variational dynamics, sheaf theory, and observational programs for modelling cosmology and measurement through local recursive persistence gives it a character distinct from both the physical RSVP papers and the purely mathematical formalization work. It deserves recognition as an independent formalization program alongside derived algebraic geometry and AKSZ/BV quantization.

The Geometry of Rewiring: Ecological Networks, Admissible Trajectories, and the Conservation of Transformability was one of the earliest successful applications of admissibility thinking outside cosmology and cognition. Its reinterpretation of ecological resilience as the preservation of navigable future paths demonstrates that the admissibility framework was already capable of domain transfer at an early stage.

The Stone Piano Hypothesis, which investigates whether 176,500-year-old Neanderthal structures in Bruniquel Cave functioned as intentional lithophones, does not fit neatly into the main dependency graph. It is a domain investigation in archaeological acoustics. Its presence in the corpus is a reminder that the program has always maintained peripheral research interests that are intellectually motivated without being theoretically derivative.

Calculus as the Geometry of Relationship and Controlled Change belongs to the pedagogical layer. Its reframing of calculus as a geometric language for transformation expresses the same core intuitions as the larger program and may function as one of its most accessible entry points.

One thread deserves specific attention because its transformation is illustrative of the broader pattern. RSVP Consciousness Dynamics began as a direct extension of the scalar-vector plenum framework into the theory of cognition. Thermodynamic gradients, information flows, and admissibility measures were being used to construct a theory of subjective experience grounded in field dynamics.

That program did not produce a standalone pillar in the current architecture. Instead, its concerns appear to have been distributed across several later frameworks. Questions about how cognitive systems project and compress their experienced landscape migrated into CLIO. Questions about the formation, persistence, and collapse of mental structures migrated into Spherepop. Questions about memory retrieval and reactivation migrated into Preservation/Ecphory. Questions about how neural systems coordinate migrated into Coordination Geometry. The integration of these answers into a full cognitive architecture became the project now known as HYDRA.

The lesson the transition illustrates is one that recurs throughout the program's history. What appears initially as an extension of a single framework often turns out to be a question requiring coordination across multiple frameworks. The eventual response to that insight was structural: the development of integrative frameworks capable of drawing simultaneously on primary theories.

5. The Wider Speculative Corpus

A project inventory from April 2025 reveals a substantially wider range of work than the dependency graph of the core Admissibility Program suggests. That inventory lists approximately one hundred active projects spanning cognitive systems, speculative physics, environmental engineering, civilisation-scale simulation, philosophy of language, hardware prototypes, governance theory, music, and cultural artefacts. Most of these do not appear in the main architecture and are not derived from the primary frameworks in any straightforward sense.

This requires an honest accounting of what the project map is and is not doing. The map presented in Part II describes the *theoretical core*: the frameworks that repeatedly generate new concepts, formal structures, and research questions recurrent across the corpus. That core is real, and the dependency relationships within it are genuine. But it accounts for perhaps a third of the intellectual output by volume. The remaining work consists of speculative projects that may be loosely inspired by the core intuitions without being formally derived from them.

Several examples illustrate the range. Within cognitive systems, projects such as Aspect Relegation Theory, the Inforganic Codex, the Trodden Path Mind, Semantic Ladle Theory, the Substrate Independent Thinking Hypothesis, and Geometric Bayesianism with Sparse Heuristics constitute substantial speculative frameworks in their own right. Their relationship to the Admissibility Program is one of family resemblance rather than derivation: they share the program's preference for process, trajectory, and constraint, but have not been formally integrated into the dependency graph.

Within speculative physics, projects including Crystal Plenum Theory, the 5D Ising Synchronization Model, the Neutrino Fossil Registry, and Universe-as-Sponge Cosmology extend or contest the RSVP framework from various directions. Lamphron and Lamphrodyne States, which name specific relaxation phenomena within RSVP, are effectively internal subdivisions of the primary theory rather than independent alternatives.

Within environmental and terraforming systems, the Cyclex Climate Stabilisation Architecture, Volsorial Pediments, Gravitational Batteries, and Orthodromic Rivers constitute a body of speculative infrastructure engineering whose central concern — what transformations are admissible for a constrained planetary environment under climate pressure — is structurally continuous with the core program even

though the technical content is primarily engineering rather than formal theory.

Within hardware prototypes and cultural artefacts, work such as the Ontological Dishwasher, Mechatronic Diapers, and Recursive Cloakproof Chain Generator reads as speculative design objects, satirical interventions, or thought experiments in material form. They belong to what might be called the *mythopoetic layer*: work that enacts the program's commitments in unexpected registers rather than formalising them.

The correct response to this breadth is not to expand the dependency graph until it contains everything. That would destroy the graph's utility as a map. Instead, the architecture should be understood as having a dense theoretical core surrounded by a larger halo of speculative, satirical, pedagogical, and mythopoetic work that maintains a family relationship with the core without being formally derivable from it. The core provides the vocabulary and the commitments; the halo explores, tests, parodies, and extends them in registers that formal theory cannot reach.

Part II The Current Architecture

6. Overview: A Five-Layer Architecture

The current architecture is best described as a five-layer dependency structure in which each layer draws on the one below it while generating new objects, questions, and methods that feed upward.

The first layer is practice: the embodied knowledge of construction, repair, restoration, and constrained physical transformation that generated the program's foundational intuitions.

The second layer is the four core intuitions that were extracted from that practice and that run consistently through all subsequent theoretical work: process over object, accessibility over location, repair over construction, and continuity over replacement.

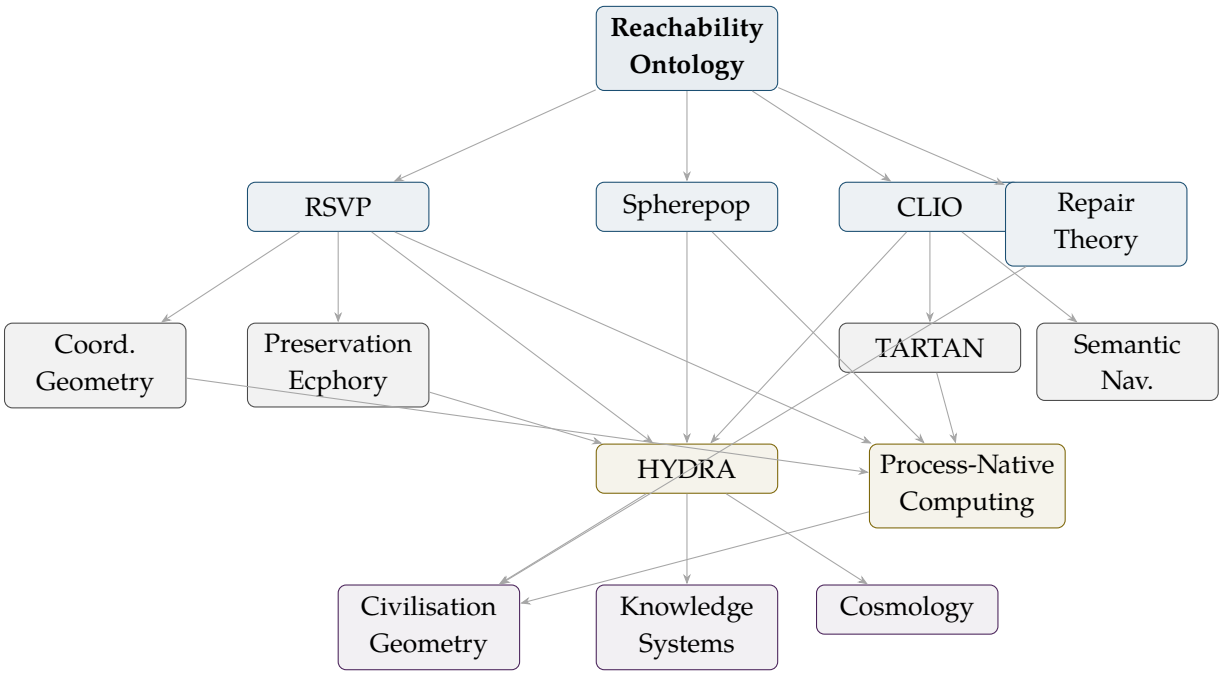
The third layer is the theoretical frameworks proper. Within this layer the architecture is not a tree but a dependency graph, since several frameworks are junction nodes drawing on more than one upstream theory. The foundational ontology sits at the base of this layer; the primary theories develop it; the secondary formalisms

extend and connect the primary theories; and the integrative frameworks synthesise multiple inputs simultaneously.

The fourth layer is the formalization programs: mathematical and computational efforts to express the theoretical frameworks with greater rigour. These include the derived algebraic geometry formalization of RSVP, the AKSZ/BV quantization program, the Holonomic Space program, the RSVP Field Simulator, and related tools.

The fifth layer is domain applications: instantiations of the theoretical frameworks in specific empirical and practical domains including cognition, search, computing, civilisation, ecology, and cosmology.

The following diagram illustrates the theoretical sub-graph within the third layer, which remains the most densely connected part of the architecture. Dependencies run upward.



The following sections describe each layer in turn. A full framework-by-framework reference following a standard template is provided in the Appendix.

7. Layer One: Foundational Ontology

7.1. Reachability Ontology

Reachability Ontology is the philosophical foundation of the entire program. It does not make formal mathematical claims; instead it articulates the ontological commitments on which all the formal frameworks depend.

The central claim is that reality is not composed of objects. It is composed of admissible transformations, of reachable trajectories, of accessible futures. Objects, entities, and stable structures are understood as frozen processes: trajectories that have become locally stationary, or accessibility regions that have persisted long enough to acquire the appearance of substance.

This inversion has consequences at every level of the program. It means that the primary question in any domain is not *what exists here?* but *what can be reached from here?* Spatial proximity is replaced by reachability distance. Identity is replaced by trajectory continuity. Persistence is replaced by maintained accessibility. Construction is replaced by repair.

Reachability Ontology did not emerge as a single paper but as a convergence of positions expressed across many works. The essays *Frozen Processes*, *From Preservation to Reachability*, *The Geometry of Reachable Futures*, *The Secret Life of Nouns*, and *Verbs Masquerading as Nouns* collectively articulate its core commitments.

8. Layer Two: Primary Theories

The four primary theories each develop a major aspect of Reachability Ontology with rigorous conceptual and, in several cases, mathematical machinery. They are best understood as complementary rather than competing. RSVP and CLIO answer different questions about the same underlying landscape. Spherepop and RSVP are genuinely distinct in their fundamental objects and operations, which is why they sit as siblings rather than in a parent-child relationship.

One node in this layer deserves a note of caution. CLIO is classified as a primary theory alongside RSVP, Spherepop, and Repair Theory, but it may occupy an unusual position. Its central claim — that every description is a projection that loses information — is not merely a claim about representation. It is arguably an epistemological or even ontological claim of comparable depth to Reachability Ontology's

claims about trajectories and accessibility. There is a live question about whether CLIO is a sibling of the other primary theories or whether it should be elevated to a co-foundational role alongside Reachability Ontology, with all observer-dependent frameworks descending from it. The current placement reflects the working state of the architecture rather than a settled resolution of that question.

8.1. RSVP — Relativistic Scalar-Vector Plenum

RSVP is the field-theoretic primary theory. It describes reality in terms of a triple of fields: a scalar concentration field Φ, a vector flow field $\mathbf{v}$, and an entropy density field S. Together these define an admissibility landscape through which processes travel, relax, and interact.

The RSVP field triple replaces the object-position ontology of classical physics with an ontology of gradients, flows, and reachability regions. Gravity is reinterpreted as descent through admissibility space. Cosmological smoothing is explained through lamphrodyne relaxation rather than inflation. Structure formation emerges from constraint erosion and differential entropy descent.

RSVP is also the framework with the most developed associated formalization program. Derived algebraic geometry, AKSZ and BV quantization, shifted symplectic structures, and derived sigma model techniques have all been invoked to give RSVP rigorous mathematical expression. These formalization programs remain open and are detailed separately in Section 11.

Major works include *The Admissibility Field*, *Axioms for a Falling Universe*, *Three Smoothing Mechanisms in Early Cosmology*, and *Constraint-Compatible Continuity Binding*.

8.2. CLIO — Constraint-Leveraged Inference and Optimisation

Where RSVP asks about the structure of the underlying possibility space, CLIO asks what happens when a finite observer, agent, model, institution, or measurement process encounters that space and projects it into a lower-dimensional representation. The two questions are complementary and neither subsumes the other.

