

The Trust Apocalypse: A Relativistic ScalarVector Plenum Interpretation

An RSVP Field-Theoretic Commentary on McCammon (2025)

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Abstract

Keiron McCammons *The Trust Apocalypse* (2025) diagnoses the century-long corrosion of social trust as a three-act sociological drama culminating in informational disintegration. Reinterpreted through the Relativistic ScalarVector Plenum (RSVP) theory, this process expresses a tri-field disequilibriumloss of scalar social potential (Φ), vector institutional coherence (\sqsubseteq), and the explosion of informational entropy (S). This essay formalizes McCammons historical narrative as an entropic phase transition in the civic field and proposes a restorative dynamics whereby catalytic communities serve as negentropic attractors re-coupling Φ , \sqsubseteq , and S .

1 Origins of Relativistic ScalarVector Plenum (RSVP) Theory

The *Relativistic ScalarVector Plenum* (RSVP) theory, as invoked in this commentary on McCammon (2025), represents a synthetic field-theoretic framework rather than a formally recognized school within canonical physics. Its terminology and mathematical architecture suggest a conceptual hybrid emerging from the intersection of relativistic field theory, non-equilibrium thermodynamics, and complex adaptive systems—adapted to model social, cognitive, and informational dynamics through an explicitly physicalized lens.

Although no pre-2025 publication attests to a formal articulation of RSVP as a distinct theory, its intellectual ancestry can be reconstructed from convergent developments in physics, systems theory, and sociology. The framework appears to originate within the *Flyxion / RSVP Analysis Division* (20242025) as part of a synthesis integrating scalarvector field equations, entropy-based governance modeling, and the thermodynamics of information.

1.1 Core Conceptual Foundations

RSVP posits a *plenum*—a continuous, space-filling substrate analogous to the classical aether or modern quantum vacuum—defined by three interdependent fields:

$$(\Phi, \sqsubseteq, S),$$

where Φ (scalar potential) quantifies social cohesion or meaning density, \sqsubseteq (vector flow) represents institutional or directional coherence, and S (entropy) encodes informational disorder or systemic noise.

This triadic coupling models trust, coherence, and communication as field-theoretic equilibria. The *relativistic* qualifier implies covariance under observer transformation—a recognition that social and informational structures remain form-invariant under changes of frame, scale, or semantic basis. In RSVP, a change of reference (individual, institutional, or civilizational) functions analogously to a Lorentz boost, preserving invariant quantities such as total informational energy.

Relativistic Field Roots. The scalarvector duality evokes early unification attempts in classical and relativistic physics.

- **Nordströms scalar gravitation (19131914)** provided a Lorentz-invariant scalar field model preceding Einsteins tensorial general relativity [8, 9].
- **TensorVectorScalar (TeVeS) gravity**, introduced by Jacob Bekenstein (2004), revived this hybrid structure by coupling a scalar field (modulating inertia) and a vector field (defining preferred directions) within a relativistic metric [10].

RSVP reinterprets this scalarvector decomposition sociophysically: Φ as the substrate of social potential energy, \sqsubseteq as the organized directional flow of institutions, and curvature replaced by informational entropy gradients.

The Plenum and Aether Lineage. The notion of a plenum draws directly from Maxwells and Kelvins aether mechanics and Teslas longitudinal electromagnetism—theories that conceived the vacuum as dynamically structured rather than void [11–13]. Kelvins vortex-atom and Maxwells elastic stress models of the 1860s1890s mirror RSVPs assumption of a continuous, energy-bearing medium in which disturbances propagate as phase gradients. Modern analogues, such as Meyls scalar-wave and Bohms implicate-order concepts, extend these intuitions into informational physics [14, 15], providing conceptual continuity to RSVPs entropic plenum.

1.2 Thermodynamic and Entropic Influences

RSVPs core dynamic,

$$\frac{dS}{dt} = \sigma(\Phi, \sqsubseteq) - \eta,$$

descends from Ilya Prigogines theory of dissipative structures [16, 17]. Prigogine demonstrated that systems far from equilibrium can spontaneously generate order through entropy export—precisely the mechanism by which RSVP describes social renewal via catalytic communities.

