A WORLD WAITING *to Be Brought Forth*

From Unitive Science to Life-Coherent Civilization

Relational Ontology, Living Autonomy,
and the Ethics of Responsible Participation

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BSc (Biology), MBBS, DM (Internal Medicine)

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Abstract

Humanity's ecological, political, technological, and social crises are increasingly recognisable as symptoms of a deeper disorder in how reality, knowledge, and value are understood. Jude Currivan's unitive science of a living universe responds by proposing that the universe is relational, informational, interconnected, and evolutionarily emergent. This offers a powerful cosmology of belonging, but also raises scientific and philosophical questions. Quantum entanglement does not by itself demonstrate universal consciousness; the global topology and finitude of the universe remain unresolved; and holographic cosmology remains a developing research programme rather than an established description of our universe (Nobel Prize Outreach, 2022; European Space Agency, 2001; Perimeter Institute, n.d.).

This paper brings Currivan's proposal into constructive dialogue with Humberto Maturana's biology of cognition, John McMurtry's life-value ontology, Johan Galtung's analysis of violence, and the developing concept of institutional autopoietization. It argues that unitive science and life-coherence are mutually corrective. Unitive science enlarges life-coherence by locating living beings within a cosmological narrative of emergence, participation, wonder, and belonging. Life-coherence strengthens unitive science by supplying an explicit value criterion, preserving the autonomy and boundaries of living beings, distinguishing life-serving from pathological forms of coherence, and translating worldview transformation into institutional practice.

The proposed synthesis moves from separation to relationality, from relationality to living autonomy, from autonomy to life-value, and from life-value to corrigible institutions and civil commons. Its central claim is that relational unity becomes ethically meaningful only when relationships, technologies, and institutions are evaluated by whether they protect, restore, and enlarge the capacities of living beings and the systems that sustain them, without transferring disabling costs to other persons, species, ecosystems, or future generations.

Keywords: unitive science, life-coherence, living universe, relational ontology, autopoiesis, structural coupling, life-value, life-capacity, civil commons, institutional autopoietization, structural violence, information, emergence, pluriversality, regenerative civilization, responsible participation

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Executive Summary

The planetary predicament is commonly described through visible manifestations: climate destabilisation, ecosystem degradation, war, inequality, displacement, chronic illness, social fragmentation, and technological capture. These crises arise within a deeper civilizational grammar that separates economy from ecology, health from social conditions, knowledge from responsibility, technological capability from ethical purpose, and institutional success from the well-being of those affected. The result is a Great Inversion: living beings are increasingly required to adapt to systems originally created to serve life.

Currivan's unitive science intervenes at this worldview level. It challenges the inherited image of reality as a collection of separate, inert objects and presents a universe that is relational, informational, interconnected, and emergent (Currivan, 2026). Its enduring contribution is less a final physical theory than a cosmology of participation capable of awakening wonder, humility, and responsibility. The paper is explicitly presented as an invitation to investigation and dialogue, yet some claims move too quickly from evidence to metaphysical conclusion.

A responsible appraisal must distinguish four epistemic levels: established empirical findings; active scientific hypotheses; philosophical interpretations; and metaphysical or spiritual commitments. Bell-test experiments establish violations of Bell inequalities, not universal consciousness. A spatially flat universe may be finite or infinite. Celestial holography is an active frontier programme, not empirical confirmation that our universe is literally a hologram. Landauer's principle connects information erasure to thermodynamic cost, but does not demonstrate that all physical information is semantically meaningful (Landauer, 1961; Nobel Prize Outreach, 2022; European Space Agency, 2001; Perimeter Institute, n.d.).

The decisive limitation is ethical: interconnection does not automatically produce justice. Tumours, empires, surveillance systems, and extractive markets can be highly connected and internally coherent. The framework therefore distinguishes system coherence - the ability of a system to reproduce itself - from life-coherence - the alignment of that reproduction with the capacities and conditions of living beings.

> *A relationship, practice, technology, or institution is life-coherent insofar as it protects, restores, or enlarges the capacities of living beings and the life-supporting systems on which they depend, without transferring disabling costs to other lives or future conditions.*

Maturana and Varela clarify living autonomy: an organism is not an isolated object, but an autopoietic unity that maintains identity through recurrent processes and structural coupling with its environment (Maturana & Varela, 1980). McMurtry supplies the life-value criterion and the concept of civil commons: shared institutions that secure universal access to the conditions of life (McMurtry, 2009-2011, 2013). Galtung reveals direct, structural, and cultural violence, and distinguishes negative from positive peace (Galtung, 1969, 1990). Institutional autopoietization explains how organisations created to heal, educate, govern, or inform may become increasingly organised around their own procedures, revenues, authority, and reputational survival.

The synthesis yields a four-stage civilizational grammar: unitive reality; living autonomy; life-coherent value; and responsible institutional praxis. It does not claim that a better future is cosmically guaranteed. It proposes that human beings can consciously conserve conditions in which more life-serving futures remain possible.