A useful way to understand the epistemic situation CLIO addresses is what might be called the Noun Fallacy: throughout history, dynamic processes are frozen into snapshots by epistemic compression, and those snapshots are mistaken for the

actual territory. Reality is a landscape of constant transformations; compression freezes the dynamic flow; and we then take the label for the reality. CLIO is the theory of that compression — of what must be discarded, what can be preserved, and what it would mean for an observer to act ethically within those constraints.

CLIO's central claim is that abstraction is reduction: specifically, the completion of necessary inner computation so that outer complexity can grow without conflict. This thesis is developed formally through several converging lines of argument. In lambda calculus, beta reduction eliminates internal dependencies until a stable surface value emerges that can compose without interference. Reynolds's parametricity theorem shows that polymorphic functions cannot inspect their type arguments, forcing invariance through reduction. In category theory, objects have no internal structure accessible to the morphisms of the category: abstraction is the collapse of all distinctions not preserved by composition. In Null Convention Logic, signal stabilisation is the moment of abstraction — ongoing computation is treated as a temporary whole until its parts collapse into determinate values. The Curry-Howard correspondence identifies cut elimination with program execution, making proof normalisation another instance of the same pattern.

These formally distinct processes share one invariant: inner complexity is resolved to allow coherent outer composition. The quality of an abstraction is therefore measured not by how much it simplifies but by which structural invariants it preserves. CLIO distinguishes two modes. Ethical abstraction acknowledges its own incompleteness, signals omitted complexity, preserves admissibility, and allows the underlying reality to veto the simplification. Extraction is the pathological form: treating the projection as the territory, discarding admissibility-critical constraints, and confusing efficiency with truth. This distinction connects CLIO directly to Repair Theory — extraction is what occurs when a CLIO projection is mistaken for the territory and admissibility is destroyed; repair is the restoration of what extraction removed.

Major works include *Hidden Manifolds*, *Abstraction as Reduction*, and relevant sections of *The Admissibility Field*.

8.3. Spherepop

Spherepop is the event-theoretic primary theory. It describes the formation, collapse, refusal, binding, and persistence of local structures. Its fundamental objects are not fields or gradients but events: formation events, collapse events, binding events,

refusal events, and the residues those events leave behind.

The deepest distinction between Spherepop and RSVP is ontological. RSVP is field-theoretic and describes reality through continuous variation across extended regions. Spherepop is event-theoretic and describes reality through discrete transitions that alter the set of accessible futures. The two frameworks communicate: RSVP fields provide the landscape within which Spherepop events occur, and Spherepop events may be interpretable as singularities or phase transitions in RSVP fields. But the relationship between them is one of the most important open problems in the program, and neither framework straightforwardly reduces to the other.

A person who encountered Spherepop first could reconstruct many of its core claims without ever encountering RSVP. The reverse is equally true. This independence is why they sit as siblings at the primary theory layer.

Beyond the core event primitives, Spherepop has developed several subsidiary positions. The refusal event is not a failure mode but an autonomous primitive with its own formal properties. Irreversibility is structural: certain collapse events cannot be undone, and this irreversibility is a feature of the system rather than a limitation of the observer. Time is forkable: a system can maintain multiple diverging execution histories simultaneously, with merge and rebase operations governing how those histories reconcile. Identity is constituted by event history rather than by substance or persistence of parts. Scope is geometric: the boundary of a bubble is not a syntactic convenience but a topological feature with consequences for what can be reached from inside it.

What distinguishes Spherepop from the other primary theories is the degree to which its theoretical claims have been made computationally executable and mathematically precise. The paper *Structured Irreversibility* establishes that the Spherepop category **SP** is initial in the category of entropy-decreasing symmetric monoidal categories (**EDSMC**), and constructs a functor $F : \mathbf{SP} \to \mathbf{RSVP}$ that maps Spherepop's discrete commitment dynamics into RSVP's continuous field dynamics with explicit entropy-slack witnesses. This resolves the previously open question about the RSVP-Spherepop interface: **SP** is the source of irreversible constraint accumulation and **RSVP** is the target of smooth coherence redistribution, connected by a structure-preserving map respecting entropy monotonicity.

Spherepop has also been shown to be computationally universal. The full Spherepop Calculus (SPC) subsumes simply-typed lambda calculus, Turing machines, boolean circuits, neural feedforward dynamics, and probabilistic lambda calculus

via compositional translations. Each classical reduction step is interpretable as a discrete geodesic in the RSVP-Ising energy landscape, connecting computation to physics at the level of individual steps rather than only at the architectural level.

The *Joy of Spherepop* introduced the meld operator: a constrained quotient over parallel histories that resolves distinctions incompatible across them without reducing optionality in the same way as pop. Meld is governed by explicit semantic merge policies separating what is synthesised from how synthesis proceeds. This adds a sixth primitive to the canonical set alongside pop, refuse, bind, and collapse.

The *Autonomy of Refusal* develops the thesis that refusal is not a failure mode but an autonomous primitive with formal properties distinguishing it from preference change, negation, or multi-objective optimisation. A non-representability theorem proves that refusal cannot be represented as utility maximisation over a fixed state-action-utility triple without encoding event-history as a primitive state variable. Governance of scalable systems is reconceived as exogenous refusal: the reintroduction of suspension capacity from outside the system.

Active Geodesic Inference establishes Spherepop as the natural execution substrate for intelligence understood as maintenance of low-action admissible histories, connecting it formally to HYDRA and to RSVP through the Gibbs bond selection and synchronisation axioms.

The repository includes a full compiler in C with lexer, parser, runtime, bytecode virtual machine, geometry subsystem, and a sheaf semantics layer; multi-language prototypes in Python, Haskell, Racket, and Forth; a shell-based event log system with overlay, fork, merge, rebase, and replay operations; and a visualizer. Example programs in the compiler repository execute claims from CLIO, Preservation/Ecphory, and Semantic Navigation directly in Spherepop syntax, establishing it as a working executable language for expressing and testing claims from the broader program. The Spherepop OS document sketches how an operating system organised entirely around Spherepop event primitives would behave, anticipating the AyeOS project in the adjacent ecosystem.

The major theoretical works include *Spherepop: Geometry, Cognition, and the Transparency of Computation* alongside a substantial essay corpus detailed in the Research Corpus section.

8.4. Repair Theory

Repair Theory begins with an inversion: rather than explaining persistence as a consequence of initial construction, it treats repair as the more fundamental category. Persistence is explained by active maintenance of admissible states. Construction, on this view, is explained by repair relations rather than the reverse.

The framework defines a repair relation, specifies conditions for restoration geometry and repair latitude, and connects these to civilisational, biological, linguistic, and computational examples. Its central claim is that many apparently disparate domains — organism maintenance, institutional resilience, document survival, knowledge accessibility — share a common structure that is invisible when persistence is taken for granted and becomes visible only when failure and repair are placed at the center.

Repair Theory began as an application of RSVP and Reachability Ontology but has increasingly developed independent claims. The moment a repair relation is defined as a primitive rather than derived concept, the theory acquires a status comparable to the other primary frameworks.

The major work is *Repair as a Fundamental Category*.

9. Layer Three: Secondary Formalisms

The secondary formalisms are mathematical and operational frameworks that extend, connect, or operationalise the primary theories. They make stronger formal claims than the primary theories in specific domains, but their foundational commitments are inherited rather than independent.

9.1. TARTAN

TARTAN addresses the problem of constraint preservation under recursive decomposition. When a complex system is analysed by breaking it into components, the constraints that make the original system coherent are at risk of being lost or violated at the level of the components. TARTAN provides a tiling framework that ensures structural continuity across scales.

It connects most directly to CLIO on the question of how projected representations can preserve the constraints of the systems they project, and to RSVP on the

question of how admissibility regions behave under decomposition. It frequently appears as infrastructure in contexts where multi-scale reasoning is required.

9.2. Coordination Geometry

Coordination Geometry began as an application but has grown into a hybrid theory occupying the boundary between formal mathematics and empirical science. It generalises synchronisation phenomena across neural systems, distributed computation, antenna arrays, ecological networks, and collective cognition.

Its connection to Kuramoto synchronisation, neuromorphic hardware, and empirical biology gives it an empirical grounding the other frameworks largely lack. At the same time, its claim that coupled systems discover and maintain admissible coordination regions is a formal contribution that extends RSVP dynamics into the domain of collective behaviour.

The major work is *Coordination Geometry as a General Principle of Adaptive Computation*.

9.3. Active Geodesic Inference

Active Geodesic Inference (AGI) is classified here as a fifth primary theory, elevated from secondary formalism status. The basis for this elevation is that it makes its own ontological claims — about the nature of intelligence, the structure of semantic dynamics, and the relationship between action minimisation and admissibility — that are independently statable, formally precise, and not derivable from any single upstream framework. It recovers the RSVP Hamiltonian from semantic axioms rather than importing it, and it introduces objects (semantic isomers, geodesic width, action stability) that do not appear in any other framework.

AGI defines intelligence formally as the capacity of a system to remain within a family of dynamically admissible, low-action histories by actively reshaping its configuration space's geometry. This definition is domain-invariant: it applies equally to reasoning within an episode, learning within a lifetime, and evolution across generations.

The framework rests on six axioms. Stationarity asserts that semantic dynamics are governed by an extremal principle selecting paths geodesically in a metric induced by a Lagrangian density. Entropy monotonicity asserts a thermodynamic ar-

row in semantics, encoding irreversibility at the operational level. Gibbs bond selection governs admissible interactions between semantic loci through an energy-based distribution, formalising attention as energetic bond selection. Multi-component synchronisation asserts that coherent reasoning is a synchronisation phenomenon rather than scalar optimisation. Isomeric multiplicity asserts that the variational problem admits multiple distinct stationary histories with equivalent external observables — semantic isomers — explaining why averaging over internally distinct reasoning trajectories degrades performance. The sixth axiom ties these together as a history-indexed, variationally governed, thermodynamically oriented, Gibbs-bonded, synchronisation-coupled dynamics.

The framework recovers the RSVP Hamiltonian as a concrete realization of the second axiom. Spherepop provides the execution calculus: its irreversible, scope-based semantics enforce history sensitivity and prevent incoherent superposition by construction, making it a natural substrate for active geodesic inference. HYDRA's cognitive architecture is the integrative realisation.

Active Geodesic Inference generates empirically testable predictions including: geodesic width predicts robust generalisation; reasoning failures manifest as phase transitions rather than smooth degradation; non-distillability of reasoning models correlates with internal isomeric multiplicity; and learning improves curvature before accuracy.

This framework addresses the long-term accessibility of information and the conditions under which retrieval remains possible. It distinguishes between persistence (the physical survival of a structure) and reachability (the capacity to activate or retrieve it). Ecphoric activation describes the threshold phenomena by which stored patterns are brought back into active use.

The framework connects to RSVP through admissibility landscapes interpreted as retrieval landscapes, to CLIO through the conditions on semantic sufficiency that allow compressed representations to support later reactivation, and to Spherepop through the residues left by collapse events, which function as the raw material of memory.

9.4. Semantic Navigation and Preference Fields

This framework reconceives search and information retrieval as navigation through a geometric possibility space. Preference fields define attractors and repellers in se-

mantic manifolds; admissibility filtering constrains which trajectories are accessible; retrieval becomes trajectory selection rather than lookup.

The framework draws directly on CLIO for its treatment of semantic manifolds and on RSVP for its treatment of admissibility. It has produced practical tools including EmbedFilter and related semantic manifold implementations.

10. Layer Four: Integrative and Applied Frameworks

10.1. HYDRA

HYDRA is the most fully developed integrative framework and the first large-scale attempt to operationalize multiple primary theories simultaneously. This distinguishes it sharply from frameworks that merely extend a single parent theory. It requires inputs from at least RSVP, CLIO, Spherepop, and Preservation/Ecphory simultaneously. Its purpose is to explain intelligence as the interaction of multiple constraint-processing systems operating on admissibility landscapes.

HYDRA is not an application of any single primary theory. It is a synthesis: a cognitive architecture that becomes possible only after several lower-level theories have been developed sufficiently to provide its components. The migration of RSVP Consciousness Dynamics into HYDRA, along with contributions from Spherepop's event calculus, CLIO's projection operators, and Preservation/Ecphory's retrieval framework, illustrates how integrative frameworks absorb and consolidate earlier programs.