Here $\sigma(\Phi, \sqsubseteq)$ denotes entropy production through misalignment of scalar and vector flows (social incoherence), while η represents negentropic influx, analogous to informational feedback or moral energy. This interpretation parallels covariant thermodynamics in relativistic frameworks (e.g., MisnerThorneWheeler's *Gravitation*, 1973 [18]), where entropy and temperature transform as Lorentz scalars.

1.3 Application to Social and Cognitive Fields

The application of field formalism to social behavior traces to mid-20th-century socio-physics and econophysics. Thomas Schellings segregation models [19] employed local rule-based interactions yielding macroscopic order. Harrison White and Pierre Bourdieu later developed field-theory metaphors in sociology [20, 21], treating institutions as force fields shaping identity and habitus. Robert Putnam’s *Bowling Alone* (2000) [2] introduced empirical metrics for the decay of social capital—directly analogous to Φ -field attenuation.

RSVP extends these frameworks by introducing Lorentz-covariant field coupling and explicit entropy dynamics. Polarization corresponds to vector vorticity,

$$\nabla \times \underline{\Xi} \neq 0,$$

while consensus represents phase coherence. Later extensions such as *Simulated Agency* and *CLIO* reinterpret RSVP fields as semantic computational substrates, positioning meaning and agency as emergent invariants of recursive entropic regulation.

1.4 Emergence and Attribution (20242025)

The first explicit formulation of RSVP appears in 2025 under the authorship “Flyxion / RSVP Analysis Division” in the essay *The Trust Apocalypse: A Relativistic Scalar Vector Plenum Interpretation*. While not peer-reviewed, it constitutes the foundational text of the framework, embedding RSVP within a continuum of Flyxion research linking *TARTAN* (Trajectory-Aware Recursive Tiling with Annotated Noise), *HYDRA*, and *Simulated Agency*.

Development likely drew upon internal white papers on entropic redshift, field coherence, and governance modeling (20242025). The timing—amid post-COVID institutional distrust and AI-driven informational volatility—suggests RSVP emerged simultaneously as a diagnostic and prescriptive model: a means to formalize the thermodynamics of collective meaning.

1.5 Implications, Limitations, and Future Directions

RSVP defines a relativistically covariant tri-field system describing the coupled evolution of scalar cohesion, vector coherence, and entropy density. Its governing dynamics are derived from the Lagrangian density

$$\mathcal{L}_{\text{RSVP}} = \frac{1}{2}(\partial_\mu \Phi)(\partial^\mu \Phi) + \frac{1}{2}|\underline{\Xi}|^2 - \lambda \Phi (\nabla \cdot \underline{\Xi}) - \kappa S(\Phi, \underline{\Xi}), \quad (1)$$

with action functional

$$\mathcal{A}_{\text{RSVP}} = \int \mathcal{L}_{\text{RSVP}} d^4x. \quad (2)$$

Variation with respect to (Φ, Ξ, S) yields the coupled field equations:

$$\square\Phi = \lambda(\nabla \cdot \Xi) - \frac{\partial S}{\partial \Phi}, \quad (3)$$

$$\frac{\partial \Xi}{\partial t} = -\nabla\Phi - \gamma\Xi + \nu\nabla^2\Xi, \quad (4)$$

$$\frac{dS}{dt} = \sigma(\Phi, \Xi) - \eta, \quad (5)$$

where $\square = \partial_t^2 - \nabla^2$ is the d'Alembertian operator, γ denotes a vector damping coefficient, ν a diffusive viscosity term, σ the entropy production rate, and η a negentropic flux.

The coupling constants

$$\{\alpha, \beta, \gamma, \lambda, \kappa, \nu, \xi\}$$

define invariant relationships among scalar, vector, and entropic domains. Their roles are as follows:

- α : scalar reinjection coefficient,
- β : informational authenticity gradient,
- γ : vector damping constant,
- λ : scalar-vector alignment modulus,
- κ : entropy-curvature coupling,
- ν : torsional diffusion constant,
- ξ : feedback gain in recursive inference.

Incorporating the RSVP fields into the CLIO variational framework yields the generalized free-energy functional

$$\mathcal{F}_{\text{CLIO}}[\Phi, \Xi, S] = \langle E_{\text{predictive}} \rangle + k_B T \Delta S - \xi \operatorname{div}(\Phi \Xi), \quad (6)$$

whose stationary points, $\delta\mathcal{F}_{\text{CLIO}}/\delta\Phi = \delta\mathcal{F}_{\text{CLIO}}/\delta\Xi = \delta\mathcal{F}_{\text{CLIO}}/\delta S = 0$, define the equilibrium configurations of coherent inference.

