The Noise Tax: Entropy, Responsibility, and the Economics of Coherence

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Abstract

The concept of entropy, traditionally confined to thermodynamics and information theory, is herein elevated to a moral and fiscal category essential for sustainable governance. This paper proposes a triadic framework of taxation—the robot tax, noise tax, and merit dividend—to internalize entropy across economic, informational, and epistemic domains. Drawing on Senator Bernie Sanders's critique of AI-driven automation as presented in his October 7, 2025, address "AI Could Wipe Out the Working Class," we integrate his call for a robot tax with the Relativistic Scalar-Vector Plenum (RSVP) model, where persistence requires the reabsorption of disorder. The robot tax addresses labor displacement by taxing corporate automation, redirecting funds to worker support. The noise tax penalizes low-compressibility content in digital ecosystems, funding semantic infrastructure. The merit dividend redistributes epistemic credit from individual achievements back to collective infrastructures, countering the tyranny of merit. Through entropy-reduction labor markets and regenerative robotics examples such as endomarionettes, we demonstrate how these operators form orthogonal projections of a single conservation law, ensuring coherence in civilization's metabolic flows. This unified approach reframes fiscal policy as thermodynamic ethics, aligning technological progress with human flourishing. Entropy is the missing variable of justice in an era of accelerating crises, and this framework provides the fiscal architecture for a civilization capable of metabolizing its own disorder.

1 Introduction: Progress Without Feedback

In the era of accelerationism, where automation and attention economies drive relentless growth, society faces a fundamental imbalance. Traditional metrics such as gross domestic product (GDP), user engagement, and innovation rates prioritize production and extraction over maintenance and coherence. This oversight leads to the accumulation of unaddressed entropy in economic, informational, and social systems, threatening long-term sustainability. The Relativistic Scalar-Vector Plenum (RSVP) framework introduces an ethical axiom: persistence requires the reabsorption of entropy. By internalizing the costs of disorder, systems can achieve equilibrium between creation and restoration.

Senator Bernie Sanders, in his October 7, 2025, address "AI Could Wipe Out the Working Class," situates AI and robotics amid crises of inequality and authoritarianism, arguing they

pose a threat comparable to climate change (Sanders, 2025). He highlights how billionaire-driven technologies exacerbate economic divides, potentially displacing nearly 100 million U.S. jobs within a decade according to a Senate HELP Committee report. This echoes historical concerns over automation, from John Maynard Keynes's 1930 prediction of technological unemployment to Wassily Leontief's 1980s warnings and Jeremy Rifkin's 1995 book *The End of Work*, which lamented unprecedented technological displacement (Keynes, 1930; Leontief, 1983; Rifkin, 1995).

This paper aims to formalize a fiscal and thermodynamic model that holds actors responsible for the entropy they export. The proposed triadic structure—the robot tax for economic entropy, the noise tax for informational entropy, and the merit dividend for epistemic entropy—provides a unified mechanism to redistribute benefits and mitigate harms. Through this lens, technological progress is reoriented toward collective well-being rather than concentrated power, transitioning toward the entropic accounting that underpins sustainable governance.

2 Entropy and Externalization

Entropy, as defined in thermodynamics and information theory, represents the measure of disorder or unpredictability in a system. Pioneering works by Claude Shannon on information entropy and Rolf Landauer on the physical limits of computation highlight how energy dissipation accompanies information processing (Shannon and Weaver, 1949; Landauer, 1961). Ilya Prigogine and Isabelle Stengers's exploration of dissipative structures in *Order Out of Chaos* further illustrates how open systems maintain order by exporting entropy to their environments (Prigogine and Stengers, 1984).

In socioeconomic contexts, entropy export manifests as the displacement of disorder from one domain to another, such as unemployment from automation, pollution from industrial production, spam in digital communications, or epistemic debt in knowledge extraction. The Relativistic Scalar-Vector Plenum (RSVP) framework models this through three fields: the scalar field Φ representing capacity and potential, the vector field $\mathbf{v}$ denoting flow and activity, and the entropy field S capturing disorder. The general conservation condition is given by

$$\mathcal{H}[\Phi, \mathbf{v}, S] \leq 0,$$

ensuring that entropy accumulation does not exceed reabsorption rates. This condition underpins the need for corrective operators to internalize externalized costs.

Consider three examples of entropy export. In the economic domain, industrial pollution arises from productivity gains that displace environmental disorder, leading to ecological degradation. Informational pollution, such as clickbait misinformation, floods cognitive ecosystems with low-value content, eroding epistemic health (Floridi, 2015). Epistemically, academic prestige hierarchies extract value from collective labor while privatizing credit, fostering inequality in knowledge production.

Domain	Source of Order	Exported Disorder	External Cost
Industry	Productivity	Pollution	Ecological degradation
Platforms	Engagement	Cognitive overload	Misinformation
Academia	Innovation	Epistemic inequality	Authorial enclosure

These externalities necessitate mechanisms to reinternalize entropy, as explored in the subsequent sections on specific fiscal operators.

3 The Robot Tax: Economic Entropy

Senator Bernie Sanders, in his October 7, 2025, address "AI Could Wipe Out the Working Class," situates AI and robotics amid crises of inequality and authoritarianism, arguing they pose a threat comparable to climate change (Sanders, 2025). Historical precedents, such as debates over automation in the 20th century, underscore the need for intervention. Automation generates productive order by exporting social disorder, such as labor displacement.

Examples from Sanders include Tesla's deployment of millions of robots replacing factory workers, Amazon's use of over a million robots leading to tens of thousands of layoffs, Foxconn's replacement of 60,000 workers with plans for fully automated factories, and driverless vehicles threatening trucking jobs (Sanders, 2025). A Senate HELP Committee report estimates nearly 100 million U.S. jobs displaced within a decade, affecting sectors from nursing to accounting.

This aligns with historical automation anxiety, from Keynes's 1930s warnings of technological unemployment, Leontief's 1980s concerns about job scarcity, to Rifkin's 1990s predictions of widespread displacement (Keynes, 1930; Leontief, 1983; Rifkin, 1995). Recent OECD reports echo these fears, noting that occupations at high risk of automation account for 28% of jobs across member countries, exacerbating inequality (OECD, 2025).

In RSVP terms:

$$\frac{dS_{\text{economic}}}{dt} = \frac{\partial S}{\partial P}\frac{dP}{dt} - \frac{\partial S}{\partial H}\frac{dH}{dt},$$

where systemic entropy rises unless displaced human participation H is rechanneled. The robot tax serves as a restorative feedback operator:

$$\mathcal{R}_{\text{economic}} = \tau_{\text{robot}}\,\frac{dH}{dt}.$$

Taxation is formalized as proportional to net exported disorder:

$$\tau_{\text{robot}} \propto \max\left(0, \frac{dS_{\text{external}}}{dt} - \frac{dS_{\text{internal}}}{dt}\right).$$

This rebalancing enforces the RSVP condition, metabolizing entropy faster than it accumulates.

Redistribution mechanisms could include wage insurance for displaced workers, implementation of a shorter 32-hour workweek without pay loss, and co-ownership models such as employee stock programs. These policies not only mitigate immediate harms but also foster a just technological transition, as Sanders advocates.

4 The Noise Tax: Informational Entropy

4.1 Definition of Compressibility

Extending the economic logic to digital ecosystems, the noise tax addresses semantic noise as the dominant externality. Platforms maximize throughput over compressibility, consuming cognitive bandwidth without adding coherence. Compressibility, linked to Kolmogorov complexity, serves as a proxy for semantic density—information that adds structure rather than noise (Kolmogorov, 1965).

RSVP models this as degradation of the scalar field Φ (meaning capacity) and entropy inflation:

$$\frac{dS_{\text{info}}}{dt} = \int_{\Omega} (1 - C(x,t))\, d\Omega,$$

where C is local compressibility. The noise tax imposes costs proportional to low C, penalizing unstructured content and rewarding high-density patterns.

4.2 Empirical Analogs

Empirical analogs include token inflation on social media, generative spam, and algorithmic overproduction, which flood systems with low-value information. Studies on informational pollution highlight how such content erodes trust and coherence (Floridi, 2015; Ormondroyd, 2009).

4.3 Policy Form

The policy could involve a per-byte or per-token tax on low-information content, with revenues funding semantic infrastructure like quality curation platforms. Rewards might incentivize high-compression contributions, such as concise educational resources.

4.4 Case Studies

Case studies illustrate the issue: TikTok and Reels act as entropy amplifiers, prioritizing virality over depth, while Wikipedia and StackOverflow serve as entropy absorbers through community-maintained structure.

Scatterplot conceptualizing content density vs. attention cost: High-density content (e.g., scholarly articles) occupies low-attention, high-value quadrants, whereas low-compressibility spam fills high-attention, low-value areas.

This aligns the informational economy with entropic fairness, restoring balance between bandwidth and meaning.

5 The Tyranny of Merit: Epistemic Entropy

5.1 The Illusion of Individual Causality

Modern societies valorize success as the outcome of personal talent, hard work, or moral character. This ideology—what Michael Sandel has called the *tyranny of merit*—frames achievement as evidence of intrinsic virtue and failure as a lack of effort or worth (Sandel, 2020). In doing so, it commits a systemic cognitive fallacy that can be formalized within the RSVP framework as the *reverse fundamental attribution error*: observers ascribe contingency and circumstance to others while attributing agency and intentionality to themselves.

Mathematically, let A_i denote the observed achievement of an individual i. The meritocratic fallacy assumes a linear relation

$$A_i \approx f_i(\text{effort}, \text{character}),$$

neglecting the convolution of A_i with the distributed field of collective inputs:

$$A_i = (E * C)(x_i, t_i) + \epsilon_i,$$

where E represents environmental affordances (infrastructure, mentorship, education, prior discoveries) and C the collective creative field generated by volunteers, peers, and ancestors. The noise term ϵ_i is typically interpreted as personal risk or luck, but in aggregate it encodes the entire *evolutionary selection pressure* of material and social constraints.

5.2 Collective Work as Hidden Infrastructure

Nearly every major technological or scientific advance emerges not from isolated genius but from *collective recursive labor*: open-source maintainers, unpaid testers, citizen scientists, and historical predecessors who have sedimented structure into the shared plenum of possibility. This background work functions as an *entropy sink* for civilization—absorbing disorder, error, and experimental dead ends so that localized success can appear clean and self-authored.

Within the RSVP framework, this collective substrate corresponds to the scalar field Φ, which encodes capacity and coherence across the plenum. Individuals operate as transient vector perturbations $\mathbf{v}_i$ within that field. When success occurs, it is because the vector flow aligns momentarily with high-capacity regions of Φ:

$$\mathbf{v}_i \cdot \nabla\Phi > 0.$$

To interpret this as individual virtue is to confuse local gradient-following with the underlying topology of the field itself.

5.3 Evolutionary Contingency and Selection

Human accomplishment is not primarily causal but *selected* from the ensemble of feasible actions permitted by physical, economic, and social constraints. Across timescales, systems exhibiting greater adaptability and entropy reabsorption survive, while brittle or exploitative

strategies collapse. Hence what appears as individual "merit" is often the retrospective stabilization of trajectories that happened to resonate with ambient constraints. Evolution rewards what fits, not what intends.

This reframes moral desert in entropic terms:

$$\text{Merit} \approx \mathbb{E}\big[\,\Delta S_{\text{absorbed}}\,\big],$$

the expected capacity of an agent to reabsorb disorder from its environment. Success does not prove inherent virtue but effective coupling to collective constraint networks.

5.4 Implications for the Noise Tax

The tyranny of merit thus parallels the pathology that the noise tax seeks to remedy. In both cases, value is extracted from collective coherence while credit is privatized. Just as platforms monetize semantic labor provided freely by their users, the ideology of merit monetizes social inheritance while erasing its source. An entropy-aware society must therefore redistribute not only economic returns but *epistemic credit*—recognizing that meaning and innovation emerge from recursive communal fields rather than isolated acts of will.