10.2. Process-Native Computing

Process-Native Computing applies the philosophical commitments of Reachability Ontology to software architecture and operating system design. It draws on Spherepop for its event-theoretic computational primitives, on TARTAN for constraint-preserving decomposition, and on Coordination Geometry for synchronisation mechanisms. The influence of Karl Fant, Null Convention Logic, and Unix pipeline philosophy provides external intellectual anchors.

Its central claim is that computers should be organised around propagating processes rather than applications and files. State, persistence, and identity are reconceived in terms compatible with the broader ontological commitments of the

program.

10.3. Civilisation and Institutional Geometry

This domain application uses Repair Theory, RSVP, and elements of Coordination Geometry to analyse social, economic, and institutional systems. Markov boundaries define the scope of institutional action. Coordination costs are interpreted as admissibility constraints. Fiscal reachability extends the reachability framework to public finance. Undo stacks and institutional repair are central organisational concepts.

Major works include *Civilisation's Undo Stack*, *Fiscal Reachability and the Geometry of Public Finance*, *Proxy Permanence Failure*, and *Broken Tools for a Breaking World*.

11. The RSVP Formalization Programs

The formalization programs associated with RSVP deserve separate treatment because they are neither complete nor abandoned. They represent an ongoing effort to give the primary theories rigorous mathematical expression using modern tools from algebraic geometry and quantum field theory.

Active formalization programs include the derived algebraic geometry framework, which uses derived stacks, cotangent complexes, and deformation theory to model RSVP field configurations; the AKSZ/BV quantization program, which constructs a sigma-model formulation of RSVP and develops a quantized version of the entropy and flow fields; and the derived sigma model work, which treats baryon flows and entropy fields as maps into derived moduli spaces.

Holonomic Space: Admissibility and Reconstruction occupies a distinctive position within the formalization layer. Unlike the derived geometry and quantization programs, which approach RSVP from the direction of modern mathematical physics, Holonomic Space approaches it from the direction of variational dynamics, sheaf theory, and observational programs for modelling cosmology and measurement through local recursive persistence. Its emphasis on reconstruction — on how a system's admissible states can be recovered from local observations — connects it directly to both CLIO and Preservation/Ecphory, giving it a broader theoretical footprint than the other formalization programs. It is best classified as an independent formalization strand rather than a subprogram of derived geometry.

The RSVP Field Simulator and the Admissibility Log constitute the computational infrastructure of the formalization layer. The simulator implements the $(\Phi, \mathbf{v}, S)$ field dynamics in a testable environment; the log provides event-sourced record-keeping for admissibility computations and their revision history.

These programs are classified as RSVP infrastructure rather than independent frameworks. Their purpose is to sharpen the primary theories rather than generate new ontological claims.

12. Domain Applications and Peripheral Investigations

12.1. Ecological Network Dynamics

The Geometry of Rewiring applies admissibility thinking to ecological resilience, reinterpreting it as the conservation of transformability: the preservation of navigable future paths within an ecological network rather than the maintenance of any particular state. This was one of the earliest demonstrations that the admissibility framework could transfer across domains outside cosmology and cognition, and it anticipates many of the structural features of Civilisation and Institutional Geometry.

12.2. Pedagogy

Calculus as the Geometry of Relationship and Controlled Change belongs to the pedagogical layer. Its central move — reframing calculus as a language for transformation rather than a collection of computational techniques — expresses the same commitment to process and trajectory that runs through the theoretical frameworks. It may serve as the most accessible entry point into the broader program for readers without prior exposure to the theoretical vocabulary.

12.3. Peripheral Investigations

The Stone Piano Hypothesis, which investigates whether the 176,500-year-old Neanderthal ring structures in Bruniquel Cave functioned as intentional lithophones exploiting the acoustic properties of speleothems, does not derive from the Admissibility Program and does not feed back into it in any direct theoretical way. It is classified here as a domain investigation in archaeological acoustics — a research

interest maintained in parallel with the theoretical program rather than integrated into it.

13. The Adjacent Ecosystem: 8b.IS and its Stack

The 8b.IS project is an independent research and engineering effort whose relationship to the Flyxion program is one of deep intellectual cross-pollination rather than derivation. 8b.IS has developed its own stack of four interconnected projects — MEM|8, AyeOS, Phoenix Protocol, and Marine — each of which draws heavily on Flyxion theoretical vocabulary while developing it in engineering directions that the core program does not itself pursue.

The boundary between the two programs is real but porous. The Flyxion program generates theoretical frameworks; 8b.IS realises those frameworks as operating system architecture, memory physics, stability protocols, and admissibility filters. The influence runs primarily from Flyxion outward, but the engineering work of 8b.IS has in several cases sharpened and extended the theoretical claims, particularly around MEM|8's wave-mechanical memory model and Marine's tangent constraint formalism.

8b.IS

8b.IS focuses on data structures and systems that resist compression, preserve information under adversarial encoding pressure, and maintain structural constraints across transmission and storage. Its vocabulary overlaps substantially with RSVP and CLIO but follows its own research trajectory.

MEM|8

MEM|8 is a wave-mechanical memory architecture in which memory is not stored as static data but as active, interfering wave packets propagating through an RSVP field residue substrate. Each memory cell is characterised by five parameters: amplitude $A = \Phi_m$ (scalar accessibility, determining salience), frequency ω (carrying inherent semantic content), phase $\phi = v_m$ (associative flow, determining where the memory leads), decay $D \propto 1/S_m$ (high-entropy memories dissolve rapidly into the background), and interference I (constructive interaction with adjacent memory

cells, governing recall). The governing equation involves the gradient of the wave entropy field: $\nabla = \frac{\partial w_{se}}{\partial t}((x) = v^2 v_{st} x(a, y))$.

This is substantially more developed than a simple application of Spherepop residue concepts. MEM|8 constitutes a full wave-mechanical memory physics grounded in RSVP field dynamics, with the (Φ, v, S) triple mapping directly onto the amplitude, phase, and decay parameters of each wave packet. The connections to Preservation/Ecphory (accessibility thresholds), RSVP (field residue substrate), and Spherepop (collapse residue as memory substrate) are all active.

Phoenix Protocol

Phoenix Protocol is an entropy-resistant reconstruction system that maintains memory field coherence against dissolution. It uses Lyapunov stability analysis — specifically the equation $\frac{\partial}{\partial t}|x_b| = | \leq | - \alpha \|x_m\|$ — to test whether memory configurations remain within stable attractors. A 0.73 Hz heartbeat rhythm provides periodic coherence testing, checking the memory field against dissolution thresholds. The protocol represents a formal treatment of what Repair Theory calls maintaining admissibility: it is the mechanism by which the MEM|8 system detects and corrects inadmissible memory states before they propagate.

Marine

Marine is the Admissibility Gate of the 8b.IS stack: an intake filter that blocks structurally incoherent signals from entering the semantic fluid before they reach the MEM|8 layer. It operates via tangent constraints of the form $\angle \simeq {}^{\Vert} + \partial_b$, testing incoming signals for geometric admissibility before they are permitted to interact with the memory wave field. Marine is the most direct engineering realisation of the admissibility concept in the entire ecosystem: where the Flyxion program defines admissibility theoretically, Marine implements it as a filter.

AyeOS

AyeOS is the orchestration layer of the stack. It uses sheaf-theoretic routing governed by a functor $\mathcal{F} \equiv \{\frac{G}{1} X\}$, with the operating system scheduler directing data along paths that preserve semantic coherence across the full stack. AyeOS is best understood as an engineering realisation of Process-Native Computing and Spherepop's

event primitives, instantiating sheaf-theoretic ideas from TARTAN and Holonomic Space at the operating system level.

The four projects form a coherent vertical stack: Marine filters for admissibility at intake, MEM|8 stores and retrieves via wave-mechanical dynamics, Phoenix Protocol maintains field coherence against entropy, and AyeOS orchestrates the whole via semantics-preserving sheaf routing.

Part III Open Problems

14. Major Unresolved Questions

14.1. The Continuous-Discrete Interface: RSVP and Spherepop

This was the most important unresolved question in the program. *Structured Irreversibility* has now provided a significant partial answer.

The paper proves that the Spherepop category **SP** — the free symmetric monoidal entropy-decreasing rewriting category generated by the event primitives Pop, Refuse, Bind, and Collapse — is initial in the category **EDSMC** of entropy-decreasing symmetric monoidal categories. It then constructs a symmetric monoidal functor $F : \mathbf{SP} \to \mathbf{RSVP}$ into a smooth realization category whose objects are manifolds equipped with coherence potential Φ, velocity field v, and entropy density S, and whose morphisms carry explicit entropy-slack witnesses.

This functor resolves the interface question in a specific direction: Spherepop's discrete combinatorial constraint accumulation maps into RSVP's continuous coherence redistribution. The two frameworks are not dual descriptions of the same structure, nor is one a coarse-graining of the other. Instead, **SP** is the source category of irreversible commitments and **RSVP** is the target category of smooth field dynamics, connected by a structure-preserving map that respects entropy monotonicity.

What remains open is whether F is faithful (whether distinct Spherepop histories always produce distinct RSVP realizations), whether the category admits a compact-closed extension supporting a duality between commitment and co-commitment, and whether the functor lifts to a quantum or unistochastic extension connecting to the probabilistic Spherepop calculus.

14.2. Projection and Intrinsic Structure: The CLIO Problem

CLIO raises a question it cannot answer within its own framework: how much of the structure we observe in a domain is intrinsic to that domain, and how much is introduced by the act of projection? If every observer constructs a compressed representation of reality, there is a risk that the structures reported by observers are partly artefacts of their projection operators rather than features of the underlying admissibility landscape.

Resolving this requires either a theory of projection-invariant structure within CLIO, or an account of how RSVP fields can be accessed without the mediating distortion of CLIO projection. Neither account currently exists.

14.3. Repair and Thermodynamics

Repair Theory claims that repair is more fundamental than construction. But this claim sits in tension with standard thermodynamic reasoning, which treats the maintenance of low-entropy states as a cost requiring external energy input. The question is whether repair can be derived from admissibility dynamics — perhaps as a directed trajectory in RSVP field space toward restored admissibility — or whether it must be taken as a genuinely primitive category irreducible to field dynamics.

If repair is derivable, Repair Theory becomes a special case of RSVP applied to persistence. If it is primitive, Repair Theory retains its status as an independent primary framework with consequences for thermodynamics rather than consequences derived from it.

14.4. Coordination and Meaning

Coordination Geometry raises the question of whether semantic structure can emerge purely from coordination dynamics. If sufficiently complex patterns of synchronisation and desynchronisation among coupled systems can generate stable categories, reference, and inference, then meaning may be a coordination phenomenon rather than a representational one. This would connect Coordination Geometry directly to CLIO and might allow the two frameworks to be unified under a common account of how structured information emerges from dynamic processes.

14.5. Preservation and Reachability

The mathematical relationship between persistence, accessibility, and retrieval remains incompletely characterised. Preservation/Ecphory distinguishes between physical survival and reachability, but a precise formal account of what determines whether a stored pattern crosses the ecphoric activation threshold is not yet available. This question connects to RSVP through admissibility landscape topology, to CLIO through semantic sufficiency conditions, and to Spherepop through the structure of collapse residues.

14.6. The Umbrella Question

The program as a whole circles around a question that may constitute its ultimate research target:

> *How do stable structures emerge, persist, transform, and remain reachable within a universe fundamentally composed of processes rather than things?*

Nearly every major framework can be understood as an attack on this question from a different direction. The open problem at the highest level is whether the individual answers can be assembled into a unified theoretical statement that is not merely a summary of its components but a genuinely novel claim about the nature of admissible reality.

15. The Central Conjecture of the Admissibility Program

The preceding sections have traced the historical origins of the program, mapped its dependency architecture, and catalogued its open problems. It remains to state, as explicitly as the current state of the work permits, the single overarching thesis that the entire program is attempting to establish.

The conjecture is this.

> *Across physics, cognition, memory, computation, ecology, and civilisation, the primary explanatory object is neither substance nor information but the structure of admissible transformations. Stable entities emerge as maintained regions of admissibility. Persistence is the preservation of admissible trajectories. Repair*

> *is the restoration of lost admissibility. Cognition is navigation through admissibility landscapes. Meaning is the result of coordination within admissible synchronisation regions. Institutions are mechanisms for maintaining collective admissibility across time.*

This conjecture has a number of important features.