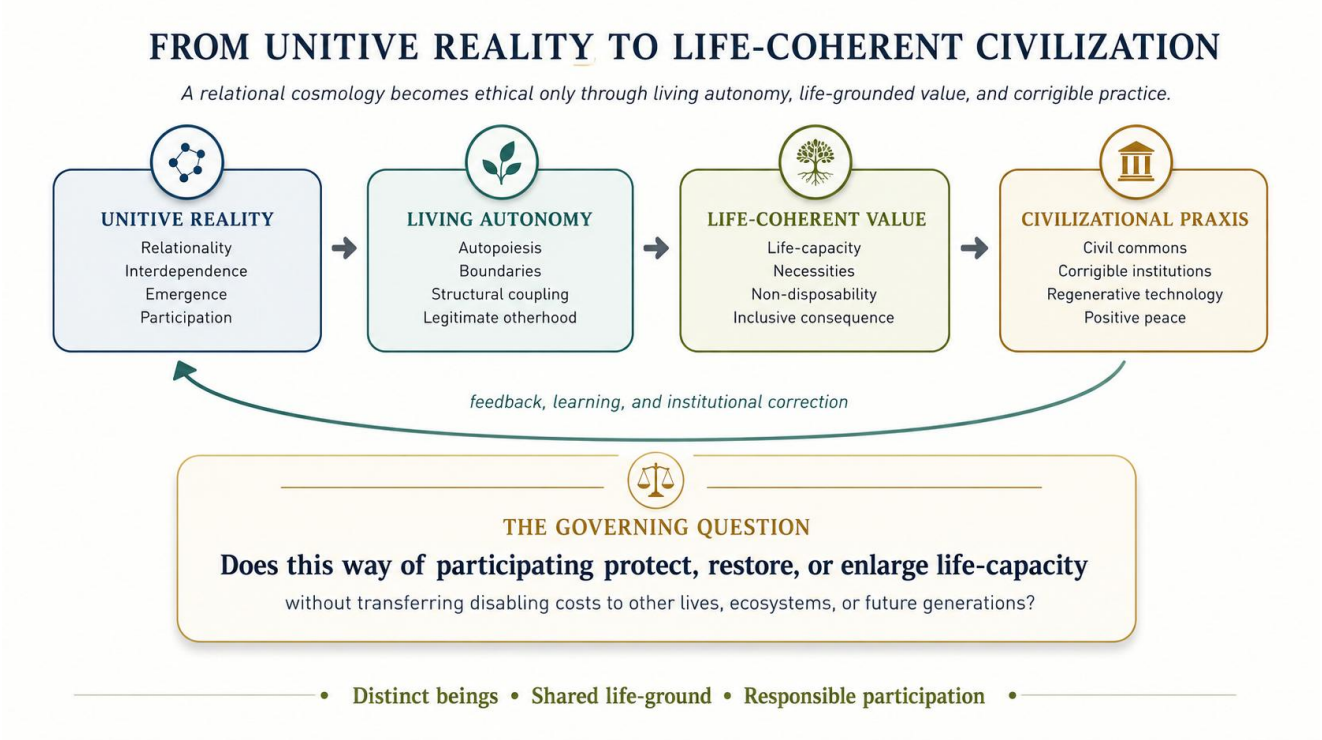

Figure 1. From unitive reality to life-coherent civilization. Relational ontology becomes ethically actionable through living autonomy, life-grounded value, and corrigible institutions.

Preface: The Intuition of a World Waiting to Appear

Some ideas arrive first as arguments. Others arrive as recognitions: a sense that something long implicit is seeking a form through which it can become visible. This paper began with such a recognition. Currivan's account of a unitive science appeared at a moment when the life-coherence framework had already been developing across medicine, political economy, peace studies, ecology, institutional analysis, and the philosophy of living systems. The encounter revealed both affinity and incompleteness.

Unitive science offered an expansive story of participation, emergence, and belonging. Life-coherence offered an evaluative question: how should relationships, technologies, and institutions be judged? It insisted that connection alone does not establish care, coherence alone does not establish health, and unity alone does not establish justice. The intuition at the origin of this paper was therefore that the two perspectives may be mutually beneficial.

This is not an attempt to construct a final theory of everything. Physics is not biology; biology is not ethics; ethics is not political economy; spiritual experience is not experimental evidence. Yet these domains are not without consequence for one another. A cosmology shapes what a civilization believes matter is. An ontology shapes what it believes a being is. An axiology determines what it recognises as valuable. An economy operationalises what it rewards. Institutions conserve the resulting patterns of action.

The phrase "a world waiting to be brought forth" does not imply that history inevitably bends toward flourishing. Worlds of domination and ecological ruin are also brought forth. It names a possibility: that humanity may become more conscious of the worlds its distinctions and institutions are producing, and may reorganise them so that knowledge, power, and technology become more answerable to life.

Part I - The Crisis of Separation

1. The Crisis Beneath the Crises

Humanity is living through a convergence of emergencies. Climate destabilisation, ecosystem loss, armed conflict, chronic illness, inequality, displacement, and technological concentration are usually administered as separate policy domains. That separation is convenient, but it hides recurrent mechanisms: living systems are reduced to measurable variables; benefits are concentrated while harms are displaced; short-term gains are separated from long-term consequences; and institutions protect their continuity by filtering feedback from affected persons and ecosystems.

The climate crisis cannot be understood only as excess greenhouse gas. It arises within an order that treats the atmosphere as a cost-free sink and future generations as absent stakeholders. The health crisis cannot be understood only as a shortage of treatment. It reflects food systems, labour conditions, housing, pollution, social isolation, commercial determinants of illness, and medical institutions oriented more readily to established disease than capacity restoration. The crisis of AI is not merely a technical-control problem; it concerns ownership of knowledge, data extraction, labour, energy, and the automated mediation of perception.

Separation is not merely an incorrect idea. It is an operational achievement. Economic accounting can separate profit from soil depletion; a hospital can separate an acute episode from the patient's home conditions; military language can translate destroyed lives into collateral damage. These distinctions permit systems to remain internally coherent while excluding consequences that would challenge their legitimacy.

What is excluded does not disappear. Pollution returns as disease. Depletion returns as scarcity. Suppressed trauma returns as fear and violence. The future returns as consequence. The crisis beneath the crises is the widening gap between the realities through which life is sustained and the abstractions through which institutions organise action.

2. The Mechanistic World and the Great Inversion

Mechanistic models remain indispensable where systems can be usefully analysed through components and measurable forces. The problem begins when a method becomes a total ontology. Organisms become machines, ecosystems become resources, persons become consumers or data profiles, and value becomes preference or price. What cannot be represented within the abstraction becomes vulnerable to neglect.

Human institutions are created as means. Economies provision life; healthcare protects health; education enlarges understanding; law secures coexistence; and technologies extend capacity. Yet means can become ends. The economy demands sacrifices to protect market confidence; healthcare requires patients to fit administrative pathways; education organises learning around institutional metrics; and technology reorganises attention to satisfy platform objectives. This is the Great Inversion: institutions cease to justify themselves by the life-functions they serve and compel life to adapt to institutional continuity.