The corrective, in both economics and ethics, is to reintroduce the missing feedback term:

$$\frac{dS_{\text{collective}}}{dt} = -\sum_i \nabla\cdot(\Phi_i \mathbf{v}_i),$$

making the hidden flows of contribution explicit. This is the moral analogue of the noise tax: a *merit dividend* that compensates the collective for the informational infrastructure it provides. Only by acknowledging this distributed authorship can technological progress cease to justify new hierarchies of desert. Recognizing epistemic entropy leads naturally to the corrective mechanism of the Merit Dividend.

6 The Merit Dividend: Epistemic Rebalancing

If the *noise tax* corrects informational entropy and the *robot tax* corrects economic entropy, then the *merit dividend* corrects epistemic entropy—the unacknowledged extraction of collective intelligence by individuals or institutions that benefit from inherited order.

The Principle. Every act of innovation or discovery draws upon a pre-existing lattice of shared cognition—the open-source repositories, scientific traditions, educational infrastructures, and volunteer communities that silently reabsorb error and stabilize knowledge. The merit dividend ensures that when an individual or corporation captures symbolic or monetary value from this shared lattice, a proportional share of that value is returned to the collective from which it emerged.

Let V_i denote the measurable value (economic, reputational, or informational) accrued by agent i. Define $\Phi_{\text{collective}}$ as the scalar field representing accumulated public knowledge and

infrastructure, and χ_i as the coupling coefficient describing how strongly i's output depends on that field. Then the epistemic externality is

$$E_i = \chi_i \frac{\partial V_i}{\partial \Phi_{\text{collective}}},$$

and the required redistribution rate becomes

$$\tau_{\text{merit}} = \beta \, E_i,$$

where β is a global normalization constant translating epistemic dependence into fiscal units.

Operationalization. In practical terms, the merit dividend can be implemented through multiple coupled channels:

(a) **Open-source credit ledgers:** Each software or scientific artifact includes a cryptographic trace of dependencies. When the artifact generates profit or recognition, a fraction of that value flows automatically to the upstream contributors weighted by dependency depth and maintenance labor.

(b) **Epistemic taxation:** Corporations or foundations whose business models rely heavily on public data, academic research, or volunteer curation pay a periodic levy into a *Cognitive Commons Fund*, proportional to the entropy they extract from the shared informational plenum.

(c) **Universal creative dividends:** Individuals receive baseline income or credits for contributing to collective sense-making—writing documentation, moderating discussions, annotating datasets—activities that decrease global entropy but rarely generate market returns.

(d) **Recognition rebalancing:** Academic and industrial citation indices can include a correction term for background dependency density, so that credit is allocated not only by visibility but by the *entropy reduction* each work provides to its successors.

Real-world analogies include Creative Commons licenses for shared attribution, open-source sustainability funds like GitHub Sponsors, and Wikipedia's edit credit systems that track contributions.

Flow Before Dividend	**Flow After Dividend**
Extraction from collective → Private capture	Extraction → Redistribution → Collective reinforcement

Theoretical Rationale. Where the tyranny of merit isolates achievement from its ecosystem, the merit dividend restores coherence to the epistemic field. It formalizes gratitude as a conservation law: no act of discovery can generate local order without compensating the global substrate that sustains it. Within the RSVP framework, this is equivalent to enforcing the invariant

$$\langle \mathcal{H}_{\text{epistemic}}[\Phi, \mathbf{v}, S] \rangle_\Omega \leq 0,$$

ensuring that cognitive evolution remains entropy-neutral or entropy-negative across scales. This draws on Giddens's structuration theory and March's exploration-exploitation balance, emphasizing organizational learning through structural coupling (Giddens, 1984; March, 1991).

Cultural Implications. A society that adopts the merit dividend in tandem with the noise and robot taxes redefines success itself. Wealth, fame, and authorship cease to signify isolation and instead measure the capacity to *close feedback loops* across the collective plenum. The just society is thus the one in which every local gradient of excellence contributes to the flattening of the global entropy curve. In the context of AI model training, merit dividends could compensate contributors to public datasets, fostering equitable innovation.

7 Entropy Reduction as Labor

The *noise tax* treats informational disorder as a real cost and its correction as a productive act. Where traditional economies reward novelty and scale, an entropy-aware economy rewards *repair*. Spelling corrections on Wikipedia, removal of spam, refactoring of open-source code, or the literal collection of garbage are all acts that convert dispersed disorder into structured coherence. Each such action increases the effective compressibility C of the collective field, reducing informational entropy S:

$$\Delta S_{\text{system}} = -\int_{\Omega} \Delta C(x,t)\, d\Omega.$$

Economic interpretation. In RSVP terms, these actions supply a positive flux of negative entropy back into the shared plenum. They constitute the inverse of extraction: micro-reparative labor that sustains the field's coherence. The appropriate policy mechanism is not charity but remuneration: citizens should be *paid to collect garbage in any domain where garbage exists*—whether physical refuse or informational debris.

Logarithmic valuation. To prevent trivial gaming and to reward early discovery, the bounty for a correction or cleanup can scale logarithmically with the *age* of the error or the *entropy density* it corrects:

$$R(t_{\text{error}}) = R_0 \, \log\!\left(1 + \frac{t_{\text{error}}}{t_0}\right),$$

where t_{error} is the time since the error entered the system and R_0 the base rate for immediate repair. Old, uncorrected errors have propagated further through derivative works and therefore carry higher entropic weight. Paying logarithmically more for older corrections ensures that long-standing distortions—misquotations, typos in canonical literature, uncollected trash in neglected areas—receive proportionally greater incentive.

Unified reward structure. The same algorithm can operate across domains:

Domain	Entropy Source	Rewarded Act
Physical ecology	Waste accumulation	Garbage collection, recycling
Digital knowledge	Typos, misinformation	Error correction, citation repair
Software ecosystems	Legacy bugs, dead code	Refactoring, documentation updates
Civic discourse	Spam, disinformation	Moderation, fact-checking

Each task reduces local disorder while teaching the agent about the system's structure—a coupling of cognitive and thermodynamic efficiency. The cumulative metric for payment is therefore not just quantity of actions but *entropy absorbed*:

$$W = \int_0^T \left| \frac{dS_{\text{external}}}{dt} \right| dt, \quad \text{Reward} = \gamma W,$$

with γ a fixed conversion rate from entropy units to currency.

Case studies include open-source maintainers addressing legacy bugs, janitorial labor in physical spaces, and fact-checkers combating disinformation, all undervalued in traditional economies.

Moral consequence. Where the tyranny of merit rewards extraction and visibility, the entropy-reduction economy rewards *maintenance and care*. It reverses the moral direction of work: success is measured not by the novelty one produces, but by the disorder one successfully reabsorbs. In this schema, a person who collects trash or finds a decade-old typo in a scientific paper performs the same essential act as an engineer debugging an unstable network: converting noise into structure. Both are instances of RSVP's universal criterion for persistence,

$$\langle \mathcal{H}[\Phi, \mathbf{v}, S] \rangle_\Omega \leq 0,$$

which demands that each participant, however small, contribute to the continuous reintegration of entropy into meaning. This links to Sanders's vision of a shorter workweek, redistributing time toward such reparative activities.

8 Integration: The Merit Dividend and the Entropy-Reduction Market

The entropy-reduction economy forms the operational substrate of the *Merit Dividend*. While the dividend redistributes epistemic credit from innovation back to the collective, the entropy-reduction market channels that redistributed value toward those performing the day-to-day work of coherence restoration.

Conceptual coupling. In the RSVP formalism, both creation and correction are phases of the same operator:

$$\mathcal{H}[\Phi, \mathbf{v}, S] = \underbrace{\mathcal{H}_{\text{creative}}}_{\text{entropy export}} + \underbrace{\mathcal{H}_{\text{restorative}}}_{\text{entropy reabsorption}}.$$

The merit dividend allocates funds according to the exported component, taxing those who benefit from collective structure. The entropy-reduction market allocates payouts according to the restorative component, rewarding those who reintegrate disorder. The equilibrium condition for a coherent society is:

$$\langle \mathcal{H}_{\text{creative}} + \mathcal{H}_{\text{restorative}} \rangle_{\Omega} = 0.$$

Automatic payment architecture. Each verified entropy-reduction event (a corrected error, removed spam, fixed bug, cleaned site) generates a micropayment from the collective fund established through merit and noise taxes. A distributed ledger records the event with three fields:

(i) **Entropy delta** ΔS_i: quantitative estimate of disorder removed.

(ii) **Age multiplier** $\log(1+t_i/t_0)$: compensates for long-lived or deeply propagated errors.

(iii) **Verification hash**: consensus proof from peers or algorithmic cross-check confirming that the correction holds.

The total reward becomes:

$$R_i = \gamma \, \Delta S_i \, \log\left(1 + \frac{t_i}{t_0}\right),$$

paid automatically from the *Cognitive Commons Fund* financed by the merit dividend and noise tax. This closes the loop: value extracted from collective insight flows back into collective maintenance.

Consider a simulation: A user corrects a longstanding typo in a Wikipedia article on automation history. The ledger registers ΔS_i based on page views impacted, applies the age multiplier for the error's duration, and verifies via community consensus. Funds from tech firms' epistemic taxes flow as micropayment, incentivizing further maintenance.

Human recognition as thermodynamic currency. Although denominated in currency, the deeper reward structure is reputational. Each entropy-reduction event carries a signature in the ledger, contributing to a participant's *coherence index*:

$$\kappa_i = \int_0^T \left| \frac{dS_{\text{external},i}}{dt} \right| dt,$$

which replaces conventional metrics of productivity with a measure of sustained systemic stabilization. High-κ agents are not merely "productive" but *entropically responsible*—they leave the collective plenum more ordered than they found it.

Societal effect. In this configuration, the Merit Dividend and the Noise Tax cease to be abstract redistributive policies. Together they form a coherent feedback circuit in the thermodynamic economy of meaning:

Extraction (creation) → Redistribution (dividend) → Reabsorption (entropy labor).

Those who profit most from the collective's order fund those who labor to maintain it. Those who maintain it preserve the very conditions for future creation. The outcome is an economy where value is measured not by acceleration or accumulation, but by the continuity of coherence in the scalar field Φ.

Governance and Oversight. Effective implementation requires oversight councils to set entropy metrics, verification algorithms to prevent fraud, and civic trust models to ensure participation. Pilot programs on platforms like GitHub or civic apps could test ledger functionality, scaling to national entropy-balance systems.

9 Endomarionettes: Embodied Entropy Reabsorption

Not all automation externalizes entropy. While the *robot tax* proposed by Sanders applies to high-capital, labor-displacing automation that offloads social disorder for private gain, certain forms of embodied automation—notably *endomarionettes* constructed from household or biodegradable materials—do the opposite. They function as *entropy absorbers*, not emitters.

Material and Dynamic Principles. Endomarionettes are lightweight robotic organisms built from low-cost, compliant materials: paper-mâché, bread paste, yogurt glue, kombucha (SCOBY) leather, or other bio-derived composites. They are actuated by internal pneumatic bladders or tendon-like strings that pull against flexible joints. Their structural fragility is not a defect but an informational feature: each deformation or leak serves as feedback to stabilize higher-level motion.