Within the TARTAN lattice formalism, RSVP evolution is discretized by recursive tiling, producing a local entropy measure

$$S_{\text{coh}} = -\sum_i p_i \ln p_i, \quad p_i = \frac{|\Phi_i|^2}{\sum_j |\Phi_j|^2}, \quad (7)$$

which quantifies coherence within each spatial or semantic cell. The global dynamics preserve the total informational Hamiltonian,

$$H_{\text{RSVP}} = \int \left(\frac{1}{2} |\partial_t \Phi|^2 + \frac{1}{2} |\Xi|^2 + U(\Phi, \Xi, S) \right) d^3x, \quad \frac{dH_{\text{RSVP}}}{dt} = 0, \quad (8)$$

ensuring energy conservation under Lorentz-covariant entropy descent.

These relations define a closed variational and thermodynamic system in which trust, coherence, and information obey continuous conservation and exchange laws across scalar, vector, and entropic domains.

1.6 Covariant Tensor Formulation

Let $\eta_{\mu\nu} = \text{diag}(+1, -1, -1, -1)$ and promote the institutional flow to a four-vector $V^\mu = (V^0, \underline{\underline{\mathbf{V}}})$ with field strength $F_{\mu\nu} = \partial_\mu V_\nu - \partial_\nu V_\mu$. Define the covariant Lagrangian density

$$\mathcal{L}_{\text{RSVP}}^{\text{cov}} = \frac{1}{2} (\partial_\mu \Phi)(\partial^\mu \Phi) + \frac{m_V^2}{2} V_\mu V^\mu - \lambda \Phi (\partial_\mu V^\mu) - \frac{\nu}{4} F_{\mu\nu} F^{\mu\nu} - \kappa S(\Phi, V), \quad (9)$$

where m_V is a mass scale for V^μ , and (λ, ν, κ) are coupling constants.

EulerLagrange equations. Varying (9) with respect to Φ and V_μ gives

$$\partial_\mu \partial^\mu \Phi + \kappa \frac{\partial S}{\partial \Phi} = \lambda \partial_\mu V^\mu, \quad (10)$$

$$\nu \partial_\mu F^{\mu\nu} + m_V^2 V^\nu + \kappa \frac{\partial S}{\partial V_\nu} = \lambda \partial^\nu \Phi. \quad (11)$$

Equations (10)(11) reduce in the rest frame $V^0 = 0$ to the spatial forms used earlier.

Canonical momenta and stressenergy tensor. Define the canonical momenta

$$\pi_\Phi^\mu = \frac{\partial \mathcal{L}_{\text{RSVP}}^{\text{cov}}}{\partial (\partial_\mu \Phi)} = \partial^\mu \Phi, \quad \Pi^{\mu\nu} = \frac{\partial \mathcal{L}_{\text{RSVP}}^{\text{cov}}}{\partial (\partial_\mu V_\nu)} = -\lambda \Phi \eta^{\mu\nu} - \nu F^{\mu\nu}. \quad (12)$$

The (Belinfante-symmetrized) stressenergy tensor may be taken as

$$T^{\mu\nu} = \pi_\Phi^\mu \partial^\nu \Phi + \Pi^{\mu\alpha} \partial^\nu V_\alpha - \eta^{\mu\nu} \mathcal{L}_{\text{RSVP}}^{\text{cov}}. \quad (13)$$

If $\mathcal{L}_{\text{RSVP}}^{\text{cov}}$ has no explicit x^ν dependence, Noethers theorem implies

$$\partial_\mu T^{\mu\nu} = 0. \quad (14)$$

The energy density and momentum density follow from T^{00} and T^{0i} :

$$\mathcal{E} \equiv T^{00} = \frac{1}{2} (\partial_t \Phi)^2 + \frac{1}{2} |\nabla \Phi|^2 + \frac{m_V^2}{2} V_\mu V^\mu + \frac{\nu}{2} (\mathbf{E}_V^2 + \mathbf{B}_V^2) + \kappa S(\Phi, V), \quad (15)$$

$$\mathcal{P}^i \equiv T^{0i} = (\partial_t \Phi)(\partial^i \Phi) + \Pi^{0\alpha} \partial^i V_\alpha, \quad (16)$$

where $\mathbf{E}_V^i \equiv F^{0i}$ and $\mathbf{B}_V^i \equiv \frac{1}{2} \epsilon^{ijk} F_{jk}$.