Proxy capture accelerates the inversion. Indicators are necessary, but educational attainment can be reduced to test scores, health to biomarkers, scholarship to publication counts, and security to military capacity. Once proxies become targets, systems optimise the measure while the underlying reality deteriorates (Meadows, 1999, 2008).

The mechanistic worldview persists partly because it is compatible with control. What can be separated can be owned; what can be quantified can be priced; what can be standardised can be administered. A living world makes reciprocal demands. It has needs, boundaries, vulnerabilities, agency, and unpredictable

feedback. The relationship between worldview and power is therefore recursive: institutions privilege the knowledge forms that support their operation, and those knowledge forms legitimise the institutions.

3. From Objective Detachment to Responsible Participation

Objectivity protects inquiry from wishful thinking, dogma, and personal interest. The difficulty arises when objectivity is confused with complete detachment. Every observation is made by an embodied observer using distinctions, methods, instruments, and questions that reveal some aspects of reality while excluding others. Haraway's situated knowledge and Maturana's biology of cognition both challenge the fiction of a view from nowhere (Haraway, 1988; Maturana & Varela, 1992).

The recognition of participation does not abolish truth. It creates a more demanding objectivity in which assumptions, methods, interests, limitations, and consequences are disclosed. Knowledge changes the field into which it enters: a diagnosis changes how a patient is perceived; a model changes policy; a predictive algorithm changes behaviour; a cosmology changes belonging.

Maturana's concept of emotioning adds another layer. Reason always operates within a prior field of concern. Fear opens a domain of surveillance and control; competition opens ranking and strategic concealment; care notices vulnerability and interdependence. Data do not determine what should matter. Intelligence can optimise almost any objective after that objective is chosen.

Responsible participation begins when systems acknowledge that every law, budget, curriculum, technology, and institution conserves a world. The ethical question is whether the affected lives and ecosystems can send feedback that meaningfully changes that world.

Part II - The Promise and Limits of Unitive Science

4. Currivan's Cosmology of Belonging

Currivan's central intervention is to replace a universe of independent objects with a universe of relations. Entities are not first complete and then related; their properties and possibilities emerge through fields, interactions, histories, and networks. Human beings are expressions of the same cosmic history they seek to understand (Currivan, 2026).

This vision provides a story large enough for belonging. Human significance need not depend upon occupying the spatial centre of the cosmos. It can arise through participation: consciousness, language, and ethical reflection emerge within the universe and become modes through which the universe is interpreted. The formulation is philosophically suggestive even where the stronger claim that the universe itself is conscious remains metaphysical.

Currivan also reopens dialogue among scientific, Indigenous, philosophical, and spiritual traditions. Such dialogue is valuable when no tradition is reduced to evidence for another. Indigenous knowledge, for example, should not be treated merely as an ancient anticipation of contemporary physics; it is often inseparable from territory, practice, memory, and political responsibility (Kimmerer, 2013).

Her emphasis on emergence and cooperation is similarly productive. Biological evolution includes competition, but also symbiosis, collective regulation, and organism-environment interdependence. Mutation itself is not spatially uniform across genomes; however, evidence of mutation bias should not be interpreted as conscious or cosmic direction. The observed bias can be explained within evolutionary processes (Monroe et al., 2022).

5. Relationality, Information, and Emergence

Relationality is visible at several levels: physical entities are characterised through interactions; organisms continuously exchange matter and energy; ecosystems persist through interdependence; persons develop through attachment, language, and culture; and knowledge arises through relations among observers, methods, and phenomena. These levels should be connected without being treated as identical.

Information is especially vulnerable to conceptual blending. Shannon information concerns statistical distinctions and uncertainty, while physical information concerns states and correlations. Biological information gains functional significance within systems for which some correlations matter to continued viability. Semantic meaning arises within interpretation and shared language. Existential meaning concerns lived purpose, identity, grief, and belonging (Shannon, 1948; Kolchinsky & Wolpert, 2018).

Landauer's principle demonstrates that logically irreversible information processing has thermodynamic implications. It does not show that physical reality is composed of meaningful messages or that every pattern carries intention (Landauer, 1961). The movement from "information" to "meaningful in-formation" is philosophical and must be labelled as such.

Emergence resists both supernatural interruption and crude reductionism. New properties arise through organisation: a cell is composed of molecules, but living organisation is not found in a molecule considered alone; a culture depends upon persons, but its language and norms cannot be reduced to any single person. Emergence supports a process view of reality without proving a predetermined cosmic destination (Deacon, 2011; Capra & Luisi, 2014).

6. Four Epistemic Levels

A transdisciplinary synthesis becomes trustworthy when it marks the status of its claims. Four levels are especially useful.

- Established empirical findings: quantum entanglement, biological regulation, organism-environment interaction, ecosystem interdependence, and nonlinear emergence.
- Active scientific hypotheses: holographic descriptions of cosmological space-times, emergent space-time, competing cosmic topologies, and informational approaches to gravity.
- Philosophical interpretations: relational ontology, process metaphysics, information as fundamental structure, and participatory knowing.
- Metaphysical or spiritual commitments: universal consciousness, intrinsic cosmic purpose, sacredness, and the claim that the universe is literally alive.

The 2022 Nobel Prize recognised experiments with entangled photons, violations of Bell inequalities, and quantum-information science. These findings exclude broad classes of local hidden-variable explanations; they do not establish that the cosmos is one conscious mind (Nobel Prize Outreach, 2022). Likewise, a geometrically flat universe can be finite or infinite depending upon global topology, and current observation does not settle the question (European Space Agency, 2001).

The holographic principle is a major theoretical development, especially in quantum gravity, but celestial holography remains an emerging field seeking a formulation applicable to space-times like ours (Perimeter Institute, n.d.). Currivan's info-dynamics is explicitly presented as her own proposal and requires formal definitions, units, boundary conditions, mathematical derivation, and falsifiable predictions before it can function as a physical theory (Currivan, 2026).