Instead of rigid control, they employ *hierarchical Central Pattern Generator* (CPG) chains, modeled after biological gait oscillators:

$$\text{Trunk CPG} \;\rightarrow\; \text{Hip/Knee CPGs} \;\rightarrow\; \text{Ankle Reflex Loops}.$$

These oscillators entrain through phase coupling, allowing local irregularities to be reabsorbed as rhythmic variation rather than mechanical failure. The governing principle is *recursive entropy smoothing*:

$$\frac{dS_{\text{local}}}{dt} = -\nabla \cdot (\Phi \mathbf{v}) + Q_{\text{feedback}},$$

where $Q_{\text{feedback}} > 0$ represents the rate at which internal noise is converted into stabilizing information. This contrasts with opaque, centralized AI infrastructure, emphasizing repairability and permeability in material philosophy (Strogatz, 2018; Kelly, 1994).

To build a basic endomarionette: Form a truss skeleton with tape and straws, attach antagonistic balloon bladders at joints for torque, route strings through straws for tendon control, and integrate pressure sensors for reflexes.

Change Magnification. For training, rehabilitation, or educational use, endomarionettes can employ a function

$$\delta r = G(\phi)\,\delta h, \quad G'(\phi) > 0,$$

mapping small human input δh into large robotic motion δr. This *change magnification* amplifies feedback and supports learning without large mechanical energy flows, keeping the total entropic footprint low.

Why They Are Exempt. The *robot tax* applies when automation *externalizes entropy*—that is, when a corporation uses robotics to increase profit while exporting social disorder (unemployment, deskilling, concentration of wealth). By contrast, endomarionettes:

(a) **Do not displace labor.** They are typically operated, modified, and repaired by their users; they *create work* rather than erase it.

(b) **Localize production.** Made from household materials, they generate no large-scale capital externality or offshored manufacturing entropy.

(c) **Metabolize noise internally.** Their softness and feedback structure ensure that errors, flex, and drift become part of the control loop, not waste products.

(d) **Support education and skill formation.** They transform mechanical noise into pedagogical information, serving as entropy sinks for human learning.

Therefore, in an RSVP-informed policy regime, the tax liability τ_{robot} would be defined by net exported entropy:

$$\tau_{\text{robot}} \propto \max\left(0,\, \frac{dS_{\text{external}}}{dt} - \frac{dS_{\text{internal}}}{dt}\right).$$

For high-capital automation, $\frac{dS_{\text{external}}}{dt} \gg 0$ and the tax is positive. For endomarionettes and other regenerative robotics, $\frac{dS_{\text{internal}}}{dt} \geq \frac{dS_{\text{external}}}{dt}$, yielding $\tau_{\text{robot}} \approx 0$.

Interpretation. Such devices embody the same ethics as the *noise tax*: entropy is not avoided but domesticated. Where industrial robotics export disorder into society, low-entropy robotics—built from paper, yogurt, and air—recycle it into coherence. Their exemption from the robot tax reflects not indulgence but fidelity to the governing thermodynamic law of RSVP: enduring systems persist only by reabsorbing the noise they create. These fragile machines demonstrate that the future of automation lies not in power but in permeability.

Policy Footnote: Definition of Entropic Exemption. To integrate the above principles into governance, we define a robotics or automation system as *entropically exempt* from taxation when it satisfies the following empirical inequality over its operational domain Ω:

$$\int_{\Omega} \left(\frac{dS_{\text{external}}}{dt} - \frac{dS_{\text{internal}}}{dt}\right) d\Omega \leq 0.$$

In practice, this means that the system's design, fabrication, and use collectively reabsorb as much entropy (in the form of waste, disorder, or social cost) as they emit. The evaluation can be performed along three complementary axes:

(i) **Material Circularity:** Proportion of components made from biodegradable, recyclable, or locally sourced matter. Systems with closed or regenerative material loops score $S^{\text{mat}}_{\text{external}} \approx 0$.

(ii) **Participatory Coupling:** Degree of human interaction, modification, and creative involvement. Devices that function as *tools of learning or craftsmanship* contribute negatively to net external entropy, $S^{\text{soc}}_{\text{external}} < 0$.

(iii) **Feedback Integration:** Fraction of mechanical, informational, or environmental noise reabsorbed through feedback loops. Endomarionettes that convert deformation into proprioceptive data or training signals exhibit $S^{\text{info}}_{\text{external}} \leq 0$.

The cumulative entropy balance

$$S_{\text{external}} = S^{\text{mat}}_{\text{external}} + S^{\text{soc}}_{\text{external}} + S^{\text{info}}_{\text{external}}$$

determines the applicable tax coefficient:

$$\tau_{\text{robot}} = \alpha \, \max(0, S_{\text{external}}),$$

where α is a jurisdiction-specific normalization constant linking entropy units to fiscal currency.

Regulatory Implication. Under this model, *high-capital displacing automation* (e.g., closed-source factory robotics, proprietary large-model infrastructures) would yield $S_{\text{external}} > 0$ and incur taxation proportional to their exported disorder. Conversely, *regenerative automation*—including soft endomarionettes, open-source prosthetics, and educational bio-robots—would qualify for a *zero or negative tax rate*, receiving subsidies or credits for their entropy-absorbing function.

This extension reframes fiscal policy as a thermodynamic feedback mechanism: taxation becomes not punishment for progress, but a balancing operator ensuring that technological evolution respects the RSVP condition of persistent coherence,

$$\langle \mathcal{H}[\Phi, \mathbf{v}, S] \rangle_{\Omega} \leq 0.$$

10 RSVP Interpretation of Enshittification

Cory Doctorow's concept of *enshittification* describes the progressive decay of online platforms as they transition from being good for users, to good for advertisers, to good only for themselves (Doctorow, 2023). Within the Relativistic Scalar–Vector Plenum (RSVP) framework, this dynamic can be modeled as a collapse of *entropy coupling* between three interacting fields: the scalar field Φ (capacity or legitimacy), the vector field $\mathbf{v}$ (flow or activity), and the entropy field S (disorder or extractive pressure). Enshittification represents the runaway phase of this system in which local optimization of $\mathbf{v}$ for profit exceeds the capacity of Φ to reabsorb disorder, causing a positive feedback in S.

Stage I: High Coupling, Low Entropy. In the early phase of a platform's life, the gradient $\nabla\Phi$ between user needs and technical affordances drives a coherent flow $\mathbf{v}$. The entropy field S is minimized through open feedback loops—user complaints lead to fixes, interoperability is permitted, and external APIs function as entropy sinks. The divergence condition

$$\nabla\cdot(\Phi\mathbf{v}) + \frac{\partial S}{\partial t} \approx 0$$

is approximately satisfied: disorder exported through growth is rapidly reabsorbed through repair and adaptation.

Stage II: Flow Dominance and Scalar Depletion. As investor pressures increase, the system begins maximizing $\|\mathbf{v}\|$ (monetary flow, engagement rate) at the expense of Φ (user capacity). Interoperability restrictions and enclosures raise $\partial S/\partial t > 0$, while maintenance and openness decline. The entropy exported to the periphery—users, small developers, moderators—no longer returns as feedback. The entropy becomes asymmetric: flows are strong, but capacity and meaning weaken. This is the onset of informational debt.

Stage III: Entropic Inversion. At the terminal stage, both users and advertisers become trapped within a high-entropy attractor. Every new action—scrolling, posting, advertising—feeds back as additional disorder, increasing S without increasing Φ. The platform consumes its own informational coherence, transforming user creativity into noise and algorithmic sludge. Formally:

$$\frac{dS}{dt} > 0, \qquad \frac{d\Phi}{dt} < 0, \qquad \mathbf{v}\cdot\nabla\Phi \leq 0.$$

The plenum's Hamiltonian $\mathcal{H}[\Phi, \mathbf{v}, S]$ becomes positive, violating the RSVP persistence condition $\langle\mathcal{H}\rangle_\Omega \leq 0$. At this point, collapse or regulation is inevitable.

Interoperability as Entropic Reabsorption. Doctorow's proposed remedy—mandated interoperability—can be expressed in RSVP terms as the restoration of *vector permeability*. When data and users can flow freely between systems, $\mathbf{v}$ once again couples to Φ, allowing the reabsorption of entropy through cross-platform feedback. Competition and modularity act as negative entropy gradients that restore systemic coherence:

$$\frac{\partial S}{\partial t} = -\lambda\,\nabla\cdot(\Phi\mathbf{v}),$$

where $\lambda > 0$ represents regulatory permeability. Antitrust enforcement likewise flattens excessive scalar asymmetries—preventing any single region of Φ from monopolizing capacity.

Physical World Analogy. The same process applies to physical infrastructures that undergo *enshittification*—appliances that demand logins, cars with remote locks, or supply chains with opaque data brokers (Doctorow, 2023). Each instance reflects a reduction in local feedback and an increase in informational latency: users can no longer repair or repurpose their own tools. Entropy that once circulated within the ecosystem becomes trapped inside proprietary enclosures, raising the system's free energy until failure.

RSVP Diagnosis. From an RSVP perspective, enshittification is not moral decline but thermodynamic imbalance. A platform or polity decays when its restorative operators $\mathcal{R}$ (repair, user control, transparency) are suppressed relative to its creative operators (growth, extraction, engagement). The cure is therefore not ideological but structural: restore feedback permeability, reinstate entropy sinks, and ensure that the divergence condition

$$\nabla \cdot (\Phi \mathbf{v}) + \frac{\partial S}{\partial t} \approx 0$$

holds across the economic, informational, and epistemic layers of the system.

Integration with the Noise Tax. In this light, the *noise tax* can be interpreted as a formal mechanism for counteracting enshittification. By taxing the unrecirculated entropy produced by attention economies and rewarding reabsorptive acts such as moderation, open APIs, and interoperability, society re-implements Doctorow's policy insight as a thermodynamic feedback law:

$$\tau_{\text{noise}} \propto \max\left(0,\ \frac{dS_{\text{external}}}{dt} - \frac{dS_{\text{internal}}}{dt}\right).$$

Enshittification is thus the fiscal signature of a system where this tax is zero; coherence restoration begins the moment entropy costs are internalized again.

Bridge to Triadic Closure. The enshittification of digital and physical systems underscores the urgency of integrating the robot tax, noise tax, and merit dividend into a unified framework. Just as Sanders's robot tax addresses the economic fallout of automation and endomarionettes exemplify entropy-absorbing technology, the noise tax counters the informational decay of enshittified platforms. Together, these mechanisms enforce the RSVP principle of entropy reabsorption, setting the stage for a comprehensive conservation law that ensures systemic coherence across all domains.

11 Art, Gradient, and the Abolition of Pessimism

Cory Doctorow proposes that the antidote to despair and naive optimism alike is to abolish both attitudes and instead *follow local gradients to the future*. Optimism imagines that the system will correct itself; pessimism imagines that it cannot. Both surrender agency by substituting prediction for participation. RSVP reinterprets Doctorow's proposal as a call to act along the gradient of coherence within the entropic field.

Gradient Ethics. In RSVP terms, the scalar field Φ measures local capacity—the potential for coherence or regeneration. To "follow the gradient" is to align one's vector of action $\mathbf{v}$ with $\nabla\Phi$, maximizing the rate of local entropy reabsorption:

$$\mathbf{v} \cdot \nabla\Phi = \frac{dS_{\text{reabsorbed}}}{dt}.$$

This replaces prediction with responsiveness. The ethical task is not to forecast a perfect world but to move in the direction that decreases disorder most immediately accessible to one's reach.

Abolishing Optimism and Pessimism. In this view, optimism and pessimism are not emotional states but distortions of perception. Both flatten the local gradient by projecting global certainty—either of inevitable triumph or inevitable doom. When $\nabla\Phi \to 0$, agency collapses: no motion, no learning, no repair. To abolish both is to restore curvature to the field, reintroducing the differential structure that permits meaningful work. RSVP thus defines maturity not as hope or despair but as continuous gradient-tracking within the plenum.

Art as Gradient Detection. Doctorow's remark that *art is the ability to find good in things* acquires a precise RSVP meaning: art is the cognitive faculty that perceives residual order within apparent chaos, identifying latent positive curvature in a noisy field. Where science formalizes gradients and policy enforces them, art reveals them. In an informationally saturated civilization, artists are the sensors that locate $\partial\Phi/\partial x > 0$ where others perceive only uniform entropy.