It is domain-invariant. The same structural claim applies to cosmological field dynamics, to neural memory retrieval, to ecological resilience, to software architecture, to institutional governance, and to the long-term survival of knowledge. The domains differ; the explanatory structure is shared.

It is process-first. The objects that populate ordinary scientific and philosophical descriptions — particles, mental states, organisms, institutions, documents — appear here not as primitives but as derived categories: stabilised processes, maintained accessibility regions, frozen trajectories. The primary vocabulary is transformation, admissibility, and reachability rather than object, property, and relation.

It is repair-centred. The standard picture of reality privileges construction: things come into existence through assembly, combination, or generation. The Admissibility Program inverts this. Things persist through repair. The explanatorily prior category is not how something was built but how its admissibility is maintained against the constant pressure of degradation, constraint erosion, and trajectory loss.

It makes contact with experience. The conjecture did not arise from pure speculation. It was generated by sustained engagement with physical systems — construction, electrical work, plumbing, property rehabilitation — in which the practical question is never the ideal design but always the available transformation: what can be done from here, within these constraints, without destroying the continuity that makes the system repairable at all. The conjecture is in that sense empirically grounded in a practice, even before it is tested against formal theory.

The conjecture is not yet proven. Several of its components — the relationship between RSVP and Spherepop, the status of CLIO as primary theory or co-foundation, the derivability of repair from admissibility dynamics — remain genuinely open. The document has been honest about these tensions rather than resolving them prematurely. What can be said is that the conjecture has survived contact with a large number of domains, has generated productive research programs in each of them, and has not yet been contradicted by any of them.

That is enough to warrant calling it a research program.

16. The Architecture in Retrospect

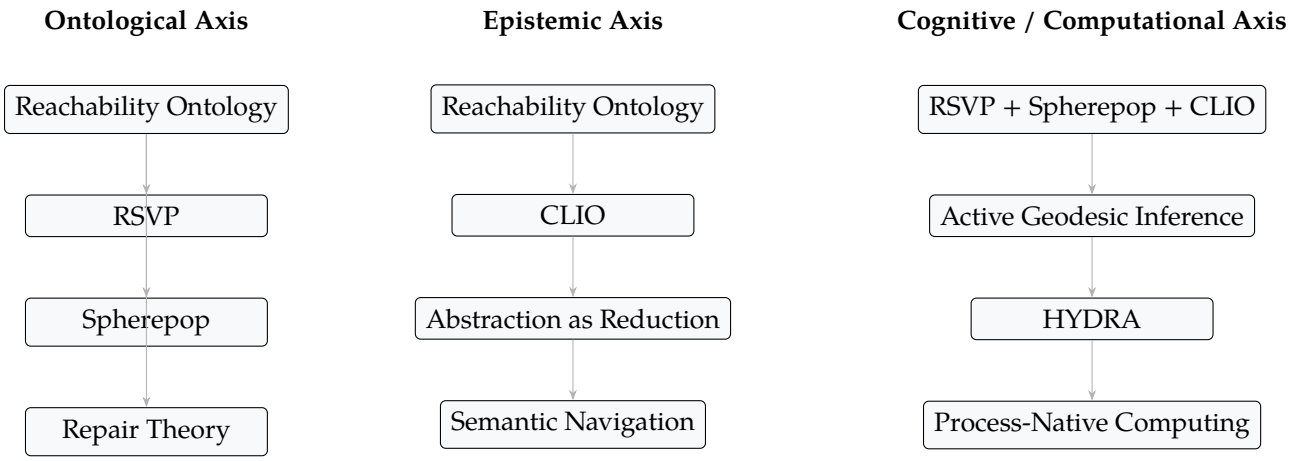
The following table summarises the current status of each framework in the program. Status reflects the degree to which a framework has produced stable formal claims, worked examples, and cross-framework integration, rather than merely a count of associated papers.

Layer	**Framework**	**Status**	**Primary Integration Points**
Ontology	Reachability Ontology	Mature	All primary theories
Primary Theory	RSVP	Mature	CLIO, Spherepop, Coord. Geometry
Primary Theory	Spherepop	Mature	RSVP (F: SP$\to$RSVP), HYDRA, PNC
Primary Theory	CLIO	Mature	TARTAN, Semantic Navigation, HYDRA
Primary Theory	Repair Theory	Developing	Civilisation Geometry, RSVP
Primary Theory	Active Geodesic Inference	Developing	RSVP, Spherepop, CLIO, HYDRA
Secondary	TARTAN	Developing	CLIO, RSVP, Process-Native Computing
Secondary	Coordination Geometry	Developing	RSVP, HYDRA, PNC
Secondary	Preservation/Ecphory	Developing	RSVP, CLIO, Spherepop, HYDRA
Secondary	Semantic Navigation	Developing	CLIO, RSVP
Formalization	Holonomic Space	Active	RSVP, CLIO, Preservation/Ecphory
Formalization	Derived Geometry / AKSZ	Active	RSVP
Integrative	HYDRA	Emerging	RSVP, CLIO, Spherepop, Preservation, AGI
Integrative	Process-Native Computing	Emerging	Spherepop, TARTAN, Coord. Geometry
Applied	Civilisation Geometry	Emerging	Repair Theory, RSVP, Coord. Geometry

The four primary theories can also be compared directly across three dimensions — their core domain, fundamental primitive, and relationship to entropy — in a way that makes their complementarity visible at a glance.

Theory	**Core Domain**	**Fundamental Primitive**	**Relationship to Entropy**
RSVP	Cosmology / Physics	Continuous fields (Φ, v, S)	Gravity is entropy descent; structure formation via constraint erosion
Spherepop	Computation	Discrete events (Pop, Refuse, Bind, Collapse)	Initial in entropy-decreasing monoidal categories; F : **SP** $\to$ **RSVP**
CLIO	Epistemology / Observation	Projection operators	Pathological extraction destroys system admissibility constraints
Repair Theory	Persistence	The repair relation	Fighting thermodynamic degradation to maintain repair latitude
Active Geodesic Inference	Intelligence	Semantic isomers	Intelligence is maintenance of low-action admissible histories

Beyond the dependency graph, the architecture can be read along three distinct thematic axes that cut across the layer model. These axes are not alternatives to the dependency structure but complementary perspectives on it.



Several observations follow from this map.

What is primary. The mature layer — Reachability Ontology, RSVP, Spherepop, CLIO — is where the program's most stable and independently defensible claims live. Active Geodesic Inference is now listed as a fifth primary theory at developing status. Its six axioms, its independent notion of intelligence, its reconstruction of the RSVP Hamiltonian, and its empirically testable predictions distinguish it from a secondary formalism. The boundary it has crossed is the one separating frameworks that apply or extend existing concepts from frameworks that make their own ontological claims.

What is derivative. The secondary and integrative frameworks are not independent. TARTAN requires CLIO. Coordination Geometry requires RSVP. HYDRA requires all primary theories simultaneously. None of these can survive if their upstream dependencies are abandoned.

What is mature. A framework is mature in this program when three conditions hold: its central claim is independently statable, its formal objects are defined precisely enough to support proofs, and it has been tested against at least two independent domains. By that criterion, the four classical primary theories and Reachability Ontology are mature. The functor $F : \mathbf{SP} \to \mathbf{RSVP}$ proved in *Structured Irreversibility* represents a step-change in maturity for both Spherepop and their relationship.

What is speculative. The most speculative elements are the consciousness and cognition claims in HYDRA and Active Geodesic Inference, the governance architecture in *The Forkability of Time*, and the amplitwistor extension of Spherepop in *Spherepop Foundations*. These are productive speculations — they generate testable predictions and formal obligations — but they have not yet been subjected to the cross-domain stress testing that the mature frameworks have.

The three thematic axes. Beyond the dependency graph, the architecture can be read along three distinct intellectual lineages. The ontological axis runs from Reachability Ontology through RSVP, Spherepop, and Repair Theory: it answers the question of what exists and how it persists. The epistemic axis runs from Reachability Ontology through CLIO, Abstraction as Reduction, and Semantic Navigation: it answers the question of how finite observers represent and navigate admissibility landscapes. The cognitive-computational axis runs from the primary theories through Active Geodesic Inference into HYDRA and Process-Native Computing: it answers the question of how intelligence is constituted and implemented. The diagram below makes these three trajectories visible alongside the dependency graph.

The major integration points. The program has three critical joints. The first is the RSVP-Spherepop functor, which connects the field-theoretic and event-theoretic primary theories. The second is HYDRA, which requires all primary theories as simultaneous inputs. The third is Active Geodesic Inference, which reconstructs the RSVP Hamiltonian from semantic axioms, suggesting that the field equations may be more fundamental than any particular physical interpretation of them.

Appendix A Framework Reference Guide

A. How to Use This Appendix

Each entry follows a standard template: Purpose, Central Claim, Core Objects, Relationships to Other Frameworks, Major Works, and Open Problems. Entries are organised by layer. Within each layer, ordering is roughly by degree of development, most developed first.

B. Precursor Works

B.0.1. Persistent Anomalies and the Geometry of Ontology Revision

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Historical Origin. Emerged from practical and theoretical engagement with data model failure, prior to the explicit articulation of the Admissibility Program. One of the earliest published works under the Flyxion name.

Key Dependencies. None formally; this is a precursor document. Retroactively connected to Reachability Ontology, Repair Theory, and CLIO.

Purpose. To develop a framework for distinguishing minor errors from fundamental structural failures in data models, using the language of topological obstruction and repair. **Central Claim.** Not all anomalies require local correction. Some represent topological obstructions that require revision of the ontological framework

itself. Repair is the appropriate response to structural failure, not reconstruction.

Core Objects. Topological obstruction; ontology revision; structural failure; repair threshold; admissibility of data models.

Relationships to Other Frameworks. This monograph now appears as one of the earliest explicit precursors to Repair Theory, CLIO, and Reachability Ontology. Its obstruction vocabulary anticipates the sheaf-theoretic strand of TARTAN. It predates the formal articulation of the Admissibility Program but already operates within its conceptual space.

Major Works. *Persistent Anomalies and the Geometry of Ontology Revision*.

Open Problems. How does the obstruction-theoretic framework developed here relate formally to the sheaf-theoretic obstruction machinery in TARTAN? Can the ontology revision framework be embedded within CLIO's projection-theoretic language?

C. Formalization Programs

C.0.1. Holonomic Space

Historical Origin. Emerged from the RSVP formalization effort as an attempt to bridge the physical intuitions of the plenum theory with rigorous sheaf-theoretic machinery. Developed in parallel with, rather than downstream of, the derived algebraic geometry program.

Key Dependencies. RSVP (primary); Reachability Ontology (philosophical); connects laterally to CLIO and Preservation/Ecphory.

Purpose. To provide a formalization of admissibility and reconstruction using variational dynamics, sheaf theory, and observational programs, modelling cosmology and measurement through local recursive persistence. **Central Claim.** Admissible states of a system can be reconstructed from local observations under appropriate holonomy conditions. Measurement is not passive recording but active trajectory reconstruction within a sheaf-theoretic admissibility structure.

Core Objects. Holonomy; local recursive persistence; sheaf; variational dynamics;

observational program; admissibility reconstruction.

Relationships to Other Frameworks. Holonomic Space sits between RSVP and the derived algebraic geometry formalization program. Its sheaf-theoretic approach connects it to TARTAN and its reconstruction emphasis connects it to CLIO and Preservation/Ecphory. It is best understood as an independent formalization strand with broader theoretical footprint than the quantization programs.

Major Works. *Holonomic Space: Admissibility and Reconstruction* (multi-part monograph, in development).

Open Problems. The precise relationship between holonomic reconstruction and RSVP field recovery. Whether the observational program developed here can be used to generate empirical predictions distinguishable from standard cosmological models.

C.0.2. Derived Algebraic Geometry Formalization

Historical Origin. Emerged during the early RSVP-centric phase as the primary mathematical formalization effort. Predates several of the primary theories and was originally conceived as the route from RSVP to a rigorous quantum field theory.

Key Dependencies. RSVP (exclusively); AKSZ/BV Quantization (downstream).

