From Gossip to Chokepoint Capitalism: Cycles of Semantic Constraint

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Abstract

This essay examines the persistent cultural and economic anxieties surrounding computational technologies, tracing their evolution from the 1950s discourse on "automatic computers" to the contemporary reality of chokepoint capitalism. Early texts, such as Ned Chapin's *An Introduction to Automatic Computers* [Chapin, 1963], emphasized the human labor behind machine outputs, countering the myth of autonomous "giant brains." Films like *Desk Set* [des, 1957] and *The Creation of the Humanoids* [hum, 1962] dramatized these tensions, portraying computers as tools, threats, or judges of human identity. Today, platform governance—exemplified by opaque algorithmic bans—extends this lineage, granting machines not intelligence but authority. Economically, generative infrastructures mirror containerization more than the microprocessor, consolidating value into oligopolistic bottlenecks [Neumann, 2025, Giblin and Doctorow, 2022]. The essay proposes a typology of semantic infrastructures—gossip, religion, platforms, chokepoint capitalism—each emerging as an entropy-smoothing mechanism that hardens into constraint. Using the Relativistic Scalar Vector Plenum (RSVP) framework [Flyxion, 2025], it introduces semantic infrastructures that metabolize contradictions, preserving scalar density (Φ), vector flows ($\vec{v}$), and entropy ($\mathcal{S}$). Through historical analysis, cultural critique, and categorical formalism, the essay argues for designing systems that stabilize meaning without collapsing into chokepoints, offering a path toward a fourth stage of semantic infrastructure.

Introduction: From Black Boxes to Bottlenecks

Since the 1950s, computing has been shadowed by a recurring cultural anxiety: are machines black boxes that "think" or judge? Early textbooks, such as Ned Chapin's *An Introduction to Automatic Computers* [Chapin, 1963], debunked the myth of autonomous "giant brains," highlighting the extensive human labor required for data preparation and programming. Yet popular imagination, fueled by speculative essays like Alan Turing's [Turing, 1950] and films like *Desk Set* [des, 1957], framed computers as potential replacements for human expertise or arbiters of identity. Today, this anxiety is no longer speculative but lived: an algorithmic Facebook ban, issued without explanation or appeal, exemplifies machines exercising authority without comprehension.

Economically, a parallel cycle unfolds. The microprocessor sparked distributed experimentation, birthing new industries [Perez, 2002], while containerization streamlined trade

but concentrated profits downstream [Neumann, 2025]. Generative systems today follow the latter path, reinforcing oligopolies [Giblin and Doctorow, 2022]. This essay argues that these dynamics reflect a broader cycle of semantic infrastructures—gossip, religion, platforms, chokepoint capitalism—each emerging to stabilize meaning and ending as constraint. The Relativistic Scalar Vector Plenum (RSVP) framework [Flyxion, 2025] offers a field-theoretic lens to redesign these systems, preserving scalar density (Φ), vector flows ($\vec{v}$), and entropy ($\mathcal{S}$) to metabolize contradictions rather than expel them.

The essay proceeds as follows: Sections 1–2 explore the 1950s discourse and cultural imaginaries, grounding the cycle's historical roots. Sections 3–4 analyze platforms and chokepoint capitalism as modern enclosures. Section 5 formalizes the cycle across gossip, religion, platforms, and chokepoints. Section 6 introduces RSVP as an alternative, followed by new sections: Section 7 proposes semantic infrastructures as a fourth stage, Section 8 models conversations and artworks as context-trained bots, and Section 9 applies this to generative cinema. The conclusion synthesizes the argument, advocating for infrastructures that keep meaning open.

1 The Early Frame (1950s Textbooks)

In the 1950s, "automatic computers" were both technical marvels and cultural enigmas. Ned Chapin's *An Introduction to Automatic Computers* [Chapin, 1963] framed them as deterministic tools requiring meticulous human preprocessing—data collection, verification, and coding—before producing even basic outputs. This countered the popular narrative, exemplified by Edmund Berkeley's *Giant Brains, or Machines That Think* [Berkeley, 1949], which speculated that computers could mimic human reasoning. Alan Turing's essays [Turing, 1950, 1956] nuanced this, proposing that indistinguishability in specific tasks (e.g., chess) might suffice for "thinking." Professional texts, like Williams [1959] and Gregory and Horn [1960], emphasized practical applications—accounting, inventory management—over philosophical speculation.