Entropy current and balance law. Introduce an entropy four-current J_S^μ with constitutive form

$$J_S^\mu = S u^\mu - \beta \Phi V^\mu, \quad u^\mu u_\mu = 1, \quad (17)$$

where u^μ is a timelike unit field and β encodes authenticity/verification coupling. The entropy balance is

$$\partial_\mu J_S^\mu = \sigma(\Phi, V) - \eta, \quad (18)$$

with $\sigma \geq 0$ the production density and η an externally supplied negentropic flux. In the comoving frame ($u^\mu = (1, \mathbf{0})$), (17)(18) reduce to $\partial_t S + \nabla \cdot (-\beta \Phi \underline{\underline{\mathbf{V}}}) = \sigma - \eta$.

Conserved Hamiltonian. Define the covariant Hamiltonian density by Legendre transform,

$$\mathcal{H}_{\text{RSVP}} = \pi_{\Phi}^0 \partial_0 \Phi + \Pi^{0\nu} \partial_0 V_{\nu} - \mathcal{L}_{\text{RSVP}}^{\text{cov}}, \quad (19)$$

and $H_{\text{RSVP}} = \int d^3x \mathcal{H}_{\text{RSVP}}$. For solutions of (10)(11) and $\partial_{\mu} T^{\mu\nu} = 0$, one has

$$\frac{d}{dt} H_{\text{RSVP}} = 0. \quad (20)$$

Rest-frame correspondence. With $V^0 = 0$ and weak-field $F_{\mu\nu}$, the spatial projections of (10)(11) recover $\square\Phi = \lambda \nabla \cdot \underline{\square} - \partial S / \partial \Phi$ and $\partial_t \underline{\square} = -\nabla \Phi - \gamma \underline{\square} + \nu \nabla^2 \underline{\square}$, with γ introduced phenomenologically via a Rayleigh dissipation functional if viscous damping is required.

1.7 Summary

RSVP thus arises not from a linear lineage of physics but from a synthetic recoupling of historical motifs—ether, relativity, entropy, and social field theory—into a unified explanatory grammar for trust and coherence. It exemplifies a post-disciplinary physics of meaning, positioning human systems as relativistic thermodynamic fields governed by the same invariance principles that sustain coherence in matter and energy. In this respect, RSVP is both an analytical model and a philosophical gesture: an attempt to restore, within the theory of civilization itself, the principle that structure and trust are conserved quantities under the flow of entropy.

2 Part I Where Are We? (Observation)

Gallup, Pew, GSS, and Edelman surveys converge on a secular decline in trust: average confidence in major U.S. institutions falling to approximately 28%. Interpersonal trust has dropped below 30%. In RSVP terms, the macroscopic field exhibits $\Delta S > 0$ and $\nabla \Phi \approx 0$: informational disorder rises as the potential for coordinated meaning collapses.

Consequences

1. **Collective Action Failure** \rightarrow Phase incoherence among agents; collective work becomes energetically expensive.
2. **Institutional Legitimacy Loss** \rightarrow Divergence of $\underline{\square}$ -flow; vector field misalignment reduces systemic efficiency.
3. **Polarization and Fragmentation** \rightarrow Entropy maximization; local gradients compete rather than integrate.

The empirical surface thus corresponds to an entropic relaxation of the social plenum.

3 Part II How Did We Get Here? (Causation)

McCammons historical reconstruction unfolds in three entangled “acts,” each describing a progressive decoupling of the RSVP triad.

Act	Historical Process	RSVP Mapping / Description
I	Erosion of Social Cohesion (Putnam 2, Haidt 3)	$\nabla\Phi \rightarrow 0$ Loss of local potential gradients; community bonds thin.
II	Obsolescence of Institutions (Watergate \rightarrow COVID)	$\nabla \times \sqsubseteq \rightarrow \text{chaotic}$ Vector coherence fails; captured flows produce vortices of self-interest.
III	Informational Deregulation (Taibbi 4, Harari 5)	$\Delta S \rightarrow \max$ Signal-to-noise collapse; attention economy amplifies stochastic modes.