Purpose. To express RSVP field configurations using the machinery of derived algebraic geometry, providing a rigorous mathematical foundation for the primary theory. **Central Claim.** RSVP field configurations can be modelled as points in derived moduli spaces, with deformation theory governing the behaviour of nearby configurations and shifted symplectic structures providing the geometric framework for quantization.

Core Objects. Derived stack; cotangent complex; shifted symplectic structure; deformation theory; moduli space; derived moduli.

Relationships to Other Frameworks. Provides mathematical infrastructure for RSVP. Connects to the AKSZ/BV quantization program as its immediate downstream application.

Major Works. Derived geometry and RSVP notes; *Derived L-System Sigma Models*.

Open Problems. Completion of the deformation-theoretic description of RSVP field space. Relationship between derived moduli geometry and the admissibility landscape concept.

C.0.3. AKSZ/BV Quantization

Historical Origin. Developed as a direct continuation of the derived algebraic geometry program, once the moduli space description of RSVP fields was sufficiently developed to support a sigma-model construction.

Key Dependencies. Derived Algebraic Geometry Formalization (prerequisite); RSVP (target theory).

Purpose. To construct a complete sigma-model formulation of RSVP and develop a quantized version of the entropy and flow fields using the AKSZ formalism and Batalin-Vilkovisky quantization. **Central Claim.** RSVP fields can be modelled as maps from a source manifold into a derived target space, and the resulting sigma model can be quantized using BV methods to yield a well-defined quantum field theory of the plenum.

Core Objects. AKSZ sigma model; BV quantization; entropy field map; baryon flow; derived target; gauge symmetry; ghost fields.

Relationships to Other Frameworks. Downstream of the derived algebraic geometry program. Connects RSVP to the broader landscape of topological and quantum field theories.

Major Works. AKSZ/BV quantization notes; *Gravity as Entropy Descent*.

Open Problems. Whether the quantized RSVP theory recovers standard results in the appropriate limits. The role of entropy field quantization in the broader cosmological picture.

D. Foundational Ontology

D.0.1. Reachability Ontology

Historical Origin. Emerged as a convergence of process-over-object intuitions accumulated across the early RSVP work, the repair and construction practice, and early essays on language and cognition. Was not named as a distinct framework until several of the primary theories had already been developed.

Key Dependencies. Practice layer (ground-floor intuitions); no formal upstream dependencies within the theoretical graph.

Purpose. To articulate the ontological commitments on which the formal frameworks depend, by making explicit the claim that reality consists of admissible transformations rather than objects. **Central Claim.** Objects are frozen trajectories. Reality is constituted by the differential reachability of admissible futures rather than by the intrinsic properties of persisting substances.

Core Objects. Admissible transformations; reachable futures; trajectories; accessibility regions; frozen processes.

Relationships to Other Frameworks. All other frameworks in the program depend on this layer either directly or transitively. RSVP provides its first field-theoretic formalisation. CLIO provides its projection-theoretic complement. Spherepop provides its event-theoretic complement. Repair Theory provides its persistence-theoretic complement.

Major Works. *Frozen Processes*; *From Preservation to Reachability*; *The Geometry of Reachable Futures*; *The Secret Life of Nouns*; *Verbs Masquerading as Nouns*.

Open Problems. What is the minimal formal language capable of expressing all the commitments of Reachability Ontology without importing the vocabulary of any particular primary theory? Is there a unifying mathematical structure — a category of admissible transformations, perhaps — from which RSVP, CLIO, and Spherepop can all be derived as special cases?

E. Primary Theories

E.0.1. RSVP

Historical Origin. The original and longest-running framework in the program. Began as a cosmological field theory and expanded to encompass consciousness dynamics, gravity, structure formation, and entropy. During the early phase of the program it functioned as a universal attractor for nearly all other theoretical questions.

Key Dependencies. Reachability Ontology (philosophical foundation); practice layer (original intuitions about constrained flow).

Purpose. To provide a field-theoretic account of admissibility dynamics in which gravity, entropy, structure formation, and cosmological evolution are explained through the behaviour of the $(\Phi, \mathbf{v}, S)$ field triple. **Central Claim.** The structure of reality at every scale can be described by the dynamics of scalar concentration, vector flow, and entropy density fields over admissibility landscapes. Gravity is descent through admissibility space. Cosmological smoothing proceeds through lamphrodyne relaxation rather than inflation.

Core Objects. Scalar field Φ; vector flow field $\mathbf{v}$; entropy density S; admissibility landscape; lamphrodyne relaxation; constraint erosion.

Relationships to Other Frameworks. RSVP is the primary field-theoretic development of Reachability Ontology. CLIO addresses the complementary question of observer projection over RSVP landscapes. Spherepop operates at the event-theoretic level and may describe singularities or phase transitions within RSVP dynamics. Coordination Geometry and Preservation/Ecphory are downstream secondary formalisms. HYDRA, Process-Native Computing, and Civilisation Geometry are downstream integrative or applied frameworks. The RSVP formalization programs provide mathematical infrastructure.

Major Works. *The Admissibility Field*; *Axioms for a Falling Universe*; *Three Smoothing Mechanisms in Early Cosmology*; *Constraint-Compatible Continuity Binding*; *Gravity as Entropy Descent*.

Open Problems. Resolution of the RSVP-Spherepop interface (continuous fields

versus discrete events). Completion of the AKSZ/BV quantization program. Empirical or observational consequences distinguishing RSVP from competing cosmological theories.

E.0.2. CLIO

Historical Origin. Emerged as the questions left unanswered by RSVP became clear: RSVP describes the landscape, but what happens when a finite system must act on that landscape using a compressed representation? Early abstraction essays and the Hidden Manifolds work crystallised these concerns into a framework. The monograph *Abstraction as Reduction* developed the core thesis through lambda calculus, Reynolds parametricity, category theory, NCL signal stabilisation, and the Curry-Howard correspondence, establishing that abstraction is not merely a representational tool but a structural feature of existence.

Key Dependencies. Reachability Ontology (philosophical); RSVP (landscape it operates over); possibly co-foundational with Reachability Ontology — see note in Section **??**.

Purpose. To formalise what happens when a finite observer, agent, model, or institution projects an admissibility landscape into a lower-dimensional representation, and to distinguish productive reduction from pathological extraction. **Central Claim.** Abstraction is reduction: the completion of necessary inner computation so that outer complexity can grow without conflict. Every description is a projection that loses information; the quality of a description is determined by what structural invariants it preserves. Reduction manifests differently across domains — beta reduction in lambda calculus, cut elimination in proof theory, signal stabilisation in NCL, morphism collapse in category theory — but shares an invariant pattern: inner complexity is resolved to allow coherent outer composition. Ethical abstraction acknowledges its incompleteness, preserves admissibility, and allows the underlying reality to veto the simplification. Extraction is the pathological form: treating the projection as the territory, discarding crucial constraints, and prioritising efficiency over structural fidelity.

Core Objects. Projection operators; representational entropy; semantic sufficiency; hidden manifolds; information loss; recoverability conditions; beta reduction; para-

metricity; cut elimination; signal stabilisation; canonical form; epistemic compression; ethical abstraction; extraction; constraint set; admissible transformation; unistochastic interface matrix; geodesic inference.

Relationships to Other Frameworks. CLIO is the projection-theoretic complement to RSVP. It inherits the admissibility landscape from RSVP but addresses a distinct question: the behaviour of observers rather than the behaviour of the landscape itself. The ethical abstraction versus extraction distinction connects CLIO directly to Repair Theory: extraction is what occurs when a CLIO projection is mistaken for the territory and admissibility is no longer preserved; repair is the restoration of that admissibility. TARTAN extends CLIO into recursive decomposition. Semantic Navigation applies CLIO to information retrieval and incorporates unistochastic interface matrices to model amplitude-level constraints on probabilistic transitions, enabling identity-preserving inference as geodesic evolution. HYDRA draws on CLIO's projection operators for its cognitive architecture. CLIO's status as a primary sibling versus a co-foundational node alongside Reachability Ontology remains an open architectural question.

Major Works. *Hidden Manifolds*; *Abstraction as Reduction*; relevant sections of *The Admissibility Field*.

Open Problems. The projection-invariance problem: what features of an admissibility landscape survive arbitrary projection, and how can they be distinguished from artefacts of the projection operator? Whether CLIO should be elevated to a co-foundational role. The relationship between CLIO compression and RSVP field recoverability. Whether the unistochastic constraint on interface matrices can be derived from the admissibility conditions on RSVP fields, which would unify the quantum-geometric and field-theoretic strands of the program.

E.0.3. Spherepop

Historical Origin. Originated as a cognitive and visual language for describing nested scope and evaluation — a way of making the geometry of computation visible through bubble nesting rather than symbolic expression. Gradually expanded into a general calculus for formation, collapse, residue, refusal, and history-as-identity. Developed substantially independently of RSVP, sharing the process-first

intuition but arriving at it through a different route. The theoretical work has been accompanied by a substantial implementation program: a full compiler in C with its own lexer, parser, runtime, bytecode VM, geometry subsystem, and sheaf semantics layer; prototypes in Python, Haskell, Racket, and Forth; a shell-based event log system with overlay, fork, merge, rebase, and replay tooling; and a visualizer. Example programs in the compiler repository execute claims from CLIO, Preservation/Ecphory, and Semantic Navigation directly in Spherepop syntax, establishing it as a working executable language for the broader program.

Key Dependencies. Reachability Ontology (philosophical foundation); no formal dependency on RSVP — the two are siblings.

Purpose. To provide an event-theoretic account of how stable local structures form, persist, collapse, refuse, bind, and leave residues within dynamic systems, and to make this account computationally executable. **Central Claim.** Formation, collapse, binding, refusal, and residue are primitive events that constitute the history of a system. Histories are more fundamental than states. Identity is event history, not substance. Stable structures are persistent accessibility regions in event history space. Refusal is an autonomous primitive that cannot be represented as utility maximisation over a fixed state-action-utility triple without encoding event-history as a primitive state variable. Irreversibility is structural, not incidental. Time is forkable. The Spherepop category **SP** is initial in the category of entropy-decreasing symmetric monoidal categories (**EDSMC**), and there exists a symmetric monoidal functor $F : \mathbf{SP} \to \mathbf{RSVP}$ connecting discrete commitment dynamics to continuous field dynamics. Spherepop is computationally universal, subsuming lambda calculus, Turing machines, neural feedforward dynamics, and probabilistic computation.

Core Objects. Bubble; formation event; collapse event; refusal; binding; residue; scope; history as primitive; collapse residue; structured irreversibility; scope geometry; commitment calculus; temporal fork; operational mereology; admissibility check; trajectory collapse; execution history; meld operator; semantic merge policy; monoidal category; tensor product as parallel merge; idempotent merge; commutative merge; morphism as geometric transformation; coherence isomorphism; geometric region; payload; coordinate-labelled sphere; EDSMC; entropy-slack witness; option space; commitment history; Lagrangian over option spaces; Hamiltonian as remaining maneuverability; discrete geodesic; semantic isomer.

Relationships to Other Frameworks. The functor $F : \mathbf{SP} \to \mathbf{RSVP}$ (*Structured Irreversibility*) formally connects Spherepop and RSVP: **SP** accumulates constraints

combinatorially while **RSVP** redistributes coherence differentially. This resolves the previously open interface question in a specific direction without collapsing the two frameworks. The sheaf semantics layer in the compiler connects Spherepop to TARTAN's obstruction framework. CLIO projection and semantic navigation are already expressed as executable Spherepop programs. Active Geodesic Inference uses Spherepop as its execution substrate, connecting it to HYDRA and RSVP via the Gibbs bond selection and synchronisation axioms. Process-Native Computing draws on Spherepop event-theoretic primitives. Spherepop residues connect to Preservation/Ecphory and, in the 8b.IS ecosystem, to MEM|8's wave-mechanical memory. The meld operator provides a sixth primitive governing convergence of parallel histories, relevant to Civilisation Geometry's treatment of institutional reconciliation. The non-representability theorem for refusal connects *The Autonomy of Refusal* and *Throwing the Game* to governance theory in Civilisation Geometry.