This duality set a paradox: computers were over-ascribed intelligence before their scale made such ascriptions consequential. The scarcity of machines (a few hundred globally by 1955) kept debates abstract, but the tension—tools versus autonomous agents—foreshadowed later enclosures. For example, IBM's early systems, like the 701, required teams of operators, yet media portrayed them as self-sufficient "brains" [Edwards, 1996]. This misattribution fueled both optimism and anxiety, setting the stage for cultural narratives.

2 Cultural Imaginaries (1957–1962)

Popular media amplified these tensions. *Desk Set* [des, 1957] portrays EMERAC, an "electronic brain," threatening librarians' jobs but faltering on contextual queries, echoing Chapin's warnings. The film's resolution—humans and machines as partners—reflects a cautious optimism. Conversely, *The Creation of the Humanoids* [hum, 1962] imagines robots claiming authority to define humanity in a post-apocalyptic world. These films stage the same question—tool, partner, or judge?—but differ in scope: *Desk Set* fears workplace redundancy, while *Humanoids* grapples with existential redefinition.

Other cultural artifacts reinforced this. Science fiction, like Asimov's *I, Robot* [Asimov,

1950], explored machine ethics, while newsreels hyped computers as oracles. These narratives metabolized ambiguity, keeping the debate open rather than resolving it, unlike later platforms that enforce singular judgments.

3 Platforms as Enclosures

The shift from scarce institutional computers to ubiquitous platforms transformed ambiguity into enclosure. Platforms promised frictionless connection but delivered opaque governance. A Facebook ban, issued algorithmically without appeal, exemplifies this: a machine without associative reasoning exercises judgment over identity [Gillespie, 2018]. This mirrors gossip's reputation traps and religion's dogma at scale: platforms compress meaning (into metrics), codify flows (via feeds), and expel contradiction (as bans).

Zuboff [2019] describes this as surveillance capitalism, where user behavior is monetized through opaque algorithms. For example, YouTube's recommendation system prioritizes engagement, narrowing content diversity [Ribeiro et al., 2020]. This "Black Mirror bureaucracy" inverts *Desk Set*'s optimism: machines are not fallible assistants but unaccountable judges, operationalizing the fears of mid-century cinema.

4 Chokepoint Capitalism

Economically, platforms reflect chokepoint capitalism [Giblin and Doctorow, 2022]. Jerry Neumann's containerization analogy [Neumann, 2025] contrasts the microprocessor's distributed innovation with containerization's consolidation. Generative systems, arriving late in the ICT cycle, follow the latter: revolutionary but oligopolistic. Startups depend on proprietary APIs, unable to replicate the garage-to-giant path of early tech firms [Perez, 2002].

For example, OpenAI's API pricing locks developers into dependency, while cloud platforms like AWS control compute infrastructure. Consumers gain cheaper services, but innovators face squeezed margins, mirroring containerization's downstream value capture by firms like Walmart. This consolidation extends platform governance: just as bans constrain speech, chokepoints limit economic agency, funneling value to incumbents.

5 Continuity of Constraint Cycles

The cycle of semantic infrastructures—gossip, religion, platforms, chokepoint capitalism—reveals a pattern:

- **Gossip**: Stabilizes trust via narratives but ossifies into reputation traps, e.g., ostracism in tribal societies [Dunbar, 1996].
- **Religion**: Codifies meaning across generations but hardens into dogma, e.g., medieval Church indulgences [Huizinga, 1919].
- **Platforms**: Enable global communication but collapse into opaque feeds, e.g., Twitter's algorithmic curation [Gillespie, 2018].
- **Chokepoint capitalism**: Delivers efficiency but concentrates value, e.g., Amazon's marketplace dominance [Giblin and Doctorow, 2022].

Each begins as negentropic, reducing uncertainty, but ends as constraint, suppressing contradiction [Schumpeter, 1942]. This cycle explains why early computing debates persist: the question of machine agency is less about intelligence than infrastructural capture.