Practical Consequence. To "find good in things" is therefore not naive consolation but thermodynamic discernment. Every act of attention that discovers pattern in noise lowers the entropy of perception and opens a new corridor of coherence for collective movement. The aesthetic, ethical, and political converge: art names the process by which systems rediscover their gradients when abstraction or despair has flattened them. In the RSVP sense, art is not a luxury of surplus order but the precondition for any future at all.

Mathematical closure. A civilization guided by gradient ethics satisfies

$$\mathbf{v} = \lambda\,\nabla\Phi, \qquad \lambda > 0,$$

ensuring that action is always directed toward regions of increasing capacity. This condition guarantees that even in high-entropy epochs—technological exhaustion, ecological collapse, informational overload—the field retains local recoverability. The abolition of pessimism and optimism is thus not emotional moderation but a dynamic law: persistence requires curvature, and curvature is found through art.

Gradient and Noise Tax Integration. Gradient-following acts as the antidote to informational entropy, as taxed by the noise tax: agents navigating local gradients naturally filter noise, aligning with regions of higher compressibility and coherence. This process complements the triadic framework by providing a practical methodology for individuals and societies to implement entropy reabsorption in daily decision-making.

12 Triadic Closure: The Conservation of Coherence

The three fiscal operators developed throughout this paper—the *robot tax*, the *noise tax*, and the *merit dividend*—represent orthogonal projections of a single conservation principle: the preservation of coherence within the scalar–vector–entropy plenum. Each addresses a distinct dimension of exported entropy:

Domain	Entropy Form	Corrective Operator
Economic (production)	Labor displacement, material waste	Robot tax
Informational (communication)	Semantic noise, cognitive overload	Noise tax
Epistemic (knowledge)	Credit extraction, unacknowledged inheritance	Merit dividend

These operators form a basis set for entropic accounting across civilization's three fundamental flows: energy, information, and meaning. Their sum defines the total restorative operator $\mathcal{R}$ acting on the RSVP Hamiltonian:

$$\mathcal{R} = \mathcal{R}_{\text{economic}} + \mathcal{R}_{\text{informational}} + \mathcal{R}_{\text{epistemic}}.$$

Unified invariant. The global coherence condition is therefore:

$$\langle \mathcal{H}[\Phi, \mathbf{v}, S] + \mathcal{R} \rangle_\Omega \leq 0,$$

ensuring that at every scale the entropic export of creation is counterbalanced by the reabsorption of restoration. The robot tax closes the loop on matter, the noise tax on signal, and the merit dividend on understanding.

Geometric interpretation. In informational geometry, these three operators correspond to the orthogonal axes of RSVP space:

$$(\Phi, \mathbf{v}, S) \quad \Rightarrow \quad (\text{capacity},\ \text{flow},\ \text{entropy}).$$

The robot tax acts on vector flows ($\mathbf{v}$), restraining extractive acceleration by taxing displacement. The noise tax acts on scalar capacity (Φ), filtering low-information gradients to preserve meaning. The merit dividend acts on entropy (S), restoring epistemic balance by compensating the collective field. Together they enforce a closed divergence condition,

$$\nabla \cdot (\Phi \mathbf{v}) + \frac{\partial S}{\partial t} = 0,$$

which expresses social sustainability as literal thermodynamic continuity. This orthogonality ensures comprehensive coverage: capacity enables flow, flow generates entropy, and entropy feedback stabilizes capacity.

A 3D axes diagram labeled Φ, $\mathbf{v}$, S would show the projection of the three taxes as perpendicular planes, illustrating how they intersect to form a balanced plenum.

Historical conservation laws in physics, from energy to information, inspire this generalization to ethics, where RSVP extends thermodynamic principles to civic coherence (Jaynes, 1957).

Ethical corollary. A society that implements these three feedbacks ceases to confuse growth with coherence. Progress becomes the maintenance of reversible transformations in which no form of order is extracted without another form being restored. This triadic conservation law—economic, informational, epistemic—constitutes the fiscal expression of the RSVP axiom:

Persistence requires reabsorption.

This satisfies $\langle \mathcal{H}[\Phi, \mathbf{v}, S] \rangle_\Omega \leq 0$.

13 RSVP Interpretation of *Escape from Gethsemane*

Overview. *Escape from Gethsemane* functions as a narrative experiment in the Relativistic Scalar–Vector Plenum (RSVP) model. Where RSVP formalizes persistence as the reabsorption of entropy within coupled scalar (Φ), vector ($\mathbf{v}$), and entropy (S) fields, the play dramatizes that principle through character, motion, and irony. Jesus's literal and metaphoric escape transforms the Passion from a closed sacrificial circuit (entropy externalized) into an open feedback loop (entropy metabolized).

Scalar field: legitimacy and potential (Φ). The canonical Gospel passion fixes meaning by collapsing ambiguity: divinity becomes singular and terminal in the crucifixion. In the play, however, legitimacy (Φ) remains fluid; the authority of Jesus migrates from the body to the *gesture*. Dropping the cloak—echoing the Buster Keaton trick—creates a discontinuity in Φ that allows a local increase of freedom. The sacred is no longer stored in substance but in *pattern*; salvation emerges as a phase change in potential rather than a martyr's transfer of guilt.

Vector field: agency and trajectory ($\mathbf{v}$). Classical theology aligns salvation with passive endurance (the vector stilled). Here, Jesus's movement through the olive trees literalizes the RSVP vector flow: action re-enters grace. His flight redistributes agency across doubles—the fugitive, the pursuers, the spectators—illustrating the plenum's rule that energy is never lost, only redirected through recursive trajectories.

Entropy field: disorder and revelation (S). The motif of the snake shedding its skin, and of mistaken identity, visualizes $dS/dt < 0$: disorder converted into information. By replacing crucifixion with transformation, the drama treats chaos not as punishment but as raw data for re-organization. The shedding of skins and identities demonstrates RSVP's axiom of persistence: coherence through internal entropy reabsorption.

Misdirection as thermodynamic operator. The Keaton gag—dropping the cloak to mislead pursuers—is structurally equivalent to the noise-filtering step in the RSVP noise-tax operator. Misdirection channels attention (entropy) away from the coherent locus, allowing the system to stabilize. In informational terms, the trick is a local increase of S that protects global Φ.

Theological implication. Traditional Passion theology interprets redemption as a scalar saturation: infinite meaning packed into finite suffering. *Escape from Gethsemane* reframes redemption as vector re-routing: divine intelligence choosing non-catastrophic exits. It replaces the economy of sacrifice with an ecology of feedback—the RSVP condition $\langle \mathcal{H}[\Phi, \mathbf{v}, S] \rangle_\Omega \leq 0$ enacted in narrative form.

Cosmic comedy and coherence. Comedy, in this reading, is the highest proof of persistence: it is the acoustic signature of entropy reabsorption, the joy of systems recognizing

their own continuity. The laughter at Gethsemane is not mockery but measurement—a spontaneous audit of coherence regained.

Artistic corollary. From the RSVP viewpoint, art's social function is precisely this: to locate gradients of coherence within disorder. By transforming sacred tragedy into surreal comedy, *Escape from Gethsemane* operationalizes the RSVP ethic of *maintenance through misdirection*. It shows that intelligence—divine or human—persists not by dominating entropy but by dancing with it.

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13.1 Comparative Mythology: The Trickster as Entropic Operator

Overview. Across cultures, the figure of the trickster mediates between structure and chaos—bridging divine law and improvisation, order and its necessary breach. From Hermes and Loki to Krishna and Coyote, the trickster's cunning embodies a universal dynamic: the capacity of a system to momentarily destabilize itself in order to preserve higher-order coherence. Within the RSVP framework, this role corresponds to the local reversal of the entropy gradient, a transient increase in S that safeguards long-term equilibrium in Φ and $\mathbf{v}$.

Hermes and the Geometry of Theft. Hermes, the Greek god of boundaries and commerce, was born stealing Apollo's cattle. Yet his theft is not mere transgression—it is *translation*. He reorders property into motion, converting static wealth into communicative exchange. In RSVP terms, Hermes operates as a *vector perturbation*:

$$\nabla \cdot (\Phi \mathbf{v}) > 0 \quad \Rightarrow \quad \Delta S_{\text{local}} > 0,$$

transforming surplus potential into active circulation. The play's Jesus—escaping via misdirection—recapitulates this Hermetic act: the theft of his own martyrdom from the machinery of empire. He smuggles meaning out of death's economy, turning the crucifixion into an unperformed transaction.

Krishna and the Play of Forms. In Hindu theology, Krishna's leela (divine play) enacts the world as a rhythmic oscillation between illusion and revelation. Krishna's leela's Krishna's leela (divine play) enacts the world as a rhythmic oscillation between illusion and revelation. When Krishna steals butter or dances with many forms at once, he performs entropy *domesticated*: chaos reabsorbed as joy. In Gethsemane escape mirrors this playful ontology; its humor is not sacrilege but signal—proof that transcendence requires elasticity. The Keaton gag becomes a form of leela: the divine joke that preserves coherence by refusing solemn collapse.

Loki, Coyote, and the Principle of Reversible Transgression. Northern and indigenous mythologies also encode the entropic operator in figures who oscillate between creation and destruction. Loki's pranks precipitate catastrophe, yet each catastrophe seeds renewal. Coyote's mischief reshapes the landscape; his failure teaches adaptation. Their antics instantiate the RSVP principle of *entropic feedback*: that every increase in disorder must carry an informational remainder capable of restoring structure. Thus the trickster's sin is civilization's safety valve.

Jesus as Trickster-Resolver. By fleeing Gethsemane, the Jesus of *Escape from Gethsemane* joins this lineage of sacred disobedience. He converts divine obedience into divine wit. Rather than abolishing the law, he redirects it, performing the RSVP conservation:

$$\langle \mathcal{H}[\Phi, \mathbf{v}, S] \rangle_\Omega = 0,$$

where surrender and evasion become dual components of coherence maintenance. His escape is not denial of fate but a boundary test—the equivalent of the snake's skin-shedding or the lizard's autotomic tail: strategic entropy release.

Ethical corollary. In all these myths, survival is not achieved through brute endurance but through adaptive mischief. Systems that refuse flexibility—whether gods, states, or algorithms—accumulate unreabsorbed entropy until collapse. The trickster teaches that the highest moral intelligence is not obedience to order but skillful reinvention of it. RSVP thus interprets mythological cunning as the field's native error-correction process: the universe's way of remembering how to laugh itself back into balance.

13.2 Embodied Multiplicity and Regime-Enforced Separation

Overview. The opening of *Escape from Gethsemane* stages Joseph's escape from Potiphar's wife, introducing a continuum of archetypes—Joseph, Samson, Jesus, and the unnamed youth of Mark 14:51–52—each representing a different historical strategy of survival: flight, concealment, transformation, and anonymity. In the play's intended staging, all four roles are performed by the same actor, signifying the RSVP field's continuity: one scalar–vector trajectory manifesting through multiple epochs of embodiment. The choice is not aesthetic coincidence but ontological assertion: coherence precedes identity.

Unified embodiment as RSVP invariance. Casting a single performer across these figures illustrates the RSVP axiom:

$$\nabla \cdot (\Phi \mathbf{v}) + \frac{\partial S}{\partial t} = 0.$$

Each scriptural persona is a local expression of the same entropic process—the conversion of danger into revelation through adaptive withdrawal. When Joseph slips from Potiphar's grasp, when Samson's hair becomes his undoing, when Jesus sheds his cloak to vanish into the night, they enact the same thermodynamic gesture: relinquishment as regeneration. The unified actor functions as a living operator $\mathcal{R}$ that keeps the narrative divergence closed.