Major Works. Monograph corpus: *Spherepop: Geometry, Cognition, and the Transparency of Computation*; *Structured Irreversibility*; *The Autonomy of Refusal*; *The Forkability of Time*; *History as Identity*; *Scope as Geometry*; *The Calculus of Commitment*; *Operational Mereology*; *Active Geodesic Inference*; *Joy of Spherepop*; *Computation After Storage*; *Computation as Semantic Maintenance*; *Event-Historical Aggregation*; *Throwing the Game*; *Sheaf of Flow Obstructions*; *Spherepop OS*; *The Geometry of Spherepop*; *The History of Spherepop*; *Spherepop Trajectory Collapse*; *Spherepop Foundations*; *Intelligence Explosion*; *Attention as Minimal Relational Interaction*; *Entropy of Austerity*; *Spherepop Calculus* (SPC with Giry monad); *Spherepop Specifications*; plus the full compiler codebase, multi-language prototype implementations, and the Adaptive Trust Dynamics corpus.

Open Problems. Whether $F : \mathbf{SP} \to \mathbf{RSVP}$ is faithful (distinct Spherepop histories always produce distinct RSVP realizations). Whether the category admits a compact-closed or $*$-autonomous extension supporting a duality between commitment and co-commitment. Whether the functor lifts to a quantum or unistochastic extension connecting to the probabilistic SPC. Whether the meld operator can be derived from the existing four primitives or is genuinely independent. Whether temporal forking in Spherepop corresponds precisely to branching in RSVP admissibility landscapes. The relationship between history-as-identity and Preservation/Ecphory's ecphoric activation threshold.

E.0.4. Repair Theory

Historical Origin. Has roots in the practical construction and rehabilitation work, which repeatedly encountered systems that could not be rebuilt from scratch and required active maintenance of continuity. First formalised as an extension of RSVP; gradually developed independent claims. The *Persistent Anomalies* monograph is an early precursor.

Key Dependencies. Practice layer (primary intuitive source); Reachability Ontology (philosophical foundation); RSVP (natural formal language, though not a strict prerequisite).

Purpose. To establish repair as a more fundamental category than construction, and to provide a framework in which persistence across biological, social, linguistic, and technological systems is explained by active maintenance of admissible states.
Central Claim. Persistence is not explained by construction. Construction is explained by repair. The repair relation is a primitive that characterises how a system returns from inadmissible states to admissible ones.

Core Objects. Repair relation; restoration geometry; repair latitude; admissible state; inadmissible state; repair infrastructure; knowledge as repair capacity.

Relationships to Other Frameworks. Repair Theory began as an extension of RSVP and Reachability Ontology but has developed increasing independence. Its connection to thermodynamics is an open problem that may determine whether it is a derived or primitive framework. It contributes directly to Civilisation Geometry through the concepts of institutional repair and civilisational undo stacks.

Major Works. *Repair as a Fundamental Category*.

Open Problems. Can the repair relation be derived from admissibility dynamics, or is it irreducibly primitive? What is the relationship between repair latitude and thermodynamic entropy production? How does repair theory apply to linguistic and semantic structures?

F. Secondary Formalisms

F.0.1. TARTAN

Historical Origin. Arose from the practical problem of how multi-scale descriptions preserve the constraints of the systems they describe. Developed in the context of RSVP and CLIO work on admissibility under decomposition.

Key Dependencies. CLIO (projection-theoretic parent); RSVP (admissibility landscape source); Holonomic Space (sheaf-theoretic connection).

Purpose. To provide a framework for constraint preservation under recursive decomposition, ensuring that structural continuity is maintained when complex systems are analysed at multiple scales. **Central Claim.** Recursive decomposition need not destroy the constraints of the original system if the decomposition respects admissibility-preserving tiling conditions.

Core Objects. Recursive tiling; constraint-preserving decomposition; structural continuity; multi-scale reasoning; admissibility inheritance.

Relationships to Other Frameworks. TARTAN connects most directly to CLIO on the question of projection-preserving decomposition and to RSVP on admissibility region behaviour under subdivision. It provides infrastructure for Process-Native Computing wherever multi-scale constraint management is required.

Major Works. TARTAN-related sections of *The Admissibility Field* and associated notes.

Open Problems. Whether TARTAN tilings can be characterised using sheaf-theoretic obstruction methods. The relationship between TARTAN constraints and RSVP field boundary conditions.

F.0.2. Coordination Geometry

Historical Origin. Began as an application of RSVP admissibility concepts to synchronisation phenomena. Grew substantially when Kuramoto dynamics, neuro-

morphic systems, and distributed computation were brought into contact with the admissibility framework, giving it empirical depth that elevated it beyond application status.

Key Dependencies. RSVP (admissibility landscape concept); Reachability Ontology (philosophical); empirical input from Kuramoto synchronisation models.

Purpose. To develop a general mathematical and empirical theory of how coupled systems discover, maintain, and lose admissible coordination regions, drawing on Kuramoto synchronisation, neuromorphic systems, biological networks, and distributed computation. **Central Claim.** Coordination is a geometric phenomenon. Coupled systems navigate a coordination manifold, and collective behaviour emerges when systems maintain trajectories within admissible synchronisation regions.

Core Objects. Coordination manifold; synchronisation region; coupling strength; rhythmic sharing; Kuramoto dynamics; collective computation; dynamic coupling.

Relationships to Other Frameworks. Coordination Geometry is downstream of RSVP in that it inherits the admissibility landscape concept, but it has developed sufficient empirical and formal independence to function as a hybrid theory. It contributes to HYDRA through neural synchronisation models and to Process-Native Computing through distributed coordination mechanisms.

Major Works. *Coordination Geometry as a General Principle of Adaptive Computation*.

Open Problems. Whether semantic structure can emerge purely from coordination dynamics, which would connect Coordination Geometry to CLIO. Empirical distinguishability from standard Kuramoto-family models.

F.0.3. Preservation, Continuity, and Ecphory

Historical Origin. Emerged from questions about long-term knowledge accessibility that arose in the context of document survival, cultural persistence, and memory retrieval. Connects to early work on reachability as accessibility.

Key Dependencies. Reachability Ontology (reachability versus preservation distinction); RSVP (admissibility landscape as retrieval landscape); Spherepop (collapse residues as memory substrate); CLIO (semantic sufficiency for reactivation).

Purpose. To characterise the conditions under which information remains retrievable over time, distinguishing persistence from reachability and formalising ecphoric activation thresholds. **Central Claim.** Accessibility is distinct from survival. A pattern may persist physically while becoming unreachable. Ecphoric activation describes the threshold conditions under which stored patterns re-enter active use.

Core Objects. Ecphoric activation; retrieval threshold; reachability vs preservation; document survival; knowledge accessibility; retrieval landscape.

Relationships to Other Frameworks. Connects to RSVP through admissibility landscape topology interpreted as a retrieval landscape; to CLIO through semantic sufficiency conditions for reactivation; to Spherepop through collapse residues as memory substrate. Feeds directly into HYDRA's memory integration layer.

Major Works. *From Preservation to Reachability*.

Open Problems. Formal characterisation of ecphoric activation thresholds in terms of RSVP field topology. The relationship between retrieval reachability and CLIO projection recoverability.

F.0.4. Semantic Navigation and Preference Fields

Historical Origin. Grew from the observation that search and information retrieval share the structural features of navigation through a geometric space. Connected to CLIO's semantic manifold work and RSVP's admissibility filtering.

Key Dependencies. CLIO (semantic manifold construction); RSVP (admissibility filtering).

Purpose. To reconceive information retrieval as navigation through a geometric possibility space governed by preference fields and admissibility constraints. **Central Claim.** Search is trajectory selection through a semantic manifold. Relevance is proximity in admissibility-filtered semantic space. Preference fields define attractors and repellers that shape retrieval trajectories.

Core Objects. Preference field; semantic manifold; admissibility filter; retrieval trajectory; geometric retrieval; EmbedFilter.

Relationships to Other Frameworks. Draws directly on CLIO for semantic manifold construction and on RSVP for admissibility filtering. Implements theoretical

commitments from both frameworks in practical retrieval tools.

Major Works. Preference field papers; EmbedFilter implementation; semantic manifold essays.

Open Problems. Formal relationship between preference field attractors and RSVP entropy gradients. Whether retrieval trajectories can be characterised using the same Spherepop event calculus that describes formation and collapse.

F.0.5. Abstraction as Reduction

Historical Origin. Developed as the central thesis of the *Abstraction as Reduction* monograph, which traces the same invariant pattern across lambda calculus, Reynolds parametricity, category theory, Null Convention Logic, and the Curry-Howard correspondence. While formally part of the CLIO research program, the thesis has sufficient generality and independent recognisability to warrant its own reference entry.

Key Dependencies. CLIO (parent framework); Spherepop (which provides the collapse operation that instantiates the thesis computationally); RSVP (whose lamphrodyne relaxation is another instance of the same pattern).

Purpose. Central Claim. Abstraction is the completion of necessary inner computation so that outer complexity can grow without conflict. Beta-reduction, cut elimination, NCL signal stabilisation, categorical morphism collapse, and RSVP entropy descent are all instances of the same invariant: inner complexity is resolved to enable coherent outer composition. The Abstraction-Reduction Equivalence theorem states: β-reduction $\equiv$ Spherepop collapse $\equiv$ Turing transition $\equiv$ neural forward propagation $\equiv$ entropy descent $\equiv$ Hamiltonian minimisation. Each computational reduction step is a discrete geodesic in the RSVP-Ising energy landscape. Ethical abstraction preserves admissibility; extraction destroys it.

Core Objects. Beta reduction; cut elimination; Reynolds parametricity; NCL signal stabilisation; epistemic compression; canonical form; ethical abstraction; extraction; 5D RSVP-Ising landscape; discrete geodesic; BEDMAS as Spherepop instance; unistochastic interface matrix.

Relationships to Other Frameworks. Subsumes CLIO's projection thesis by pro-

viding a deeper account of why projection is always lossy: the loss is the cost of the completed inner computation. Connects Spherepop collapse to thermodynamic reduction. Connects RSVP's lamphrodyne relaxation to computational normalization. Grounds the ethical abstraction versus extraction distinction that connects CLIO to Repair Theory.

Major Works. *Abstraction as Reduction*; relevant sections of *Spherepop Foundations*; *Computing with Spherepop*.

Open Problems. Whether the Abstraction-Reduction Equivalence theorem can be made formally precise as a natural isomorphism in a suitable category. Whether the RSVP-Ising embedding provides a thermodynamic lower bound on the cost of any abstraction step. Whether ethical abstraction can be formalised as a constraint on CLIO projection operators.

F.0.6. Active Geodesic Inference

Historical Origin. Developed as an attempt to define intelligence precisely enough to generate empirical predictions distinguishing it from standard optimisation or prediction accounts. Emerged from the intersection of RSVP thermodynamics, Spherepop commitment semantics, and the failure of distillation to preserve reasoning quality in large language models.

Key Dependencies. RSVP (whose Hamiltonian is recovered as a concrete instantiation of the entropy monotonicity axiom); Spherepop (execution substrate); HYDRA (cognitive architecture realisation); Coordination Geometry (synchronisation axiom).

Purpose. Central Claim. Intelligence is the capacity of a system to remain within a family of dynamically admissible, low-action histories by actively reshaping its configuration space's geometry. Successful reasoning trajectories are low-energy configurations in a five-dimensional spin field. Semantic isomers are distinct metastable minima of the RSVP energy functional corresponding to different internal reasoning topologies that project to the same external answer. Mixing or distilling incompatible semantic isomers drives systems into frustrated phases. Reasoning failures are phase transitions, not smooth degradation.

Core Objects. Semantic isomer; geodesic width; action stability; trajectory degeneracy; entropy commitment ratio; phase transition sharpness; hysteresis index; cross-scale consistency; Gibbsian bond selection; multi-component order parameter; isomeric multiplicity; low-action history; admissible trajectory.

Relationships to Other Frameworks. Recovers RSVP Hamiltonian from semantic axioms (axiom 2). Uses Spherepop as its execution calculus (history sensitivity and irreversibility by construction). Informs HYDRA architecture through the synchronisation coupling and Gibbs bond selection axioms. Generates predictions about coordination geometry through the multi-component synchronisation axiom. Explains empirical phenomena in large language model distillation through semantic isomer multiplicity.

Major Works. *Active Geodesic Inference*.

Open Problems. Whether the six axioms are mutually independent (removing any one collapses a distinct aspect of the theory). Empirical validation of geodesic width as a generalisation predictor. Whether semantic isomers can be directly detected in transformer residual streams. The relationship between AGI's variational principle and the Spherepop Lagrangian over option spaces.