6 RSVP and Semantic Infrastructures

The RSVP framework [Flyxion, 2025] models semantic systems as fields:

- **Scalar density (Φ)**: Semantic coherence, e.g., shared norms.
- **Vector flow ($\vec{v}$)**: Information transport, e.g., conversational cues.
- **Entropy ($\mathcal{S}$)**: Contradictions driving generativity, e.g., debates.

Platforms expel $\mathcal{S}$ as noise, compressing Φ into metrics and bottling $\vec{v}$ in feeds. RSVP proposes semantic infrastructures that metabolize $\mathcal{S}$ via:

- **Recursive accountability**: Judgments carry audit trails, e.g., transparent moderation logs.
- **Ephemeralization**: Authority decays, requiring revalidation, e.g., time-limited bans.
- **Semantic watermarking**: Metadata tracks transformations, e.g., provenance in generative outputs.
- **Entropy-aware merging**: Contradictions are composed, not collapsed, e.g., preserving divergent narratives.

Formally, meaning is a presheaf $\mathcal{F} : X^{\mathrm{op}} \to \mathrm{Set}$, with global sections via homotopy colimits:

$$\mathcal{F}(U) \simeq \mathrm{hocolim} \left(\prod_i \mathcal{F}(U_i) \rightrightarrows \prod_{i<j} \mathcal{F}(U_{ij}) \underset{\to}{\to} \prod_{i<j<k} \mathcal{F}(U_{ijk}) \cdots \right).$$

Contradictions persist as cohomology classes, fueling generativity [Lurie, 2009].

7 Semantic Infrastructure Beyond Chokepoints

Semantic infrastructures aim for a fourth stage, metabolizing capture. Gossip could preserve conflicting narratives via appeal mechanisms; religion could decay dogmatic authority; platforms could embed transparent moderation; generative systems could mandate interoperability [Doctorow, 2023].

For example, a decentralized social network could use blockchain-based audit trails to make bans reversible, preserving $\mathcal{S}$. In AI, open-weight models like LLaMA [Touvron et al., 2023] contrast with closed APIs, enabling distributed experimentation. Categorically, semantic infrastructures use homotopy colimits to preserve obstructions, ensuring Φ remains dense, $\vec{v}$ distributed, and $\mathcal{S}$ metabolized, unlike chokepoints' rigid gluing.

8 Conversations and Artworks as Context-Trained Bots

Every conversation or artwork is a bot trained on its context. A conversation is a functor $\mathcal{F} : \mathcal{C}_{\text{conv}} \to \mathcal{M}$, mapping dialogue corpora to generative models, with utterances as samples. An artwork is an endomorphism $a : \mathcal{M} \to \mathcal{M}$, recombining a model's weights. For example, Shakespeare's plays remix Elizabethan tropes, while a tweet threads prior posts [Shakespeare, 1623].

Chokepoint infrastructures suppress obstructions, producing rigid outputs (e.g., Netflix's formulaic recommendations). Semantic infrastructures preserve them, enabling generative depth. Formally, contradictions are non-trivial cohomology classes in $\mathcal{F}$'s Čech complex, ensuring conversations and artworks remain dynamic [Lurie, 2009].

9 Generative Cinema as a Case Study

Generative cinema illustrates this contrast. A system optimizing:

$$E = w_c \cdot \text{continuity} + w_f \cdot \text{framing error} + w_m \cdot \text{motion jerk} - w_r \cdot \text{relevance gain}$$

can recombine tropes (e.g., noir, comedy) via trajectory optimization [**?**]. In semantic infrastructures, contradictions (e.g., montage vs. continuity) fuel creativity; in chokepoints, they collapse into market-tested templates. Shakespeare's variant quartos preserve ambiguity [Shakespeare, 1623], while Netflix's algorithms reduce films to engagement metrics, echoing platform enclosures.

10 Conclusion: Keeping the Plenum Open

The question—can machines think, judge, or profit?—persists from 1950s textbooks to 2025 platforms. What has changed is dependence: from rare machines to total infrastructures. Gossip, religion, platforms, and chokepoint capitalism each stabilize meaning but harden into constraints. RSVP offers a design grammar to break this cycle, metabolizing $\mathcal{S}$ to keep Φ and $\vec{v}$ open. Without such redesigns, every technological wave repeats capture. With them, we can build systems that preserve meaning's generative depth.