Epistemic humility is not a retreat from meaning. Spiritual and metaphysical interpretations may be existentially important. Trust is protected when evidence, hypothesis, philosophy, and commitment are brought into dialogue without being collapsed.

7. Where Unity Is Not Enough

Interconnection is not goodness. A tumour is dynamically integrated with its host; an empire coordinates law and force; a surveillance platform integrates data; and an extractive market links actors across continents. Relation tells us that consequences travel. It does not tell us whether the relationship is just.

Coherence is likewise morally indeterminate. A bureaucracy can reliably reproduce exclusion. A propaganda system can maintain narrative consistency. A malignant cell population can conserve its proliferation. The necessary distinction is between system coherence and life-coherence.

Unity can conceal power when "we are all responsible" distributes moral burden equally across actors with radically unequal causal power, benefit, and vulnerability. It can erase difference when particular traditions are absorbed into a universal cosmology defined by others. It can also bypass wounded life when those suffering injustice are asked to transcend division before truth, safety, accountability, or repair.

Finally, no specific ethic follows automatically from the fact that nature is relational. Nature includes cooperation and predation, mutualism and parasitism, regeneration and extinction. An explicit criterion is required. The life-value criterion asks whether relations enable life-capacity across wider and more inclusive ranges without transferring avoidable disabling costs.

Part III - The Life-Coherence Corrective

8. Maturana: Living Autonomy and the Worlds We Bring Forth

Maturana and Varela's concept of autopoiesis identifies the organisation through which a living system recursively produces the components and boundary that realise it as a distinct unity. A cell is not merely enclosed by a membrane; the membrane is produced by the metabolic network it helps to constitute (Maturana & Varela, 1980).

This precision matters for the phrase "living universe." The universe may be dynamic, generative, self-organising, or spiritually experienced as alive. That does not by itself show that the universe is biologically autopoietic. Distinguishing biological, organisational, metaphorical, and spiritual meanings protects the specificity of living beings.

Boundaries are not simply illusions of separation. A membrane, immune system, personal boundary, cultural territory, or right to consent can enable relationship by preserving integrity. Healthy boundaries regulate openness. They avoid both total closure and uncontrolled invasion.

Structural coupling explains how autonomy and interdependence coexist. The environment perturbs, but does not mechanically specify, an organism's response. Effects depend upon the organism's history and structure. Human beings likewise transform their environments, and those environments subsequently transform development. The built environment affects movement; food systems affect metabolism; digital systems affect attention; war affects memory across generations.

To bring forth a world is not to create physical reality through thought. It is to enact domains of significance and action through recurrent distinctions and relationships. Land distinguished primarily as property gives rise to a different world from land distinguished as ancestor or commons. Ethics begins when the other is accepted as a legitimate other in coexistence (Maturana & Varela, 1992).

9. McMurtry: Life-Value, Life-Capacity, and the Civil Commons

McMurtry asks what common ground underlies diverse value claims. Every preference, market, institution, and cultural practice presupposes living beings with capacities to feel, think, move, relate, and act. Life is therefore not one optional value among others; it is the enabling ground of value (McMurtry, 2009-2011).

Life-capacity includes physiological integrity, nourishment, movement, cognition, relationship, meaningful agency, social participation, cultural expression, care, and future development. A condition has positive value insofar as it enables these capacities and negative value insofar as it unnecessarily disables them. This is objective without requiring cultural uniformity: food is universally necessary, while cuisines vary; belonging is necessary, while its forms vary.

McMurtry's life-sequence moves from life-requirement through means of life to enlarged life-capacity. The money-sequence moves from money through commodity or investment to more money. Money is useful when nested within the life-sequence; it becomes life-incoherent when financial expansion overrides health, community, and ecology (McMurtry, 2013).

Life-capital includes healthy bodies, ecosystems, knowledge, public health, education, social trust, care networks, and peace. Civil commons are the institutions through which societies secure shared access to these conditions: sanitation, healthcare, public education, libraries, environmental protections, social insurance, democratic institutions, and open knowledge.

The governing test asks what capacities are affected, which are enabled or disabled, across what range consequences are distributed, whether necessities are protected, and whether those affected can correct the process.

10. Galtung: Violence, Peace, and the Material Test of Unity

Galtung's foundational contribution was to show that violence cannot be reduced to visible acts of bodily injury. Structural violence exists when social arrangements produce avoidable gaps between actual and attainable life-capacity. A child killed by a bomb is recognised as a victim of violence; a child who dies because necessary medicine is unaffordable may be recorded as a statistic. The causal structure is less visible but no less organised (Galtung, 1969).

Cultural violence consists of narratives and symbols that legitimise direct and structural harm. Poverty becomes personal failure, civilian death becomes collateral damage, ecological destruction becomes development, and surveillance becomes convenience (Galtung, 1990).

Negative peace is the absence or reduction of direct violence. Positive peace is the presence of conditions that support just coexistence: access to necessities, meaningful participation, social trust, ecological security, and nonviolent mechanisms of correction. Civil commons are therefore infrastructures of positive peace.

A life-coherent peace must hold two truths together: no wound denied and no wound enthroned. Denied wounds return as inherited fear and violence; enthroned wounds can become permanent licences to dehumanise others. Memory should deepen resistance to disposability, not justify its transfer.

Any cosmology of unity must pass a material test: does it make preventable suffering more visible, identify unequal power, support repair, and transform the conditions under which people are denied water, food, care, safety, land, and voice?

11. Institutional Autopoietization and Pathological Coherence

Institutions are necessary for coordinating healthcare, education, law, science, infrastructure, and democratic life. Over time, however, an organisation may become increasingly organised around reproducing its own budgets, procedures, status, categories, and reputational security. "Institutional autopoietization" names this drift analogically; it does not claim that an institution is biologically autopoietic (Mingers, 1989; Luhmann, 1995).