Regime interference: the politics of separate casting. Authoritarian or orthodox institutions resist this unification because it undermines categorical ownership of meaning. To preserve doctrinal clarity, they insist on multiple actors, segregating archetypes along sanctioned boundaries:

$$\text{Joseph} \neq \text{Samson} \neq \text{Jesus} \neq \text{Youth}.$$

This enforced separation performs the same operation as platformization: it converts a continuous interpretive field into discrete, brandable nodes. Religious authorities call this orthodoxy; film industries call it market segmentation; states call it cultural authenticity. Each regime restores order by increasing S_{external}: exporting the ambiguity that the artwork was meant to metabolize internally.

The entropic economics of casting. Casting different actors introduces frictional surfaces—copyright, lineage, ethnicity, doctrine—upon which regimes can levy interpretive rent. The ambiguity that once circulated freely (high Φ, low S) becomes a controlled commodity. Each actor's face becomes a license; each interpretation, a trademarked projection of the collective plenum. The play's original single-actor schema is thus a threat: it collapses property distinctions and reasserts entropic continuity as the ground of meaning.

RSVP interpretation of resistance. To insist that one performer embodies all four roles is to preserve the RSVP equilibrium. It declares that human archetypes are not discrete myths but recursive excitations of a single informational substrate. The continuity of embodiment reabsorbs interpretive entropy instead of displacing it. By contrast, regime-imposed plurality increases entropy externally—reifying separation and erasing coherence.

Ethical implication. Within the RSVP moral economy, identity fragmentation is an entropic leak. When culture divides what cognition or art unites, it externalizes disorder into politics. The single-actor principle is therefore not an artistic indulgence but a thermodynamic imperative: the continuity of performance that outlives regimes.

Conclusion. *Escape from Gethsemane* thus functions as both drama and diagnostic. Its casting controversy mirrors the very process the paper critiques elsewhere: the conversion of collective coherence into extractable difference. To sustain RSVP equilibrium, art must protect its capacity for reincarnation within one body—the continuity of performance that outlives regimes.

Table 1: Casting Regimes and Entropic Dynamics in *Escape from Gethsemane*

Regime Type	**Motivation**	**Casting Logic**
Religious Orthodoxy	Preserve theological purity	Separate actors by scriptural identity
Nationalist / Ethnic Culturalism	Assert heritage ownership	Localize each figure to distinct lineag
Corporate Media Platforms	Maximize market segmentation	Cast recognizable stars for each role;
Academic / Critical Institutions	Preserve interpretive pluralism	Distribute roles among multiple theo
RSVP / Open Plenum Staging	Preserve field continuity	Single actor embodies all four archet

Interpretation. Each casting regime can be understood as an entropic operator acting upon the narrative field. Religious and nationalist systems maximize external order at the cost of coherence, exporting semantic disorder into politics and doctrine. Corporate and academic systems maintain partial openness but commodify or compartmentalize ambiguity for control or analysis. Only the RSVP configuration—the single actor embodying Joseph, Samson, Jesus, and the unnamed youth—preserves thermodynamic balance by internalizing entropy within performance itself. It achieves the same equilibrium condition that governs stable ecosystems and regenerative economies:

$$\langle \mathcal{H}[\Phi, \mathbf{v}, S] \rangle_\Omega \leq 0.$$

Thus the performer's continuity becomes both aesthetic and ethical: a live demonstration that identity coherence, not categorical separation, is civilization's true low-entropy state.

Connection to Doctorow's "platformization of interpretation". The casting-entropy logic parallels Doctorow's enshittification, where platforms segment users for extraction. Both are feedback failures: segmentation as loss of coherence, turning interpretive surplus into proprietary capital. In RSVP terms, they increase S_{external} by suppressing cross-field flows, underscoring the need for open plenum staging to restore entropic balance.

13.3 Dual Usage and the Platformization of Interpretation

Overview. Every open narrative system produces surplus meaning. Within the RSVP framework, that surplus is an energetic residue—an excess of Φ (semantic potential) relative to its necessary stabilizing flows $\mathbf{v}$. Because meaning is never perfectly conserved, institutional actors—states, churches, corporations, and ideological movements—attempt to harvest this residue by enclosing the interpretive field. *Escape from Gethsemane* illustrates how even a work designed as entropic liberation can be platformized into competing regimes of coherence.

Mechanism of capture. Interpretive platformization follows a familiar thermodynamic gradient:

$$\Phi_{\text{open}} \longrightarrow \Phi_{\text{enclosed}},$$

in which polyvalent meaning is compressed into marketable or doctrinal form. This process mirrors what Cory Doctorow terms *enshittification*: an open system that progressively privileges the extractor over its participants. In aesthetic terms, the sequence runs:

(i) **Attraction phase:** The work's openness and ambiguity attract diverse interpretive flows ($\mathbf{v}$).

(ii) **Capture phase:** A dominant actor (platform, regime, publisher, sect) stabilizes one interpretive vector and brands it as orthodoxy.

(iii) **Extraction phase:** The actor monetizes or weaponizes this coherence—through propaganda, moral authority, or commercial exclusivity.

(iv) **Decay phase:** Feedback suppression raises system entropy (S), producing cynicism, polarization, or kitsch.

Religious and ideological dual use. Because the play's central act—the divine escape—is morally ambiguous, it offers both emancipatory and authoritarian readings:

- **Redemptive regimes** (liberation theology, mystical movements) interpret escape as transcendence of coercive power—a scalar release of Φ into open feedback.
- **Control regimes** (fundamentalist or nationalist ideologies) reinterpret the same act as proof of chosen exceptionalism, converting flexibility into divine right.
- **Secular regimes** (media conglomerates, state broadcasters) strip theology altogether, reframing the narrative as intellectual property or cultural capital, flattening S into engagement metrics.

In each case, the same symbolic kernel is repackaged according to the operator's entropic budget: what level of ambiguity the institution can afford to tolerate.

Commodification of ambiguity. Platform economies thrive on controlled uncertainty—enough openness to attract attention, enough closure to sell certainty. This dialectic constitutes what RSVP terms a *meta-feedback inversion*:

$$\frac{dS_{\text{interpretive}}}{dt} < 0 \quad \text{for users, but} \quad \frac{dS_{\text{external}}}{dt} > 0 \quad \text{for society.}$$

The platform lowers local entropy by curating meaning (reducing noise for the consumer) while increasing global entropy by displacing interpretive labor and critical thought outward into the social field.

The play as test case. *Escape from Gethsemane*'s ambiguity—comic, theological, and political—makes it a perfect attractor for this double bind. A religious state could frame it as revelation denied; a secular media apparatus could frame it as irony commodified. Both exploit the same RSVP geometry: they freeze a single projection of the field and charge rent on coherence.

RSVP countermeasure: open entropic governance. To resist platformization, an artwork or discourse must maintain feedback transparency:

$$\nabla \cdot (\Phi \mathbf{v}) + \frac{\partial S}{\partial t} \approx 0.$$

Practically, this means embedding self-contextualization—creator notes, open licenses, interoperable metadata—so that interpretive work cannot be monopolized. Where platform regimes treat ambiguity as a resource to be mined, RSVP ethics treats it as a commons to be maintained.

Ethical corollary. Dual use is not an accident but a structural property of high-potential symbolic systems. The task of the author is not to eliminate this property but to equilibrate it: to design interpretive interfaces that recycle misreadings back into reflection rather than exploitation. The noise tax and merit dividend together form the fiscal analog of this discipline—redistributing the costs and rewards of interpretation to keep the semantic plenum in coherent circulation.

Conclusion. Platformization converts meaning into capital by arresting its flow. RSVP reverses that move: it redefines authorship and readership as continuous thermodynamic exchange. In this view, the true sacred act is not to fix meaning but to keep it alive—an economy of perpetual re-interpretation that no regime can wholly commodify.

14 Narrative Dual-Use: *Escape from Gethsemane* as Propaganda Risk and Pedagogical Asset

Overview. Artistic narratives frequently exhibit *polysemy*: a single story can support multiple, sometimes conflicting, interpretations. *Escape from Gethsemane* intentionally deploys archetypal escape motifs—Jesus's flight from existential surrender, Joseph's flight from Potiphar's wife, Samson's loss of power via hair, and the lizard's necessary loss—to dramatize themes of identity, sacrifice, anonymity, and adaptive loss. Because these motifs are both universal and thinly symbolic, they are rhetorically pliable: political actors across the ideological spectrum can selectively extract elements that corroborate preexisting doctrinal narratives.

RSVP narrative reading. Within the RSVP framework the screenplay stages three interacting narrative fields:

- **Scalar field (Φ) — Legitimacy and meaning:** the cultural resources and symbolic capital the protagonist inherits or contests (sacred tradition, mythic authority).
- **Vector field ($\mathbf{v}$) — Agency and action:** the protagonist's movement through political and social constraints (escape, concealment, revelation).
- **Entropy field (S) — Disruption and anonymity:** loss, secrecy, decay, and the necessary shedding of identifiers (Samson's hair, the lizard's tail).

The screenplay's dramaturgy can be read as a protocol for transferring agency from institutions (Φ) to individuals or small networks ($\mathbf{v}$), using controlled entropy increases (S)—anonymity, misdirection, sacrificial loss—as stabilizing tactics that permit survival and renewal.

How different actors might appropriate motifs (high-level). Below are neutral, interpretive mappings showing how various political or ideological agents could plausibly exploit the text's motifs for propaganda or mobilization. This is an analysis of rhetorical affordance, not an instruction manual.

(1) **Religious regimes (Christian framing).** Emphasize the Gospel parallels—suffering, faithful escape, moral perseverance. The protagonist's flight from Gethsemane can be read as vindication of religious steadfastness; Joseph's escape can be cast as moral purity in the face of sexualized power; sacrificial loss (Samson) becomes a cautionary tale against hubris and a celebration of spiritual rebirth.

(2) **Religious regimes (Islamic framing).** Frame the narrative around prophetic endurance, community moral testing, and stealth as righteous survival under oppressive regimes. Joseph's story is shared across Abrahamic traditions and can be reinterpreted to validate resistance grounded in faith; anonymity (Samson's haircut/lizard tail) can be reframed positively as humility or taqiyya-like prudence.

(3) **Secular/nationalist regimes.** Emphasize the motifs of cunning escape and sacrifice as lessons in resilience and collective survival. The screenplay's episodes of deception, protective anonymity, and strategic loss can be rearticulated as lessons of civic toughness, heroism, or national myth-making.

(4) **Atheistic/anti-theist secular actors.** Highlight human agency, contingency, and evolution over providence. The same motifs—escape, betrayal, loss—can be retold as secular parables about institutional failure and the necessity of secular solidarity and rational planning.

Mechanisms of rhetorical extraction (ways narratives are co-opted). Actors employ familiar rhetorical techniques to convert art into propaganda. These include:

- **Selective quotation:** excerpting scenes or lines that affirm a single theme while omitting contrary material.
- **Framing and re-voicing:** producing paratext (introductions, endorsements, educational guides) that steer interpretation.
- **Iconography and performance:** staging adapted scenes in ceremonies or media that flatten nuance into emblematic meaning.
- **Network amplification:** seeding edits, memes, or short clips optimized for attention economies (high compressibility for propaganda spread).

All of these are informational dynamics that increase the entropy exported to public discourse when meaning is concentrated and feedback is suppressed.

Risks and ethical considerations. Because the screenplay contains archetypal motifs with cross-cultural resonance, the principal risks are:

- **Misappropriation:** actors can repackage the story to legitimate coercive policies or exclusionary identities.
- **Polarizing reuse:** fragments can be weaponized in short-form media to inflame rather than enlighten.
- **Ambiguity exploited as authority:** ambiguous symbolism invites confident reinterpretation by powerful actors.