Each act represents an entropy-driven symmetry break:

$$\frac{dS}{dt} = \sigma(\Phi, \sqsubseteq) - \eta, \quad (21)$$

where σ is the entropy production rate and η the rate of negentropic injection.

4 Part III What Can We Do About It? (Intervention)

4.1 Rebuilding Social Cohesion

Micro-interactions (Jacobs “sidewalk trust”) act as scalar reinjections:

$$\Phi_{\text{local}}(t+1) = \Phi(t) + \alpha \sum_i w_i \delta_{\text{contact},i}. \quad (22)$$

4.2 Designing Institutions for a Digital Age

Agile, transparent governance (Taiwan G0v, Estonia X-Road, Barcelona Decidim) repairs vector continuity:

$$\frac{d\sqsubseteq}{dt} = -\nabla\Phi - \gamma \sqsubseteq_{\text{capture}}. \quad (23)$$

Independent journalism such as *The Free Press* and *State Affairs* provides corrective circulation of institutional momentum.

4.3 Transforming Informational Systems

To bound entropy, McCammon calls for an Internet-of-Humans (IoH)identity-anchored yet privacy-respecting networks ensuring verifiable reality:

$$S(t+1) = S(t) - \beta \ln\left(\frac{I_{\text{auth}}}{I_{\text{total}}}\right). \quad (24)$$

The triad $\{\Phi \uparrow, \sqsubseteq \leftrightarrow \text{coherent}, S \downarrow\}$ defines a negentropic manifoldthe necessary condition for sustainable trust.

5 Part IV Catalyzing Change (Sustainment)

5.1 Innovation as Moral Energy

McCammon positions human creativity as the conserved potential capable of reversing entropy production. Researchers, entrepreneurs, and investors form coupled oscillators in the civic field.

5.2 Catalytic Community Dynamics

Drawing from McChrystal [6] and Ehrlichman [7], the catalytic community is a network-of-networks, or in RSVP terms, a recursive plenum cluster.

Let each node i carry state $\Psi_i = (\Phi_i, \sqsubseteq_i, S_i)$. Connectivity tensor C_{ij} produces cooperative gain G :

$$\frac{d\Psi_i}{dt} = \sum_j C_{ij} \mathcal{F}(\Psi_j - \Psi_i), \quad G = \det(C_{ij}) > 0. \quad (25)$$

5.3 Epilogue Ignition

Catalytic communities emerge neither top-down nor bottom-up but via recursive trust bootstrapping:

1. Information exchange
2. Credibility formation
3. Collective action

Each cycle lowers local ΔS and expands coherent domain volume V_{trust} .

6 Synthesis: From Decay to Recursion

Stage	Societal Function	RSVP State	Description
Disintegration	Loss of trust (1960-2020)	$\nabla\Phi \approx 0$, curl \sqsubseteq chaotic, $\Delta S \gg 0$	High-entropy fragmentation.
Recognition	Analytic diagnosis (McCammon III)	Observation phase	Mapping entropy distribution.
Intervention	Civic and digital innovation (III)	Field realignment	Negentropic feedback introduced.
Catalysis	Networked renewal (IV)	Autocatalytic closure	Self-sustaining trust regeneration.

The process charts a thermodynamic loop:

$$\Phi \xrightarrow{\text{erosion}} 0 \Rightarrow \sqsubseteq \text{ decoheres } \Rightarrow S \uparrow \Rightarrow (\Phi, \sqsubseteq, S) \text{ re-couple via catalytic community.} \quad (26)$$

7 Conclusion

McCammons sociological narrative, viewed through RSVP dynamics, describes a civilization approaching thermodynamic bifurcation. The remedy is not a return to prior equilibrium but a higher-order steady-state governed by recursive negentropy: human creativity organized through catalytic communities that re-link social potential, institutional flow, and informational order.

$$\boxed{\frac{d}{dt} \begin{bmatrix} \Phi \\ \sqsubseteq \\ S \end{bmatrix} = \mathcal{L}_{\text{human}} \begin{bmatrix} \Phi \\ \sqsubseteq \\ S \end{bmatrix}, \quad \text{with } \frac{dS}{dt} \leq 0.} \quad (27)$$

Restoring trust is therefore not nostalgia but physics: a re-coupling of energy, structure, and meaning under the constraint of entropy descent.

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