The institution's founding social purpose may remain in its mission statement while its operations reproduce something else. Hospitals optimise billing and throughput; universities optimise ranking and publications; media optimise attention; platforms optimise engagement; public agencies optimise compliance. Symbolic substitution allows the institution to preserve an appearance of success as the underlying life-function deteriorates.

Feedback is filtered through internal categories. A patient's suffering becomes a complaint file; a worker's warning becomes a human-resources problem; a community's protest becomes reputational risk; ecological collapse becomes a compliance matter. The system responds to the existence of feedback rather than its meaning.

Corrigibility is therefore a central criterion of legitimacy: the capacity to receive evidence of harm and alter the operations producing it. It requires transparent information, protected dissent, affected-person participation, independent oversight, repair, and the power to change rules, budgets, and incentives.

Pathological coherence occurs when a subsystem successfully reproduces itself by degrading the larger life-system upon which it depends. A unitive institution knows it is connected. A life-coherent institution reorganises itself in response to what those connections do to life.

Part IV - Toward a Life-Coherent Unitive Framework

12. Relationality Without Erasure

A mature relational ontology must hold two truths together: no being exists alone, and no being should be reduced entirely to the relations through which another system perceives it. Relation participates in constituting identity, but does not exhaust it.

Difference is not an obstacle to unity. Care requires an other whose experience is not identical to one's own; dialogue requires perspectives not known in advance; democracy requires dissent; ecosystems require diversity. A unity that eliminates difference eliminates the conditions of learning and mutual transformation.

The legitimate other is not merely tolerated. The other possesses standing that can place limits upon one's projects. The patient is not legitimate only when compliant; the citizen only when supportive; the worker only when productive; the ecosystem only when useful. Greater power creates greater responsibility in asymmetric relationships.

Freedom is likewise relational. Living beings cannot be free of all constraint; they require enabling constraints such as language, law, education, ecological limits, and bodily regulation. Relational freedom is meaningful agency made possible through shared conditions without arbitrary domination.

A life-coherent unity is therefore coordinated flourishing: differentiated beings participating in a shared life-ground without being assimilated or rendered disposable.

13. Information Without Semantic Inflation

At least four domains of information should be distinguished: physical information, biological significance, semantic information, and existential meaning. Physical information concerns distinguishable states and correlations. Biological significance arises when a distinction contributes to the continued organisation of a system. Semantic information belongs to interpretation and reference. Existential meaning concerns significance as consciously lived.

Information is always relational: informative for what system, within what context, and with what consequence? A signal does not specify its own effect. The same hormone acts differently in different tissues; the same words comfort one person and threaten another. Living systems respond according to their own structure and history.

Data are not knowledge, and intelligence is not wisdom. Data require contextual interpretation; knowledge requires tested understanding; wisdom requires judgment about purpose and consequence. A system can optimise a destructive objective with great intelligence.

This distinction is crucial for artificial intelligence. Behavioural capability does not settle the question of subjective experience. Nor should uncertainty about machine consciousness distract from the undeniable effects AI systems have upon conscious beings. The primary ethical question is what their deployment does to agency, labour, knowledge, care, ecology, and power.

Information becomes life-coherent when it supports the capacity to perceive, understand, communicate, and act without reducing persons to objects of prediction and manipulation.

14. Emergence Without Premature Teleology

The universe has generated extraordinary novelty: atoms, stars, chemical diversity, planets, life, nervous systems, language, and culture. This fact is empirically modest but philosophically profound. Reality is generative; new organisations and capacities can appear.

Generativity does not prove destiny. Cosmic and biological history includes complexity and simplification, flourishing and extinction, adaptation and collapse. Direction within some processes should not be confused with a universal predetermined endpoint.

A useful distinction is between teleology and teleonomy. Organisms display goal-directed regulation that contributes to continued organisation. Human beings formulate conscious purposes. These local forms of purpose do not establish a single cosmic intention.

Emergence nevertheless has ethical significance because present action can preserve or foreclose future possibility. A healthy child, restored ecosystem, open educational system, or peaceful community contains capacities not yet realised. Violence and ecological destruction eliminate possibilities before they can appear.

Life-coherent hope is therefore not optimism that the universe guarantees progress. It is commitment to protecting conditions through which more life-serving futures remain possible.

15. Unity, Difference, and the Legitimate Other

Universal language can conceal a particular standpoint. A dominant culture may describe its own values as universal; a market system may present its model of rationality as human nature; a spiritual framework may interpret diverse traditions as incomplete versions of its own truth.

A life-coherent universal begins instead from conditions genuinely shared across difference: embodied vulnerability, dependence upon air, water, food, care, and ecological stability; the capacity for suffering; the need for relationship; and the possibility of learning and agency. These shared conditions protect rather than erase plurality.

Pluriversality can therefore be formulated as many worlds of meaning within one shared field of life-dependence. No worldview has the right to destroy the life-conditions of others, but no single cosmology should absorb all legitimate differences.

Conflict is not the opposite of unity. It arises wherever distinct beings possess different needs and interpretations. The question is whether conflict is organised through dialogue and correction or through dehumanisation and disposability. Reconciliation cannot be demanded before truth, safety, accountability, and repair.

Love, in Maturana's sense, is the conservation of the other's legitimacy. Institutionally, this means care systems that do not abandon difficult patients, educational systems that do not discard struggling learners, economies that do not deny necessities to those without purchasing power, and polities that protect dissent.

16. From Cosmic Belonging to Ethical Responsibility

A cosmology can change how humanity experiences itself, but belonging alone does not determine conduct. Ethical obligation arises when the capacities and vulnerabilities within relationships are recognised as valuable.

Responsibility may be understood as response-ability: the capacity and obligation to respond appropriately to foreseeable consequences. Knowledge and power therefore increase responsibility. Institutions with extensive data, resources, and causal reach carry wider obligations than individuals with limited choices.