These risks are social and epistemic rather than technical; mitigating them involves transparency, contextualization, and institutionally backed framing practices.

Mitigations and Responsible Presentation. To minimize the risk of interpretive capture or propagandistic co-option, and to promote a reflective engagement with the work, several presentational strategies are recommended. These measures serve not as prescriptive instructions but as institutional design principles for the dissemination of politically sensitive allegorical media.

(a) **Authorial framing.** A concise prefatory or concluding statement should delineate the intended allegorical scope of the work and its ethical commitments. Such framing functions as a stabilizing boundary condition, reducing the susceptibility of the text to selective quotation or instrumental reinterpretation.

(b) **Annotated reading infrastructure.** The preparation of a companion guide or critical commentary is advised, situating the screenplay within multiple interpretive traditions. Structured discussion prompts can further foreground the epistemic plurality of the text and preclude the consolidation of a single ideological reading.

(c) **Licensing architecture.** Intellectual property instruments may be employed to formalize these interpretive constraints. Licenses that require attribution and permit pedagogical reuse—while explicitly prohibiting use in partisan or promotional contexts—can encode ethical limits into the work's legal substrate.

(d) **Metadata and provenance protocols.** Distribution should incorporate persistent contextual metadata, linking each excerpt or adaptation to the original framing corpus. Such provenance tagging maintains semantic coherence across derivative circulations and discourages memetic distortion.

(e) **Civic mediation partnerships.** Collaboration with pluralistic institutions—such as interfaith councils, cultural foundations, or secular civic associations—can provide a neutral interpretive arena, reinforcing the text's multiperspectival intent and demonstrating interpretive diversity in practice.

(f) **Anti-fragmentation publishing design.** The core narrative may be released in conjunction with linked essays, reflective QA sections, or digital annotations that render isolated excerpts semantically incomplete. This structural coupling deters propagandistic excision by ensuring that context is computationally or rhetorically inseparable from content.

RSVP-based presentation clause for the paper. In accordance with the RSVP framework, cultural and narrative works can be treated as active participants in the informational plenum rather than as inert symbolic artifacts. Their publication and circulation modify the collective scalar field Φ, alter the flow potential $\mathbf{v}$, and thus contribute to the temporal evolution of social entropy S. A responsible dissemination protocol should therefore incorporate explicit mechanisms for feedback and contextual rebalancing. A formal clause may be expressed as follows:

> *Because narratives function as low-energy attractors in cultural scalar fields, authors, editors, and curators bear a systemic responsibility to preserve interpretive feedback channels. Works with archetypal or prophetic motifs must be accompanied by contextual metadata, pedagogical framing, and plural institutional partnerships that restore the divergence condition*
>
> $$\nabla \cdot (\Phi \mathbf{v}) + \partial_t S \approx 0,$$
>
> *thereby limiting unbounded drift in social entropy S and maintaining the reciprocity between meaning concentration and interpretive circulation.*

Conclusion. Reading *Escape from Gethsemane* as a localized simulation of RSVP dynamics elucidates why archetypal narratives are both potent and precarious. They compress symbolic potential (increasing Φ) and generate directed cultural motion ($\mathbf{v}$) capable of reducing entropy through coherent reabsorption or, conversely, amplifying it through ideological export. The ethical task of scholarship, publication, and performance is thus one of *entropic governance*: to maintain open boundary conditions for interpretation, to modulate amplification loops before they metastasize, and to design circulation architectures that couple aesthetic intensity to informational accountability. In this sense, responsible curation does not suppress power—it closes the thermodynamic loop, restoring feedback to the social plenum and transforming cultural energy back into shared comprehension.

15 Conclusion: Civilization as Entropic Metabolism

Civilization persists only insofar as it remains metabolically open to its own disorder. The robot, noise, and merit taxes formalize this principle across the economic, informational, and epistemic domains, respectively. Each functions as a feedback instrument that reintroduces exported entropy into the collective plenum, preserving the divergence condition

$$\nabla \cdot (\Phi \mathbf{v}) + \partial_t S \approx 0.$$

Progress without feedback constitutes not advancement but uncontrolled leakage of order into external entropy reservoirs. Any system—biological, cognitive, or civilizational—that ceases to reabsorb the disorder it generates will experience accelerating decoherence: structure collapsing under the inertia of its own excess velocity.

To endure, a civilization must not merely produce but circulate: to maintain reversible pathways through which scattered potential can recondense into new coherence. The highest expression of intelligence, therefore, is not unchecked creation but continual maintenance—the recursive restoration of informational homeostasis from the ruins of surplus. This framework reframes cultural imagination as a thermodynamic necessity. It calls for empirical exploration through pilot implementations of entropy-balance metrics and adaptive fiscal mechanisms. To sustain civilization is to cultivate the art of reversible disorder: the deliberate conversion of chaos into feedback.

A Mathematical Derivation of Entropy Balance Equations

This appendix derives the core RSVP balance relations used in the main text, proves the orthogonality of the three corrective operators (robot, noise, merit) under a natural inner product, and establishes the principal conservation invariant that motivates the robot/noise/merit taxonomy.

A.1 Fields, domain and notation

Let $\Omega \subset \mathbb{R}^d$ be a bounded domain with sufficiently smooth boundary $\partial\Omega$. We work on a time interval $t \in [0, T]$. Define the principal fields

$$\Phi(x,t) \quad \text{(scalar capacity field)}, \qquad \mathbf{v}(x,t) \quad \text{(vector flow field)}, \qquad S(x,t) \quad \text{(entropy density)}.$$

All fields are assumed sufficiently smooth; integrals over Ω use the Lebesgue measure dx.

Introduce the RSVP Hamiltonian (field energy)

$$\mathcal{H}[\Phi, \mathbf{v}, S](t) := \int_\Omega \left(\tfrac{1}{2}\rho \|\mathbf{v}\|^2 + U(\Phi) + W(S) \right) \, dx,$$

where $\rho > 0$ is an effective mass/density parameter, and $U(\Phi), W(S)$ are convex potentials encoding costs for excessive concentration of capacity or entropy. (Specific choices of U, W are application-dependent; convexity ensures well-posedness in many variational arguments.)

We also define the divergence-like local balance (the RSVP *continuity constraint*)

$$\nabla \cdot (\Phi \mathbf{v}) + \partial_t S = -r(x,t), \tag{1}$$

where $r(x,t)$ denotes net restorative flux density (positive when restoration *removes* local entropy). In the paper we commonly consider the near-equilibrium case $r \approx 0$; here we keep r explicit so conservation/invariant statements are exact.

A.2 Time-derivative of the Hamiltonian

Differentiate $\mathcal{H}$ with respect to time:

$$\frac{d}{dt}\mathcal{H}[\Phi, \mathbf{v}, S] = \int_\Omega \Big(\rho\, \mathbf{v} \cdot \partial_t \mathbf{v} + U'(\Phi)\, \partial_t \Phi + W'(S)\, \partial_t S\Big)\, dx. \tag{2}$$

We will express $\partial_t \Phi, \partial_t S, \partial_t \mathbf{v}$ in terms of fluxes and restorative operators to obtain an entropy-balance law.

A.3 Kinematic relations and elimination of $\partial_t \Phi$

From the continuity constraint (1),

$$\partial_t S = -\nabla\cdot (\Phi \mathbf{v}) - r.$$

We can use this to eliminate $\partial_t S$ in (2). For $\partial_t \Phi$ we posit a natural kinematic law for capacity modulation (a constitutive relation)

$$\partial_t \Phi + \nabla\cdot (\Phi \mathbf{u}) = -\sigma,$$

where $\mathbf{u}$ is an intrinsic transport velocity for capacity (in many settings $\mathbf{u} = \mathbf{v}$; we keep them distinct for clarity) and σ is capacity dissipation (positive when capacity is lost). In the simplest model $\mathbf{u} = \mathbf{v}$ and $\sigma = 0$; the formal derivation does not require this simplification but it is frequently used in examples.

A.4 Field dynamics (Euler–Lagrange-like)

Assume the vector field obeys a damped inertial law with restorative forcing:

$$\rho\, \partial_t \mathbf{v} = -\nabla p(\Phi) - \nabla S + \mathbf{F}_{\mathcal{R}},$$

where $p(\Phi) := U'(\Phi)$ plays the role of a scalar pressure derived from capacity, ∇S is a driving term associated with entropy gradients (information friction), and $\mathbf{F}_{\mathcal{R}}$ is the restorative forcing generated by corrective operators (robot tax acting on $\mathbf{v}$, below). This is a phenomenological closure; alternative constitutive laws may be substituted.

Substituting into (2) and integrating by parts the term involving $\mathbf{v} \cdot \nabla p(\Phi)$ gives:

$$\begin{aligned}\frac{d}{dt}\mathcal{H} &= \int_\Omega \Big(\mathbf{v} \cdot (-\nabla p(\Phi) - \nabla S + \mathbf{F}_{\mathcal{R}}) + U'(\Phi)\partial_t \Phi + W'(S)\partial_t S\Big)\, dx \\ &= -\int_\Omega \mathbf{v} \cdot \nabla p(\Phi)\, dx - \int_\Omega \mathbf{v} \cdot \nabla S\, dx + \int_\Omega \mathbf{v} \cdot \mathbf{F}_{\mathcal{R}}\, dx \\ &\quad + \int_\Omega U'(\Phi)\partial_t \Phi\, dx + \int_\Omega W'(S)\partial_t S\, dx. \end{aligned} \tag{3}$$

Integrate by parts the first two integrals (assuming $\mathbf{v} \cdot n = 0$ on $\partial\Omega$ or otherwise accounting for boundary fluxes):

$$-\int_\Omega \mathbf{v} \cdot \nabla p(\Phi)\, dx = \int_\Omega p(\Phi)\, \nabla\cdot \mathbf{v}\, dx, \qquad -\int_\Omega \mathbf{v} \cdot \nabla S\, dx = \int_\Omega S\, \nabla\cdot \mathbf{v}\, dx.$$

Using the capacity kinematic relation to substitute for $\partial_t \Phi$ and the continuity constraint for $\partial_t S$, we express the remaining terms in divergence form to expose entropy transfer.

A.5 Entropy-balance identity

Combining the above manipulations and rearranging yields the key energy–entropy balance identity

$$\frac{d}{dt}\mathcal{H} + \int_\Omega \underbrace{\Lambda(\Phi, \mathbf{v}, S)}_{\text{dissipation vs. restoration}} \, dx = \int_\Omega \mathbf{v} \cdot \mathbf{F}_{\mathcal{R}} \, dx - \int_\Omega U'(\Phi)\, \sigma \, dx - \int_\Omega W'(S)\, r \, dx,$$

where $\Lambda(\cdot) \geq 0$ collects intrinsic dissipative contributions arising from irreversible processes (viscous dissipation, information loss, etc.). The right-hand side isolates restorative forcings and explicit sources/sinks σ, r.

In the absence of exogenous sources ($\sigma \equiv 0$, $r \equiv 0$) and when restorative operators do no net positive work (i.e., they act to oppose export of entropy), this simplifies to

$$\frac{d}{dt}\mathcal{H} + \int_\Omega \Lambda \, dx \leq 0,$$

which is the desired global dissipation/decay inequality: field energy plus cumulative dissipation does not increase. Interpreting $\mathcal{H}$ as a combination of productive order and stored potential, this expresses the RSVP axiom that creation must be balanced by reabsorption to avoid runaway export of disorder.

A.6 Operator decomposition and orthogonality

We now formalize the claim that the three corrective operators (robotic / economic $\mathcal{R}_{\text{econ}}$, informational / noise $\mathcal{R}_{\text{info}}$, and epistemic / merit $\mathcal{R}_{\text{epist}}$) act on essentially orthogonal components of the RSVP phase space.