G. Integrative and Applied Frameworks

G.0.1. HYDRA

Historical Origin. Emerged from the dissolution of RSVP Consciousness Dynamics into multiple specialist frameworks. Once CLIO, Spherepop, Coordination Geometry, and Preservation/Ecphory had each developed sufficiently, the project of synthesising them into a cognitive architecture became tractable.

Key Dependencies. RSVP; CLIO; Spherepop; Preservation/Ecphory (all required simultaneously). Coordination Geometry (neural synchronisation layer).

Purpose. To synthesise RSVP, CLIO, Spherepop, and Preservation/Ecphory into a complete cognitive architecture that explains intelligence as the interaction of constraint-processing systems operating on admissibility landscapes. **Central Claim.** Intelligence is the coordinated activity of multiple constraint-processing

systems. No single framework is sufficient; cognition requires admissibility dynamics, projection, event-theoretic formation, and retrieval operating in concert. HYDRA is the first large-scale attempt to operationalise multiple primary theories simultaneously.

Core Objects. Constraint-processing system; admissibility landscape navigation; projection layer; event history; memory retrieval; planning trajectory; recursive reasoning.

Relationships to Other Frameworks. HYDRA is a junction node requiring RSVP, CLIO, Spherepop, and Preservation/Ecphory as inputs. It is the primary integrative descendant of RSVP Consciousness Dynamics. Coordination Geometry informs its treatment of neural synchronisation.

Major Works. HYDRA architecture papers and notes.

Open Problems. Whether HYDRA's architecture can be derived from first principles within the Admissibility Program, or whether it requires independent cognitive assumptions. Formal relationship between HYDRA planning trajectories and RSVP geodesics on admissibility manifolds.

G.0.2. Process-Native Computing

Historical Origin. Grew from sustained engagement with Unix pipeline philosophy, Karl Fant's Null Convention Logic, and the practical experience of working in event-driven physical systems. The Spherepop calculus provided the formal bridge between that practical orientation and the theoretical frameworks.

Key Dependencies. Reachability Ontology (philosophical); Spherepop (event-theoretic primitives); TARTAN (constraint-preserving decomposition); Coordination Geometry (synchronisation mechanisms).

Purpose. To apply the philosophical and formal commitments of the Admissibility Program to software architecture and operating system design, reconceiving computation as a network of propagating processes rather than applications and files. **Central Claim.** Computers should be organised around processes, not objects. State, persistence, and identity should be redefined in terms of event histories, collapse residues, and reachability rather than stored values and addresses.

Core Objects. Propagating process; event-driven identity; persistence layer; phase synchronisation; custodian process; null convention; Unix pipeline.

Relationships to Other Frameworks. Draws on Reachability Ontology for philosophical justification, Spherepop for event-theoretic computational primitives, TARTAN for constraint-preserving decomposition, and Coordination Geometry for synchronisation mechanisms. Provides theoretical grounding for AyeOS in the adjacent ecosystem.

Major Works. *When the Formalism Becomes the Interface*; *Coordination Geometry*; Karl Fant and Null Convention Logic essays.

Open Problems. Whether the Spherepop event calculus is expressive enough to serve as a complete computational foundation. The relationship between TARTAN tiling and operating system scheduling.

G.0.3. Civilisation and Institutional Geometry

Historical Origin. Extended from early social and economic essays applying RSVP admissibility concepts to governance and public finance. Repair Theory provided the mature explanatory framework for institutional persistence.

Key Dependencies. Repair Theory (primary explanatory mechanism); RSVP (admissibility landscape concepts); Coordination Geometry (distributed institutional coordination).

Purpose. To apply Repair Theory, RSVP, and Coordination Geometry to social, economic, and institutional systems, explaining resilience, failure, and reform in terms of admissibility, reachability, and repair. **Central Claim.** Institutional persistence is explained by repair, not construction. Civilisational failure is the loss of admissible coordination regions. Fiscal and political reachability constrain the space of implementable policy.

Core Objects. Markov boundary; coordination cost; undo stack; institutional repair; fiscal reachability; proxy permanence; admissible policy space.

Relationships to Other Frameworks. Draws directly on Repair Theory for its central explanatory mechanism and on RSVP for admissibility landscape concepts. Coordination Geometry informs its treatment of distributed institutional coordina-

tion.

Major Works. *Civilisation's Undo Stack*; *Fiscal Reachability and the Geometry of Public Finance*; *Proxy Permanence Failure*; *Broken Tools for a Breaking World*.

Open Problems. Whether institutional repair relations satisfy the same formal conditions as biological repair relations, which would unify the two applications of Repair Theory. Empirical testing of fiscal reachability constraints against historical policy data.

Appendix B Research Corpus

This appendix catalogues the major works of the Flyxion research program organised by framework. Each entry uses the following fields where known: *Type* (monograph, paper, essay, software, or working paper); *Framework* (primary theoretical home); *Status* (published, manuscript, or in development); *Role* (function within the program); *Key Dependencies* (frameworks required to interpret it); *Descendants* (frameworks or works it directly enables). The catalogue prioritises works cited in the body of this document or constitutive of a named framework.

Foundational Ontology

Frozen Processes
Type: Essay *Status*: Published
Role: Primary statement of the trajectory-over-object ontological commitment.
Key Dependencies: None — foundational layer
Descendants: Reachability Ontology, RSVP, Spherepop, Repair Theory

From Preservation to Reachability
Type: Monograph *Status*: Published
Role: Distinguishes physical persistence from reachability; foundational for Preservation/Ecphory.

Key Dependencies: Reachability Ontology
Descendants: Preservation/Ecphory, HYDRA

The Geometry of Reachable Futures
Type: Essay *Status*: Published
Role: Articulates the reachability-as-ontology thesis in its clearest form.
Key Dependencies: None — foundational layer
Descendants: RSVP, Civilisation Geometry

The Secret Life of Nouns
Type: Essay / comic series *Status*: Published
Role: Communication layer; argues that objects are nominalisations of processes.
Key Dependencies: Reachability Ontology
Descendants: Communication layer

Verbs Masquerading as Nouns
Type: Essay *Status*: Published
Role: Companion piece establishing the linguistic evidence for process primacy.
Key Dependencies: Reachability Ontology
Descendants: Communication layer

RSVP

The Admissibility Field
Type: Monograph *Status*: Published
Role: Core statement of the $(\Phi, \mathbf{v}, S)$ field triple and admissibility landscape concept.
Key Dependencies: Reachability Ontology
Descendants: CLIO, TARTAN, HYDRA, Coordination Geometry

Axioms for a Falling Universe
Type: Paper *Status*: Published
Role: Formal axiomatic development of RSVP cosmology.
Key Dependencies: RSVP
Descendants: Three Smoothing Mechanisms

Three Smoothing Mechanisms in Early Cosmology
Type: Paper *Status*: Published
Role: Develops lamphrodyne relaxation as alternative to inflationary smoothing.
Key Dependencies: RSVP
Descendants: Cosmology applications

Constraint-Compatible Continuity Binding
Type: Paper *Status*: Published
Role: Addresses how RSVP fields maintain structural continuity under constraint erosion.
Key Dependencies: RSVP
Descendants: TARTAN

Gravity as Entropy Descent
Type: Commentary *Status*: Published
Role: Situates RSVP relative to Jacobson and Verlinde; argues for richer thermodynamic ontology.
Key Dependencies: RSVP, AKSZ/BV Quantization
Descendants: Cosmology applications

Derived L-System Sigma Models
Type: Paper *Status*: Working paper
Role: Combines derived geometry, L-systems, and BV quantization; part of the formalization program.
Key Dependencies: RSVP, Derived Algebraic Geometry, AKSZ/BV
Descendants: Holonomic Space

Holonomic Space
Type: Monograph *Status*: In development
Role: Independent formalization strand using sheaf theory and variational dynamics.
Key Dependencies: RSVP, Derived Algebraic Geometry
Descendants: Preservation/Ecphory, TARTAN

CLIO

Hidden Manifolds
Type: Essay *Status*: Published
Role: Introduces projection operators and the hidden manifold concept; foundational for CLIO.
Key Dependencies: Reachability Ontology, RSVP
Descendants: CLIO, TARTAN, Semantic Navigation

Abstraction as Reduction
Type: Monograph *Status*: Published
Role: Proves abstraction is completed inner computation; establishes Abstraction-Reduction Equivalence across lambda calculus, NCL, category theory, and RSVP.
Key Dependencies: CLIO, Reachability Ontology, Spherepop
Descendants: HYDRA, Semantic Navigation, Active Geodesic Inference

The Admissibility Field (CLIO sections)
Type: Monograph *Status*: Published
Role: Connects CLIO projection operators to RSVP field dynamics.
Key Dependencies: RSVP, CLIO
Descendants: TARTAN

Spherepop

Spherepop: Geometry, Cognition, and the Transparency of Computation
Type: Monograph *Status*: Published
Role: Primary statement of the event calculus; defines formation, collapse, refusal, binding, residue.
Key Dependencies: Reachability Ontology
Descendants: Structured Irreversibility, HYDRA, Process-Native Computing

The Autonomy of Refusal
Type: Paper *Status*: Published
Role: Establishes refusal as an autonomous primitive with a non-representability theorem; reconceives AI governance as exogenous refusal.

Key Dependencies: Spherepop, Reachability Ontology
Descendants: Civilisation Geometry, Throwing the Game

Structured Irreversibility
Type: Paper *Status*: Published
Role: Proves SP is initial in EDSMC; constructs functor $F : \mathbf{SP} \to \mathbf{RSVP}$; formalises worldhood via sheaf theory; resolves the RSVP-Spherepop interface question.
Key Dependencies: Spherepop, RSVP
Descendants: Active Geodesic Inference, Process-Native Computing

The Forkability of Time
Type: Paper *Status*: Published
Role: Extends Spherepop history-forking into constitutional architecture; proposes negative-rights arbiter contracts, portable event histories, and mandatory exit protocols as civilisational infrastructure.
Key Dependencies: Spherepop, Civilisation Geometry
Descendants: Civilisation Geometry

History as Identity
Type: Paper *Status*: Published (multiple versions)
Role: Central statement that identity is constituted by irreversible event history, not by substance or continuity of parts; includes categorical interpretation as free traced monoidal category.
Key Dependencies: Spherepop, Reachability Ontology
Descendants: MEM|8, Preservation/Ecphory, Process-Native Computing

Scope as Geometry
Type: Paper *Status*: Published
Role: Formalises scope as a topological boundary with real reachability consequences; motivates Spherepop as a history-first foundation for computation.
Key Dependencies: Spherepop, TARTAN
Descendants: Spherepop Calculus, Process-Native Computing

The Calculus of Commitment
Type: Paper *Status*: Published
Role: Derives lambda calculus, type theory, stack machines, and monads as special cases of merge-collapse dynamics; thermodynamic interpretation of computation.
Key Dependencies: Spherepop, CLIO
Descendants: Abstraction as Reduction, Process-Native Computing

Operational Mereology
Type: Paper *Status*: Published
Role: Replaces set-theoretic foundations with event-sourced mereology; prevents Russell-style paradoxes via operational containment; aligns with databases and distributed systems.
Key Dependencies: Spherepop, Reachability Ontology
Descendants: Process-Native Computing, Spherepop OS

Active Geodesic Inference
Type: Monograph *Status*: Published
Role: Defines intelligence as maintenance of low-action admissible histories; six axioms; reconstructs RSVP Hamiltonian; introduces semantic isomers; generates empirical predictions about reasoning model distillability.
Key Dependencies: RSVP, Spherepop, CLIO, Coordination Geometry
Descendants: HYDRA, Civilisation Geometry

Computation After Storage
Type: Paper *Status*: Published
Role: Develops entropic theory of semantic infrastructure; proves merge is not lossless; introduces semantic locality; uses sheaf theory for distributed semantic coherence; proves semantic CAP and undecidability of optimal merge.
Key Dependencies: Spherepop, CLIO, RSVP
Descendants: Process-Native Computing, Civilisation Geometry

Computation as Semantic Maintenance
Type: Paper *Status*: Published
Role: Knowledge as macroscopic property of organised matter; person-byte limits; scale-dependence of knowledge growth; knowledge loss as default state; computational pathologies as semantic failure.
Key Dependencies: CLIO, Repair Theory, Reachability Ontology
Descendants: Civilisation Geometry, HYDRA