The moral range of responsibility should expand with the actual range of consequence. A product's convenience must be considered alongside labour, extraction, waste, and climate impact. A national policy must include distant populations and future generations. A clinical intervention must consider access, function, quality of life, and social context.

Private virtue is necessary but insufficient. Life-serving action must be made easier through laws, public infrastructure, economic incentives, commons institutions, transparency, and participatory governance. A cosmology becomes civilizationally consequential only when it changes organised conditions.

The synthesis can be stated: because living beings are distinct yet mutually conditioning participants in a shared life-ground, relationships, technologies, and institutions should be organised so that each and all can develop their capacities without transferring disabling costs to others or the future.

Part V - Bringing Forth a Life-Coherent Civilization

17. Medicine and the Restoration of Capacity

Modern medicine has achieved extraordinary powers, but the person can disappear as the organ becomes a biomarker and the biomarker becomes the target. A life-coherent clinical encounter asks both what disease process is present and what capacities are threatened or could be restored.

Health is not merely absence of disease or complete well-being. It is the organised capacity to regulate, adapt, act, relate, and recover. A treatment may improve a laboratory value while leaving the patient weaker or unable to function; a modest intervention may have great life-value if it restores movement, cognition, dignity, or participation.

The therapeutic relationship is a form of structural coupling. Trust changes what can be disclosed; language changes what can be understood; power changes whether consent is meaningful. Relational care is not decoration added to technical medicine; it is part of the field through which care works.

Healthcare functions as a civil commons when access follows need, prevention is prioritised, essential knowledge is shared, financial barriers are reduced, and communities can influence service design. Clinical systems must be able to learn from patients and acknowledge uncertainty.

> *The clinical question is: Does this intervention protect, restore, or enlarge the person's capacity to live, while respecting autonomy and avoiding preventable harm?*

18. Economy and the Re-Embedding of Value

Every economy is fundamentally a system for organising access to the means of life. It determines who receives food, water, shelter, healthcare, education, energy, and voice; which resources are extracted; and who bears the costs. The economy is therefore an operational value system, nested within ecological systems it did not create.

Provisioning should precede accumulation. Markets and finance are useful means, but profitability cannot override universal necessities. Price communicates some forms of scarcity and preference, yet it does not measure the value of clean air, care, biodiversity, trust, cultural continuity, or future possibility.

A regenerative economy restores the conditions from which value arises. It reinvests in health, education, soil, ecosystems, care, public knowledge, and community resilience. Regeneration is not branding; it is demonstrated maintenance or enlargement of life-capital.

Ownership and power matter. Those who control land, infrastructure, platforms, finance, and data determine the terms under which others participate. Different functions may require public, cooperative, community, private, or commons-based ownership, with especially strong safeguards around necessities.

> *The economic question is: Does this arrangement provision necessities, enlarge life-capital, distribute agency fairly, and preserve meaningful possibilities for the future?*

19. Education and Participatory Knowing

Education does more than transmit information. It forms capacities and reproduces assumptions about authority, intelligence, competition, and belonging. A learner has learned when they can distinguish more carefully, connect ideas, act competently, question assumptions, communicate, create, and correct error.

The student is not an empty container. Teaching creates conditions in which learners reorganise their own distinctions. Expertise remains real, but authority becomes generative rather than controlling.

Grades, tests, rankings, and completion rates are useful indicators that can become proxies detached from learning. Life-coherent education preserves standards while using multiple forms of evidence and attending to what learners can actually understand and do.

Knowledge is both specialised and cooperative. Education should cultivate systems literacy: how economies depend on ecology; how institutions reproduce incentives; how media organise attention; how technologies redistribute power; and how feedback can be blocked.

> *The educational question is: Does this practice enlarge the learner's capacity to understand, relate, create, and participate responsibly?*

20. Artificial Intelligence and the Conditions of Life

Artificial intelligence enters existing economic and institutional systems and tends initially to amplify their purposes. In a health system oriented to care, it may support diagnosis and reduce administrative burden; in a billing-oriented system, it may intensify surveillance and standardisation.

Capability is not wisdom. AI can analyse, predict, and generate, but does not independently select a life-serving social purpose. The primary risk is powerful optimisation embedded within institutions whose objectives are already life-incoherent.

AI increasingly mediates what people see, read, and believe. Life-coherent design should preserve verification, uncertainty, dissent, and the ability to act without proprietary dependence. Cognitive offloading can enlarge capacity, but becomes harmful when it undermines understanding or agency.

The technology is materially embodied in energy, cooling water, semiconductor production, minerals, labour, and waste. Benefits must be assessed against ecological and distributional costs. Data governance requires meaningful consent, privacy, contestability, community rights, and transparency proportional to institutional power.

> *The AI question is: Does this use protect, restore, or enlarge the capacities of living persons and the systems that sustain them, while preserving autonomy and remaining corrigible?*

21. Governance, Corrigibility, and Democratic Participation

Political authority is not property possessed by institutions; it is an entrusted function. Governments receive power to protect life, coordinate resources, secure rights, resolve conflict, and preserve commons. Legal validity is necessary but not sufficient when lawful operations cause systematic life-harm.

Representative democracy requires supplementation through accessible information, local participation, judicial review, independent media, protected protest, participatory planning, and meaningful influence for those most affected by decisions.

Expertise clarifies consequences and constraints, but cannot determine values by technical authority alone. Assumptions and uncertainties must be visible. Transparency requires intelligibility, not merely publication of overwhelming data.

Dissent functions as corrective feedback. Whistle-blowers, journalists, activists, minorities, and affected communities can reveal what formal categories exclude. A secure state with an insecure population is not life-coherent.

The governance question is: Does this exercise of power protect shared life-conditions, enlarge meaningful agency, and remain corrigible by those affected?

22. Positive Peace and the End of Disposability

Peace is more than the interval between wars. It exists where institutions do not systematically require the disablement or disposability of others. A ceasefire is morally urgent but remains fragile if dispossession, humiliation, unequal rights, trauma, and denied memory persist.