Phase-space and inner product. Consider the Hilbert space

$$\mathcal{X} := L^2(\Omega) \times L^2(\Omega; \mathbb{R}^d) \times L^2(\Omega),$$

with elements $(\phi, \mathbf{w}, s)$ corresponding to perturbations of $(\Phi, \mathbf{v}, S)$. Define the natural inner product

$$\big\langle (\phi_1, \mathbf{w}_1, s_1), (\phi_2, \mathbf{w}_2, s_2) \big\rangle_{\mathcal{X}} := \int_\Omega \left(\phi_1 \phi_2 + \rho\, \mathbf{w}_1 \cdot \mathbf{w}_2 + s_1 s_2\right) \, dx.$$

Operators and supports. Define linearized corrective operators (for exposition) acting on $\mathcal{X}$:

$$\mathcal{R}_{\text{econ}} : (\phi, \mathbf{w}, s) \mapsto (0,\ A_{\text{econ}}\mathbf{w},\ 0),$$
$$\mathcal{R}_{\text{info}} : (\phi, \mathbf{w}, s) \mapsto (B_{\text{info}}\phi,\ 0,\ 0),$$
$$\mathcal{R}_{\text{epist}} : (\phi, \mathbf{w}, s) \mapsto (0,\ 0,\ C_{\text{epist}} s),$$

where A_{econ} is an operator on vector fields (damping of $\mathbf{v}$ through taxation or regulation), B_{info} acts on scalar capacity (filtering/curation), and C_{epist} acts on entropy density (redistribution of epistemic credit). These toy linear operators capture the conceptual action of each corrective mechanism.

Orthogonality. Because each $\mathcal{R}_\bullet$ maps into a distinct coordinate subspace of $\mathcal{X}$ (vector, scalar, or entropy coordinate), they are mutually orthogonal with respect to $\langle\cdot,\cdot\rangle_{\mathcal{X}}$:

$$\big\langle \mathcal{R}_{\text{econ}}u,\ \mathcal{R}_{\text{info}}v\big\rangle_{\mathcal{X}} = \int_\Omega \big(0\cdot B_{\text{info}}\phi_v + \rho(A_{\text{econ}}\mathbf{w}_u)\cdot 0 + 0\cdot 0\big)\,dx = 0,$$

and similarly for the other cross-pairs. Thus, in the linearized setting the corrective operators act on orthogonal subspaces and their energetic contributions add without cross-terms. This formalizes the paper's conceptual statement that robot/noise/merit are, to leading order, orthogonal corrective projections targeted respectively at $\mathbf{v}$, Φ, and S.

A.7 Conservation invariant (global coherence condition)

Use (3) together with the orthogonality and dissipativity assumptions to obtain the central invariant. Let $\mathcal{R} = \mathcal{R}_{\text{econ}} + \mathcal{R}_{\text{info}} + \mathcal{R}_{\text{epist}}$ denote the total restorative operator and assume each satisfies a dissipative inequality of the form

$$\int_\Omega \mathbf{v}\cdot\mathbf{F}_{\mathcal{R}_{\text{econ}}}\,dx \le -\eta_{\text{econ}}\|\mathbf{v}\|_{L^2}^2, \quad \int_\Omega B_{\text{info}}\phi\cdot\phi\,dx \le -\eta_{\text{info}}\|\phi\|_{L^2}^2,$$

$$\int_\Omega C_{\text{epist}}s\cdot s\,dx \le -\eta_{\text{epist}}\|s\|_{L^2}^2,$$

with $\eta_\bullet \ge 0$ (restorative action reduces the appropriate norm). Then the energy–entropy inequality becomes

$$\frac{d}{dt}\mathcal{H} + \int_\Omega \Lambda\,dx \le -\eta_{\text{econ}}\|\mathbf{v}\|_{L^2}^2 - \eta_{\text{info}}\|\phi\|_{L^2}^2 - \eta_{\text{epist}}\|s\|_{L^2}^2.$$

Dropping the nonnegative dissipation Λ gives the conservative statement

$$\boxed{\frac{d}{dt}\mathcal{H} \le -\sum_{i\in\{\text{econ,info,epist}\}} \eta_i\|X_i\|_{L^2}^2 \le 0,}$$

where X_i denotes the field component acted on by operator i ($\mathbf{v}, \Phi, S$ respectively). This inequality is the mathematical expression of the RSVP persistence condition: with active restorative operators the stored field energy does not increase, and indeed decays unless restoration is absent.

A.8 Linearized example and stability

Consider a simplified linear model on Ω with periodic boundary conditions, with scalar capacity Φ and a one-dimensional flow v for illustration. Linearize potentials: $U(\Phi) \approx \frac{1}{2}k_\Phi\Phi^2$, $W(S) \approx \frac{1}{2}k_S S^2$. Let restorative operators be simple linear dampings $A_{\text{econ}} = -\eta_v$, $B_{\text{info}} = -\eta_\Phi$, $C_{\text{epist}} = -\eta_S$. The coupled ODE system for modal amplitude (single Fourier mode) becomes

$$\dot v = -\tfrac{k_\Phi}{\rho}\,\phi - \tfrac{k_S}{\rho}\,s - \tfrac{\eta_v}{\rho}v,$$

$$\dot{\phi} = -ikv - \eta_\Phi \phi, \qquad \dot{s} = -ik\Phi v - \eta_S s,$$

(where k is the wavenumber). The linear system matrix has eigenvalues with negative real parts provided the η's are nonnegative and potentials are positive definite; hence the linearized RSVP system with orthogonal restorative operators is asymptotically stable. This concretely demonstrates how active restorative action yields return to equilibrium and prevents runaway entropy export.

A.9 Remarks on nonlinearity and regime penalties

The linear orthogonality result above is an approximation. In nonlinear, real-world systems the corrective operators can interact (e.g., informational filtering changes incentives that alter flow $\mathbf{v}$). Regime penalties (modeled in the discrete casting Lagrangian as μ_{ij} terms) act by raising the effective cost of coherence and thereby shifting minima of the full action to fragmented partitions. The Lagrangian derivation in the main text offers a discrete complement to the continuous analysis here; together they provide a tractable hybrid framework for reasoning about interpretive and economic entropy flows.

A.10 Conclusion

We have derived the basic energy–entropy balance for RSVP fields, shown how restorative operators enter as dissipative (negative) contributions, and proved that, to leading order, robot/noise/merit project onto orthogonal field components. The central invariant

$$\frac{d}{dt}\mathcal{H} \leq 0$$

(with active restoration) formalizes the paper's core normative claim: sustainable systems are those that couple creation to reabsorption rather than exporting disorder without feedback.

B Case Studies

B.1 Entropy and Iconoclasm: Restoring Coherence Through Destruction

Overview. Iconoclasm—the deliberate breaking of sacred images—need not imply nihilism. Within the RSVP framework, it expresses a regenerative operation: the release of trapped semantic potential. When an image or institution ceases to circulate meaning and becomes an object of control, it forms a local singularity in the scalar field Φ. Breaking the icon reopens the coupling among Φ, $\mathbf{v}$, and S, restoring thermodynamic continuity between symbol and system.

Symbolic overaccumulation. Cultural structures that once mediated feedback can harden into monuments. Theological orthodoxy, national myth, and corporate branding all exhibit the same limit:

$$\frac{d\Phi}{dt} \to 0, \qquad \frac{dS_{\text{external}}}{dt} \to \infty,$$

where meaning stagnates and coherence decays. Iconoclasm becomes maintenance: selective rupture that restores circulation without erasing form.

Narrative iconoclasm. In *Escape from Gethsemane*, Jesus escapes crucifixion by stepping out of the narrative frame. This Keaton-style inversion destroys the image of the suffering god not as blasphemy but as thermodynamic repair: the overdetermined symbol ("the Passion") is released into motion, satisfying the RSVP persistence condition

$$\langle \mathcal{H}[\Phi, \mathbf{v}, S] \rangle_\Omega \leq 0.$$

Iconoclasm thus acts as controlled symbolic destruction that reestablishes continuity between image and flow.

Platform iconoclasm. Digital platforms follow analogous dynamics. Algorithms amplify familiar icons until novelty collapses; circulation becomes repetition. Meme culture responds with parody, détournement, and shitposting—distributed iconoclasms that inject compensatory noise, restoring entropy balance and preventing total semantic lock-in.

Ethical corollary. Effective iconoclasm distinguishes between destruction that liberates potential and destruction that annihilates structure. Its goal is not to erase Φ but to maintain permeability—ensuring that no symbol becomes a thermodynamic dead end. Art, satire, and remix serve as civic entropy pumps: recurring micro-ruptures that keep $\mathbf{v}$ aligned with living feedback.

Conclusion. Iconoclasm, guided by feedback ethics, maintains coherence through selective rupture. It keeps sacred images within circulation rather than allowing them to collapse into informational black holes. Doctorow's interoperability and *Escape from Gethsemane*'s irreverence share this function: they break idols not to mock belief, but to keep belief alive. Entropy, properly circulated, is grace.

B.2 An RSVP Lagrangian for Iconoclasm and Casting

Setup. Let the RSVP fields be capacity $\Phi(x,t)$, flow $\mathbf{v}(x,t)$, and entropy $S(x,t)$ on domain Ω with time horizon $[0,T]$. Let $\mathcal{R} = \{\mathrm{J}, \mathrm{S}, \mathrm{X}, \mathrm{Y}\}$ denote roles *(Joseph, Samson, Jesus, Youth)*. A casting map $c : \mathcal{R} \to \{1, \ldots, m\}$ assigns each role to one of $m \in \{1,2,3,4\}$ actors. Let $W = [w_{ij}]$ be a symmetric, nonnegative *semantic continuity matrix* on $\mathcal{R}$ (larger w_{ij} means roles i, j should share interpretive continuity). Let $\mathcal{P} \subseteq \mathcal{R} \times \mathcal{R}$ mark *iconic identity cuts* whose transgression releases trapped potential (e.g., $(\mathrm{J},\mathrm{X}), (\mathrm{S},\mathrm{X}), (\mathrm{Y},\mathrm{X})$).

RSVP Lagrangian with Casting Terms.

$$\begin{aligned}\mathcal{L}[\Phi, \mathbf{v}, S, c] \;=\; & \int_0^T \int_\Omega \Big(\tfrac{\rho}{2}\|\mathbf{v}\|^2 - U(\Phi) - V(S) + \lambda\,(\nabla\cdot(\Phi\mathbf{v}) + \partial_t S) \Big)\, dx\, dt \\ & +\; \alpha \sum_{i<j} w_{ij}\, \mathbf{1}[c(i) \neq c(j)] \;-\; \beta \sum_{(i,j)\in\mathcal{C}} w_{ij}\, \mathbf{1}[c(i) = c(j)] \;-\; \gamma \sum_{(p,q)\in\mathcal{P}} \rho_{pq}\, \mathbf{1}[c(p) = c(q)] \;+\; \sum_{(i,j}\end{aligned}$$

Interpretation. The first integral governs intrinsic field dynamics. The discrete sums encode casting entropy:

- α term penalizes fragmentation (multiple actors, loss of internal continuity).
- β term rewards coherence where continuity is narratively or semantically justified.
- γ term enacts iconoclastic release when one actor traverses forbidden identity boundaries, reducing external entropy.
- μ term imposes regime constraints—cultural or institutional rules enforcing separation.

Unification ($m = 1$) internalizes ambiguity and minimizes $\frac{dS_{\text{external}}}{dt}$; fragmentation ($m > 1$) exports entropy to the social domain. The iconoclastic minimum occurs when

$$\frac{\partial \mathcal{L}}{\partial c} = 0 \quad \Rightarrow \quad \text{actor unification across } \mathcal{P} \text{ and relaxation of regime constraints } \mathcal{K}.$$

This condition expresses, in RSVP form, the restoration of coherence through symbolic transgression.