Event-Historical Aggregation
Type: Paper *Status*: Published
Role: Redefines map-reduce as irreversible commitment rather than value computation; subsumes CRDT semantics; models attention as event-historical aggregation; introduces auditability and controlled forgetting.
Key Dependencies: Spherepop, TARTAN, CLIO
Descendants: Process-Native Computing, Computation After Storage

Throwing the Game
Type: Paper *Status*: Published (two versions)
Role: Non-representability theorem for refusal; distinguishes refusal from preference change; proposes stabilisation-based halting criterion; reinterprets active inference to require commitment variables.
Key Dependencies: Spherepop, The Autonomy of Refusal
Descendants: Civilisation Geometry, AI alignment theory

Sheaf of Flow Obstructions
Type: Paper *Status*: Published
Role: Connects Spherepop scope and refusal to sheaf-theoretic cohomological obstruction; formalises crowd-flow and queue dynamics as obstruction phenomena; bridge to TARTAN.
Key Dependencies: Spherepop, TARTAN, RSVP
Descendants: TARTAN, Holonomic Space

Spherepop OS
Type: Design document *Status*: Published
Role: Full operating system design using append-only relational event log; kernel as deterministic replay interpreter; speculative branches; sheaf-theoretic view separation; formal replay equivalence theorem.
Key Dependencies: Spherepop, Process-Native Computing
Descendants: AyeOS (8b.IS ecosystem)

The Geometry of Spherepop
Type: Monograph *Status*: Published
Role: Extended geometric treatment; entropic trust and mutual corrigibility via Spherepop calculus; RSVP plenum as base category; application to AI governance and co-evolutionary alignment.
Key Dependencies: Spherepop, RSVP, Coordination Geometry
Descendants: HYDRA, Active Geodesic Inference

The History of Spherepop
Type: Essay *Status*: Published
Role: Traces Spherepop's origins through Wittgenstein's language games, arithmetic precedence, lambda calculus, and Turing machines; positions it relative to category theory, type theory, and denotational semantics.
Key Dependencies: Spherepop
Descendants: Communication and pedagogy layer

Spherepop Trajectory Collapse
Type: Paper *Status*: Published
Role: Game and tool externalising semantic uncertainty as an interactive field of hypotheses; collapse mechanics as hypothesis space reduction; RSVP, category-theoretic, and sheaf-theoretic interpretations.
Key Dependencies: Spherepop, RSVP, CLIO
Descendants: Semantic Navigation, Preservation/Ecphory

Spherepop Foundations
Type: Paper *Status*: Published
Role: Amplitwistor representation of Spherepop; collapse as holomorphic scattering; twistor-RSVP coupling; hierarchical lamphrodynamic evolution; subsumes lambda calculus, Turing machines, and neural architectures.
Key Dependencies: Spherepop, RSVP, Derived Algebraic Geometry
Descendants: Active Geodesic Inference

Intelligence Explosion
Type: Paper *Status*: Published
Role: Argues GitHub as planetary-scale procedural substrate; admissibility geometry of repository developmental trajectories; LLMs as navigational accelerants over this substrate; formalises admissibility score.
Key Dependencies: Spherepop, CLIO, RSVP
Descendants: Active Geodesic Inference, Semantic Navigation

Attention as Minimal Relational Interaction
Type: Paper *Status*: Published
Role: Derives self-attention as ϕ^4 interaction in relational field theory from structural axioms; BV formalism; entropy-driven phase transitions; attention as phase-dependent phenomenon.
Key Dependencies: RSVP, CLIO, Derived Algebraic Geometry
Descendants: HYDRA, Active Geodesic Inference

Entropy of Austerity
Type: Paper *Status*: Published
Role: Models austerity as low-entropy attractor configuration in social plenum; Spherepop scope events as class-discipline; nonlocal RSVP model of institutional forcing; re-democratisation as topological expansion.
Key Dependencies: RSVP, Spherepop, Civilisation Geometry
Descendants: Civilisation Geometry

Introducción a Spherepop (Spanish)
Type: Essay *Status*: Published (two versions)
Role: Accessible introduction; connects Spherepop to Whitehead process ontology, Badiou event philosophy, and Landauer's principle; historical mereology.
Key Dependencies: Spherepop
Descendants: Communication layer

Spherepop compiler
Type: Software (C) *Status*: Active development
Role: Full compiler: lexer, parser, runtime, bytecode VM, geometry subsystem, sheaf semantics layer, standard library, test suite, visualizer; example programs execute claims from CLIO, Preservation/Ecphory, and Semantic Navigation.
Key Dependencies: Spherepop, CLIO, TARTAN, Preservation/Ecphory, Semantic Navigation
Descendants: Process-Native Computing, AyeOS

Spherepop prototypes
Type: Software (Python, Haskell, Racket, Forth) *Status*: Published
Role: Multi-language implementations exploring different computational semantics; Haskell prototype emphasises type-theoretic properties; Racket emphasises macro-based scope; Python emphasises accessibility.
Key Dependencies: Spherepop
Descendants: Spherepop compiler

Spherepop event log system
Type: Software (shell) *Status*: Active development
Role: Unix-pipeline-compatible overlay, fork, merge, rebase, replay, and policy-check on event histories; directly instantiates history-as-identity and structured irreversibility theses.
Key Dependencies: Spherepop, History as Identity, Structured Irreversibility
Descendants: Process-Native Computing, AyeOS

Adaptive Trust Dynamics corpus
Type: Essay corpus (40 essays) *Status*: Published
Role: Applied Spherepop analysis of trust, commitment, and institutional dynamics across two cycles: Diagnosis and Renewal.
Key Dependencies: Spherepop, Civilisation Geometry
Descendants: Civilisation Geometry

Repair Theory

Repair as a Fundamental Category
Type: Monograph *Status*: Published
Role: Defines repair relation, restoration geometry, repair latitude; inverts the construction/persistence hierarchy; frames knowledge as repair infrastructure.
Key Dependencies: Reachability Ontology, RSVP
Descendants: Civilisation Geometry, Computation as Semantic Maintenance

Persistent Anomalies and the Geometry of Ontology Revision
Type: Monograph *Status*: Published
Role: Earliest explicit precursor to Repair Theory, CLIO, and Reachability Ontology; topological obstruction framework for distinguishing minor errors from structural failure.
Key Dependencies: None — precursor work
Descendants: Repair Theory, CLIO, TARTAN

Secondary Formalisms

TARTAN (sections of The Admissibility Field)
Type: Technical notes *Status*: Published
Role: Defines constraint-preserving recursive tiling; admissibility inheritance across decomposition scales.
Key Dependencies: CLIO, RSVP
Descendants: Process-Native Computing, Holonomic Space

Coordination Geometry as a General Principle
Type: Monograph *Status*: Published
Role: Primary statement of the coordination manifold framework; Kuramoto synchronisation; neuromorphic systems; empirical grounding distinguishing it from

standard synchronisation models.
Key Dependencies: RSVP, Reachability Ontology
Descendants: HYDRA, Process-Native Computing, Active Geodesic Inference

From Preservation to Reachability
Type: Monograph *Status*: Published
Role: See Foundational Ontology entry; also primary statement of Preservation/Ecphory: ecphoric activation thresholds, retrieval landscape topology, reachability vs persistence.
Key Dependencies: Reachability Ontology, RSVP, CLIO, Spherepop
Descendants: HYDRA, MEM|8

Semantic Navigation and Preference Fields corpus
Type: Papers and software *Status*: Published
Role: Preference fields as attractors/repellers on semantic manifolds; admissibility-filtered retrieval; EmbedFilter implementation.
Key Dependencies: CLIO, RSVP
Descendants: Spherepop Trajectory Collapse, HYDRA

Active Geodesic Inference
Type: Monograph *Status*: Published
Role: Primary statement of AGI framework; six axioms; semantic isomers; reconstructs RSVP Hamiltonian; geodesic width metrics; empirical predictions distinguishing from classical optimisation.
Key Dependencies: RSVP, Spherepop, CLIO, Coordination Geometry
Descendants: HYDRA

Integrative Frameworks

HYDRA architecture papers
Type: Papers and notes *Status*: Active development
Role: Primary cognitive architecture synthesising RSVP, CLIO, Spherepop, and Preservation/Ecphory; planning trajectories as RSVP geodesics.
Key Dependencies: RSVP, CLIO, Spherepop, Preservation/Ecphory, Active Geodesic

Inference
Descendants: Process-Native Computing, Civilisation Geometry

When the Formalism Becomes the Interface
Type: Essay *Status*: Published
Role: Primary statement of process-native computing philosophy; Unix pipeline as Spherepop event stream; computation as propagating process rather than file manipulation.
Key Dependencies: Spherepop, Reachability Ontology, TARTAN
Descendants: AyeOS, Spherepop OS

Karl Fant and Null Convention Logic essays
Type: Essays *Status*: Published
Role: Situate Process-Native Computing relative to asynchronous computing; NCL signal stabilisation as instance of Abstraction as Reduction; completion-governed computation as process-native model.
Key Dependencies: Spherepop, Abstraction as Reduction
Descendants: Process-Native Computing, AyeOS

Civilisation and Institutional Geometry

Civilisation's Undo Stack
Type: Essay / monograph *Status*: Published
Role: Central statement of institutional repair and reversibility; Markov boundaries of institutional action; coordination costs as admissibility constraints.
Key Dependencies: Repair Theory, RSVP, Coordination Geometry
Descendants: Fiscal Reachability, Proxy Permanence Failure

Fiscal Reachability and the Geometry of Public Finance
Type: Paper *Status*: Published
Role: Applies reachability framework to public economics; fiscal crisis as stratum transition; admissible policy space.
Key Dependencies: Reachability Ontology, RSVP, Repair Theory
Descendants: Proxy Permanence Failure

Proxy Permanence Failure
Type: Paper *Status*: Published
Role: Analyses carbon governance failure via admissibility erosion; proxy permanence as structural misrepresentation; RSVP-TARTAN-CLIO triple application.
Key Dependencies: RSVP, CLIO, TARTAN, Repair Theory
Descendants: Civilisation Geometry

Broken Tools for a Breaking World
Type: Essay *Status*: Published
Role: Broad application of Repair Theory to contemporary civilisational problems; institutional repair latitude under stress.
Key Dependencies: Repair Theory, Civilisation Geometry
Descendants: Policy applications

The Forkability of Time (Civilisation entry)
Type: Paper *Status*: Published
Role: Constitutional architecture for causal sovereignty; portable event histories; negative-rights arbiter contracts; mandatory exit protocols; digital reality as common good.
Key Dependencies: Spherepop, Civilisation Geometry, Reachability Ontology
Descendants: 8b.IS AyeOS

Pedagogical and Communication Works

Calculus as the Geometry of Relationship and Controlled Change
Type: Textbook manuscript *Status*: In development
Role: Reframes calculus as a geometric language for transformation; most accessible entry point to the broader program's process-first commitments.
Key Dependencies: Reachability Ontology, CLIO
Descendants: Pedagogy and communication layer

Flyxion Comics series
Type: Comics and visual essays *Status*: Ongoing
Role: Mythopoetic and communication layer; expresses program commitments in

visual and narrative registers; some series (Yarncrawlers of Titan, Worlds of If, The Trajectory Universe) embed original theoretical content in fictional framing.
Key Dependencies: All primary theories
Descendants: General readership; source of new examples and analogies

The Admissibility Program — presentation slides
Type: Visual presentation (NotebookLM) *Status*: Published
Role: Two-version slide deck produced with NotebookLM constituting an independent visual communication layer. The core deck covers: the central conjecture, the five-layer stratigraphy, Reachability Ontology, RSVP, Spherepop, the $F : \mathbf{SP} \to \mathbf{RSVP}$ functor, CLIO and the Noun Fallacy, Repair Theory, Active Geodesic Inference with semantic isomer phase space, HYDRA, Process-Native Computing with the 8b.IS stack, and the three open frontiers. Contains formulations independently sharper than those in the monograph corpus, including the epigraph *Reality is Reachability. Keep the branches open.*
Key Dependencies: All primary theories; this document
Descendants: General and academic readership

The Stone Piano Hypothesis
Type: Research paper *Status*: In preparation
Role: Investigates whether 176,500-year-old Neanderthal structures in Bruniquel Cave functioned as intentional lithophones; archaeological acoustics; classified outside the core dependency graph.
Key Dependencies: None — peripheral investigation
Descendants: None within the Admissibility Program