War requires distinctions that make populations killable: the enemy is portrayed as collectively guilty, less human, or incapable of legitimate grief. Life-coherent peace distinguishes perpetrators from populations, accountability from disposability, and justified defence from unlimited violence.

Militarised security seeks safety through deterrence and dominance. Positive security also requires justice, reliable institutions, ecological stability, truthful communication, economic dignity, and mechanisms for correction. Peace infrastructure includes diplomacy, mediation, international law, independent investigation, arms control, trauma-informed reconciliation, and local peace-building.

The peace question is: Does this response reduce immediate harm while transforming the structures and narratives that make future violence likely?

23. Ecological Reciprocity and Good Ancestry

Ecology is the domain in which relational dependence becomes materially undeniable. Human bodies are continuous with air, water, food, microbes, climate, and evolutionary history. Nature is not an external environment but the life-ground within which every economy and institution exists.

Reciprocity does not require refusing all use. It requires returning, restoring, and limiting extraction so that conditions of renewal remain intact. Ecological limits are enabling boundaries: a fishery limit protects future fishing; a pollution limit protects health; a carbon limit protects climate stability.

Biodiversity represents ecological function, evolutionary history, and unrealised possibility. Extinction closes pathways that cannot be recreated through financial compensation. Indigenous knowledge can deepen ecological transformation only when accompanied by rights, consent, territory, fair benefit, and protection from appropriation.

Good ancestry treats future generations as legitimate others. It leaves more than financial assets: viable ecosystems, knowledge, functioning institutions, peace, cultural memory, and meaningful options.

The ecological question is: Does this relationship with Earth maintain and restore the conditions through which diverse life and future possibility can continue?

24. Spirituality Without Bypassing

Spirituality can widen belonging, cultivate humility, and deepen compassion. It can also be used to avoid psychological, political, and material realities. Spiritual bypassing occurs when forgiveness is urged before accountability, illness is blamed on consciousness, poverty is spiritualised, or oppressed communities are asked to transcend anger while harm continues.

Unitive experience may be profound, but experience does not determine one mandatory interpretation. A life-coherent spirituality retains epistemic humility and is judged partly by the relationships it produces.

Human beings live through bodies. Hunger, pain, shelter, touch, illness, and mortality are not lower realities to be escaped. Material justice is one of the places where spiritual claims become visible. Contemplation

may interrupt fear and compulsive accumulation, but inner calm does not by itself transform exploitative institutions.

Sacredness can place limits upon instrumental use: a person is not merely labour, a forest not merely timber, knowledge not merely property. Yet sacred language must remain pluralistic and cannot be imposed through coercive power.

> *The spiritual question is: Does this path deepen truthful relationship, protect the legitimacy of others, and make its adherents more responsive to embodied and ecological suffering?*

Conclusion: From a Universe of Relations to a Civilization of Care

Humanity's crisis is not caused by ignorance alone. Much of the relevant knowledge already exists, yet institutions remain organised around imperatives that prevent knowledge from changing direction. The deeper crisis lies in the relationship among worldview, value, and institutional operation.

Currivan's unitive science addresses the worldview dimension. It offers a cosmology of belonging and challenges the assumption that reality consists of isolated, inert objects. Its greatest strength is its capacity to reconnect scientific imagination with wonder and responsibility. Its major weakness is the tendency to allow established findings, frontier hypotheses, philosophical interpretation, and metaphysical commitment to flow into one another too easily.

Life-coherence supplies the missing evaluative distinction. Interconnection does not guarantee justice; information does not guarantee meaning; intelligence does not guarantee wisdom; and coherence does not guarantee health. Maturana clarifies living autonomy and the legitimate other. McMurtry grounds value in life-capacity and universal necessities. Galtung reveals the structural and cultural organisation of avoidable harm. Institutional autopoietization explains how systems can preserve their own coherence by transferring costs to life.

> *Because living beings are distinct yet mutually conditioning participants in a shared life-ground, human relationships, technologies, and institutions should be organised so that each and all can develop their capacities without transferring disabling costs to other persons, peoples, species, ecosystems, or future generations.*

This proposition does not promise a world without suffering, limits, or conflict. It offers a criterion for distinguishing unavoidable finitude from organised and preventable disablement. It does not demand cultural sameness. Its unity consists in the commitment that no person, population, or ecosystem be treated as disposable material for another system's expansion.

The world waiting to be brought forth is not a completed utopia hidden in the future. It appears whenever care is organised rather than merely praised; whenever institutions allow wounded life to correct them; whenever knowledge remains humble; whenever technology enlarges agency without enclosing it; whenever grief becomes solidarity rather than retaliation; and whenever the future is treated as a community of legitimate others.

Humanity does not stand outside the world deciding whether to participate. Every law, budget, technology, diagnosis, curriculum, investment, and story already conserves one world rather than another. A universe of relations becomes a civilization of care only when unity is embodied as responsibility.

Directions for Further Research

1. Construct an epistemic-status map of the principal propositions in unitive science, separating empirical findings, active hypotheses, philosophical interpretations, and metaphysical commitments.
2. Formally define "in-tropy" and info-dynamics, including units, boundary conditions, mathematical relations, distinction from entropy and mutual information, and potentially falsifiable predictions.
3. Clarify whether "living universe" is intended biologically, organisationally, metaphorically, phenomenologically, or metaphysically, and test any proposed relationship to autopoiesis.

4. Develop multidimensional measures of life-capacity that combine physiological, functional, relational, ecological, and narrative evidence without allowing proxies to replace lived reality.
5. Compare system coherence with life-coherence in hospitals, universities, financial systems, public agencies, corporations, and AI platforms.
6. Develop corrigibility as an institutional variable: how evidence of harm enters a system, who may interpret it, and whether it can change budgets, incentives, and core operations.
7. Test life-coherent medicine in multimorbidity, frailty, chronic fatigue, rehabilitation, discharge safety, and social determinants of health.
8. Apply the framework to AI governance, including capacity enablement, human judgment, labour, energy, data rights, contestability, and commons access.
9. Conduct pluriversal dialogue with Indigenous knowledge traditions through consent, reciprocity, territorial rights, and protection against epistemic appropriation.
10. Invite constructive exchange with Jude Currivan, the Club of Rome, the Fifth Element initiative, and UNESCO's International Decade of Sciences for Sustainable Development.