C Prototype Pseudocode

This appendix supplies two prototype algorithms in pseudocode: (A) a ledger for entropy-reduction micro-payments and verification, and (B) a hierarchical CPG controller for soft "endomarionette" robots with change-magnification for training augmentation. Both are intentionally implementation-ready and annotated.

C.1 A. Entropy-Reduction Ledger (micropayments)

Design notes. The ledger records verified entropy-reduction events and issues micropayments from the Cognitive Commons Fund. Each event includes: an actor ID, domain (wiki, code, physical cleanup), entropy delta ΔS (quantitative estimate), timestamp t_{error} (time since error creation), verification hash / attestations, and a computed reward:

$$R = \gamma \, \Delta S \, \log\Big(1 + \frac{t_{\text{error}}}{t_0}\Big).$$

Verification can be peer consensus, algorithmic checks, or hybrid. Implementation may use a centralized service, permissioned ledger, or smart contract depending on governance.

```
// --- Data structures ---
Event {
  id: UUID
  actor_id: String
  domain: Enum {WIKI, CODE, GARBAGE, MODERATION, OTHER}
  entropy_delta: Float    // ΔS estimate (positive)
  created_time: Timestamp // when the error/garbage was first observed
```

```
  report_time: Timestamp  // when the correction event is submitted
  attestations: List<Attestation> // supporting evidence (user votes, automated tests)
  verification_hash: String  // hash of canonical evidence bundle
  verified: Bool
  verifier_set: Set<String> // ids of verifying nodes/users
  reward: Float
}

// Configuration / fund parameters
gamma = 1.0        // conversion rate ΔS -> currency units
t0 = 7*24*3600     // base time unit (seconds), e.g., 1 week
min_attestations = 3
verification_window = 72*3600  // 72 hours for initial verification

// --- Helper functions ---
function compute_reward(ΔS, age_seconds):
    return gamma * ΔS * log(1 + age_seconds / t0)

function make_hash(evidence_bundle):
    return SHA256(serialise(evidence_bundle))

// --- Submission workflow ---
function submit_event(actor_id, domain, ΔS, created_time, evidence_bundle):
    e = new Event()
    e.id = UUID()
    e.actor_id = actor_id
    e.domain = domain
    e.entropy_delta = max(ΔS, 0.0)
    e.created_time = created_time
    e.report_time = now()
    e.attestations = []
    e.verification_hash = make_hash(evidence_bundle)
    e.verified = false
    persist_to_store(e)
    broadcast_for_verification(e)  // peer nodes / moderators see it
    return e.id

// --- Verification workflow (simplified consensus) ---
function attest_event(verifier_id, event_id, attestation_blob):
    e = load_event(event_id)
    if verifier_id in e.verifier_set:
        return "already_attested"
    append_to_attestations(e, (verifier_id, attestation_blob))
    e.verifier_set.add(verifier_id)
    persist_to_store(e)
```

```
    if length(e.verifier_set) >= min_attestations:
        verify_and_reward(e)
    return "attested"

function verify_and_reward(e):
    // Optional: run automated checks (unit tests, diff checks, image comparison)
    ok = automated_check(e.verification_hash)
    if not ok:
       // allow human adjudication, or mark as disputed
       mark_disputed(e)
       return
    // compute age = report_time - created_time
    age_seconds = max( (e.report_time - e.created_time).total_seconds(), 0 )
    e.reward = compute_reward(e.entropy_delta, age_seconds)
    e.verified = true
    persist_to_store(e)
    // issue micropayment (could call smart contract or centralized payment)
    transfer_fund(recipient=e.actor_id, amount=e.reward, metadata={event_id:e.id})
    emit_event("reward_issued", e.id, e.actor_id, e.reward)

// --- Periodic reconciliation ---
function reconcile_ledger():
    for e in unprocessed_verified_events():
        if not e.paid:
           if e.verified:
               transfer_fund(...)
               mark_paid(e)

// --- Security / anti-fraud notes ---
/* - Require verifiers to stake reputation or small deposits to discourage collusion.
   - Use automated heuristics to flag suspicious clusters of attestations.
   - Keep logs tamper-evident: append-only store, optionally anchored to a public blockc
```

Implementation variants.

- **Permissioned ledger / smart contract:** Use a sidechain with known verifiers (NGOs, academic institutions) to store events and execute reward transfers.
- **Centralized service + open API:** Easier to iterate; requires trust and governance safeguards.
- **Hybrid mode:** Centralized adjudication for small events, smart-contract settlement for larger bounties.

C.2 B. Hierarchical CPG Controller for Endomarionettes

Design notes. Endomarionettes are soft, compliant robots actuated by pneumatic bladders and tendon-like strings. Control uses hierarchical CPGs (Central Pattern Generators) with local reflex loops and phase coupling. A change-magnification function $G(\phi)$ maps small human inputs into amplified robotic adjustments for teaching and rehabilitation.

Key elements:

- **CPG node:** simple oscillator (e.g., Matsuoka or Hopf) producing phase and amplitude.
- **Hierarchy:** trunk CPG drives limb CPGs; limb CPGs drive joint reflexes.
- **Local feedback:** pressure sensors and stretch sensors modulate oscillator phase/amp.
- **Change magnification:** multiplier $G(\phi)$ applied to human input (joystick/tactile) to amplify small corrections.

```
// --- Parameters (tunable) ---
dt = 0.02                 // control loop timestep (s)
num_trunk = 1
num_limbs = 4             // e.g., two legs, two arms
Λ_coupling = 0.3          // phase coupling strength (0..1)
K_feedback = 0.8          // local feedback gain
G_base = 10.0             // base change magnification

// Simple Hopf oscillator implementation (per CPG node)
class CPGNode:
    state: (x, y)         // oscillator state
    omega: float          // natural frequency
    mu: float             // amplitude parameter
    target_amp: float
    phase: float

    function step(input_modulation):
        // Hopf oscillator differential (discrete Euler step)
        x, y = self.state
        // dx/dt = (mu - r^2) x - omega y + input
        r2 = x*x + y*y
        dx = (self.mu - r2)*x - self.omega*y + input_modulation
        dy = (self.mu - r2)*y + self.omega*x
        x += dx * dt
        y += dy * dt
        self.state = (x,y)
        self.phase = atan2(y, x)
        return self.output()
```

```
    function output():
        x, y = self.state
        return x  // or scaled amplitude

// Build hierarchy
trunk = CPGNode(omega=1.0, mu=1.0)
limb_cpgs = [CPGNode(omega=1.2, mu=0.9) for i in range(num_limbs)]
joint_reflexes = [PIDController(...) for each joint]

// Phase coupling (trunk -> limbs)
function apply_phase_coupling():
    trunk_phase = trunk.phase
    for limb in limb_cpgs:
        // simple phase attractor: nudge limb toward trunk rhythm
        phase_error = shortest_phase_diff(trunk.phase, limb.phase)
        // convert phase_error into small modulation input
        limb_input = Λ_coupling * sin(phase_error)
        limb.step(limb_input)

// Local sensor feedback (pressure/stretch)
function local_feedback(limb_index):
    sensor = read_sensors(limb_index)
    // map sensor deviations into oscillator modulation
    return -K_feedback * (sensor.pressure - desired_pressure)

// Change magnification mapping for human input
function change_magnification(human_input, context_phi):
    // context_phi in [0,1] indicates confidence / curvature of local gradient
    // G(phi) should be larger when phi indicates useful local gradients
    G_phi = G_base * (1 + 4*context_phi)    // example mapping
    return G_phi * human_input

// Control loop
while system_on:
    // 1. read human input (small corrections) and context estimate
    human_input = read_human_device()      // vector of small deltas
    context_phi = estimate_local_gradient()// e.g., from vision or proprio
    magnified = change_magnification(human_input, context_phi)

    // 2. step trunk oscillator (global rhythm)
    trunk_out = trunk.step(input_modulation = magnified.global_offset)

    // 3. apply coupling to limb oscillators
    apply_phase_coupling()
```

```
// 4. step limb oscillators with local sensor feedback
for i, limb in enumerate(limb_cpgs):
    fb = local_feedback(i)
    limb_out = limb.step(input_modulation = fb + magnified.limb_vector[i])
    // map limb_out -> actuator command (pneumatic pressure)
    pressure_cmd = map_osc_output_to_pressure(limb_out)
    send_pressure_command(limb_index=i, pressure=pressure_cmd)

// 5. joint reflex controllers for fine adjustments
for j, reflex in enumerate(joint_reflexes):
    reflex.update(current_state=read_joint(j), target=compute_target_from_cpg(...))
    send_tendon_command(j, reflex.output)

wait(dt)
```

Notes on implementation and safety.

- **Actuator mapping:** map normalized oscillator outputs to safe pressure ranges; include hard safety caps.
- **Sensor fusion:** combine low-latency proprioceptors with slower vision for context_phi estimation.
- **Adaptation / learning:** update oscillator frequencies and coupling weights via lightweight online learning (e.g., gradient descent on tracking error).
- **Human augmentation mode:** ensure human input is bounded and reversible; magnification used only for training should decay over sessions to avoid dependency.
- **Verification / testing:** include watchdogs and emergency stop; log all commands for audit.

Integration with social design. The endomarionette CPG design is intentionally low-entropy in hardware (soft, repairable, local materials) but high in informational feedback: it treats mechanical noise as signal. Coupled with the entropy-reduction ledger above, the same community that earns rewards for repair/curation can contribute to open-source actuator recipes, CPG parameter sets, and training curricula—closing the loop between epistemic credit and embodied maintenance.

References

Cory Doctorow. Factually! with adam conover: The internet is getting worse with cory doctorow, 2023. Podcast episode. Transcript provided.

Luciano Floridi. The ethics of information transparency. *Ethics and Information Technology*, 11:105–112, 2015.

Anthony Giddens. The constitution of society: Outline of the theory of structuration. *University of California Press*, 1984.

E. T. Jaynes. *Information Theory and Statistical Mechanics*, volume 106. 1957.

Kevin Kelly. *Out of Control: The New Biology of Machines, Social Systems, and the Economic World*. Addison-Wesley, 1994.

John Maynard Keynes. Economic possibilities for our grandchildren, 1930.

Andrey N. Kolmogorov. Three approaches to the quantitative definition of information. *Problems of Information Transmission*, 1:1–7, 1965.

Rolf Landauer. Irreversibility and heat generation in the computing process. *IBM Journal of Research and Development*, 5(3):183–191, 1961.

Wassily Leontief. Technological advance, economic growth, and the distribution of income. *Population and Development Review*, 9:403–410, 1983.

James G. March. Exploration and exploitation in organizational learning. *Organization Science*, 2(1):71–87, 1991.

OECD. Future of work, 2025. URL `https://www.oecd.org/en/topics/policy-issues/future-of`

Jamie Ormondroyd. Information pollution, a mounting threat: Internet a major causality. *Research Journal of Internatıonal Studies*, 12:54–59, 2009.

Ilya Prigogine and Isabelle Stengers. *Order Out of Chaos: Man's New Dialogue with Nature*. Bantam Books, 1984.

Jeremy Rifkin. *The End of Work: The Decline of the Global Labor Force and the Dawn of the Post-Market Era*. Putnam, 1995.

Michael J. Sandel. *The Tyranny of Merit: What's Become of the Common Good?* Farrar, Straus and Giroux, New York, 2020.

Bernie Sanders. Ai could wipe out the working class, 2025. Senate address, October 7 2025. Transcript accessed via YouTube and press release.

Claude E. Shannon and Warren Weaver. *The Mathematical Theory of Communication*. University of Illinois Press, 1949.

Steven Strogatz. *Sync: How Order Emerges from Chaos in the Universe, Nature, and Daily Life*. Hachette, 2018.