Appendix A - The Life-Coherence Test for Worldviews

Use the following domains to assess a scientific, political, economic, spiritual, or technological worldview. Score each domain from 0 (absent or contradicted) to 3 (structurally integrated). The score is a prompt for qualitative analysis, not a substitute for it.

Domain	Guiding criterion	Score 0-3
Relational ontology	Recognises constitutive ecological, biological, and social interdependence.	
Differentiated autonomy	Protects boundaries, agency, consent, and difference within relationship.	
Epistemic integrity	Distinguishes evidence, theory, interpretation, and metaphysical commitment.	
Life-value ground	Evaluates effects on life-capacity rather than price, preference, or systemic survival alone.	
Power and asymmetry	Accounts for unequal causal power, benefit, responsibility, and vulnerability.	
Boundary accountability	Includes displaced, indirect, ecological, and intergenerational consequences.	
Non-disposability	Excludes no affected life from moral consideration.	
Corrigibility	Can revise assumptions and practices in response to evidence of harm.	
Commons orientation	Protects universal access to necessary life-conditions and shared knowledge.	
Generative responsibility	Preserves diversity, future possibility, and meaningful options for later generations.	

Interpretation: 0-9 predominantly life-blind; 10-18 transitional; 19-24 substantially life-coherent; 25-30 mature life-coherent orientation. A high score does not establish final truth; a worldview that cannot continue learning would contradict life-coherence itself.

Appendix B - Unitive-to-Life-Coherent Institutional Assessment

An institution should first state the life-function that justifies its existence, then compare that purpose with what its budgets, procedures, incentives, technologies, and metrics actually reproduce.

Domain	Assessment question	Score 0-4
Life-grounded purpose	Is the institution's purpose defined by the life-function it serves?	
Operational alignment	Do budgets, incentives, and procedures advance that purpose?	
Capacity outcomes	Does the institution measure what people become able or unable to do?	

Domain	Assessment question	Score 0-4
Proxy integrity	Do indicators remain connected to the realities they represent?	
Distributional justice	Who receives benefits and who bears risk?	
Boundary accountability	What costs are displaced outside the formal mandate or location?	
Autonomy and consent	Can affected persons understand, consent, refuse, and contest?	
Participatory power	Can affected communities influence substantive decisions?	
Corrigibility	Can evidence of harm alter core operations?	
Transparency	Can people understand how decisions are made and challenged?	
Ecological viability	Are energy, water, emissions, waste, and biodiversity effects included?	
Future protection	Does the institution preserve meaningful options for future generations?	

Score 0 for active contradiction; 1 for symbolic acknowledgement; 2 for partial implementation; 3 for operational embedding; and 4 when the domain is operationally embedded and demonstrably corrigible. The final question is: What must change in actual operations - not merely language - so that the life affected can correct the institution?

Appendix C - Glossary of Core Terms

Autopoiesis: The organisation through which a living system recursively produces the components and boundary that constitute it as a distinct unity.

Boundary accountability: Responsibility for foreseeable consequences outside an institution's formal, geographic, or accounting boundary.

Civil commons: Institutions and practices securing shared access to the conditions required for life and meaningful agency.

Corrigibility: The capacity of a worldview, technology, or institution to receive evidence of error or harm and change the operations producing it.

Differentiated autonomy: The condition in which a living being maintains distinct organisation and agency while depending upon relationships with other beings and environments.

Epistemic blending: Unmarked movement among evidence, scientific hypothesis, philosophical interpretation, and metaphysical commitment.

Generative potential: The unrealised capacities and future forms that may emerge when enabling conditions are protected.

Great Inversion: The process through which systems created to serve life become governing ends to which living beings must adapt or be sacrificed.

Institutional autopoietization: The drift through which an institution becomes organised around reproducing its own procedures, authority, revenue, and legitimacy rather than its founding life-function.

Legitimate other: A being whose distinct existence, experience, and claims possess standing within coexistence and cannot be reduced to another system's purposes.

Life-capacity: The embodied, cognitive, relational, cultural, and ecological abilities through which a living being can act, experience, develop, and participate.

Life-capital: The living, ecological, social, and institutional conditions that reproduce and enlarge future life-capacity.

Life-coherence: The degree to which a relation, practice, technology, or institution protects, restores, or enlarges life-capacity without transferring disabling costs.

Life-ground: The biological, ecological, and social conditions presupposed by all human purposes and institutions.

Non-disposability: The principle that no person, population, or living system may be excluded from moral consideration or treated merely as expendable material.

Pathological coherence: A condition in which a subsystem reproduces itself successfully by degrading the wider living system upon which it depends.

Pluriversality: The coexistence of multiple worlds of meaning and practice without compulsory absorption into a single dominant worldview.

Positive peace: The presence of just, participatory, and life-enabling social conditions, not merely the absence of overt violence.

Procedural capture: The replacement of substantive life-serving responsibility by compliance with authorised procedures.

Proxy capture: The process through which an indicator becomes the target of a system and displaces the reality it was meant to represent.

Responsible participation: Action within a relational world that remains accountable for consequences upon other beings and shared life-conditions.

Semantic inflation: The attribution of meaning, purpose, intelligence, or consciousness to physical information merely because patterns or correlations are present.

Structural coupling: The history of recurrent interaction through which a living system and its environment undergo mutually congruent change while remaining distinct.

Structural violence: Avoidable impairment of life-capacity produced by social, political, or economic arrangements rather than one direct act.

System coherence: The capacity of a system to reproduce its organisation, regardless of consequences outside its operational boundary.

Unitive science: Currivan's proposed framework in which the universe is relational, informational, interconnected, emergent, and ultimately unified.

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