Keywords: semantic infrastructures, gossip, religion, platforms, chokepoint capitalism, containerization, generative systems, entropy, RSVP

A Mathematical Formalism

A.1 Categories of Context and Generation

Let $\mathcal{C}$ denote the category of contexts:

- Objects: corpora $\mathcal{U}$ (dialogue histories, artistic traditions, datasets).
- Morphisms $f : \mathcal{U} \to \mathcal{V}$: inclusions or transformations (e.g., genre shifts).

Let $\mathcal{M}$ denote the category of generative models:

- Objects: models trained on corpora.
- Morphisms: fine-tunings or transfer functors.

A conversation is a functor $\mathcal{F} : \mathcal{C}_{\text{conv}} \to \mathcal{M}_{\text{utterances}}$, with utterances as samples from $\mathcal{F}(\mathcal{U})$. An artwork is an endomorphism $a : \mathcal{M} \to \mathcal{M}$, reconfiguring model weights. An oeuvre is a subcategory $\mathcal{O} \subseteq \mathcal{M}$ closed under such endomorphisms.

A.2 Sheaf-Theoretic Encoding

Let (X, τ) be a site of contexts. A presheaf $\mathcal{F} : X^{\text{op}} \to \text{Set}$ assigns generative acts to each open set $\mathcal{U}$. Stages:

- **Gossip**: Presheaf with non-unique gluing (contradictory overlaps).
- **Religion**: Sheafification enforces unique extensions (dogma).
- **Platforms**: Algorithmic sheaves hide provenance (e.g., recommendation engines).
- **Semantic infrastructure**: Derived stacks with homotopy colimits, preserving obstructions as cohomology classes.

Global sections are:

$$\mathcal{F}(U) \simeq \text{hocolim} \left(\prod_i \mathcal{F}(U_i) \rightrightarrows \prod_{i<j} \mathcal{F}(U_{ij}) \underset{\to}{\to} \prod_{i<j<k} \mathcal{F}(U_{ijk}) \cdots \right).$$

A.3 RSVP Field Mapping

Generative acts are fields:

- **Scalar density (Φ)**: Semantic weight, e.g., norm density.
- **Vector flow ($\vec{v}$)**: Transport of tropes, e.g., conversational flows.
- **Entropy ($\mathcal{S}$)**: Contradictions, measured as cohomology classes.

Semantic infrastructures preserve $\mathcal{S}$; chokepoints expel it ($\mathcal{S} \to 0$).

A.4 Theorem and Corollary

Theorem. Every conversation and artwork is a functorial generative model trained on its context.
Proof Sketch. Construct $\mathcal{C}$ and $\mathcal{M}$. Conversations are functors $\mathcal{F} : \mathcal{C} \to \mathcal{M}$, artworks are endomorphisms in $\mathcal{M}$. Generativity follows functoriality. □

Corollary. Suppressing obstructions degenerates conversations/artworks into chokepoint bots.
Justification. Rigid sheaves erase cohomology, compressing Φ, bottling $\vec{v}$, expelling $\mathcal{S}$.

A.5 Energy Functional for Generative Cinema

For a trope-selected shot with camera trajectory $\mathbf{p}(t)$ and look-at $\mathbf{l}(t)$, the cost functional is:

$$\text{E}[\mathbf{p}, \mathbf{l}] = w_c C(\mathbf{p}, \mathbf{l}) + w_f F(\mathbf{p}, \mathbf{l}) + w_m M(\mathbf{p}) - w_r R(\mathbf{p}, \mathbf{l}),$$

where C is continuity cost, F is framing error, M is motion jerk, and R is trope relevance. Minimizing E yields cinematic coherence.

A.6 General Constraint Cycle

Infrastructures are functors $G : \mathcal{C} \to \mathcal{M}$. Dynamics depend on:

- **Metabolizing**: $H^*(F)$ preserved.
- **Chokepoint**: $H^*(F) \to 0$.

B Notation

- Φ: Scalar density (semantic load).
- $\vec{v}$: Vector flow (reference transport).
- $\mathcal{S}$: Entropy (contradictions).
- $\mathcal{C}$: Contexts.
- $\mathcal{M}$: Generative models.
- $\mathcal{F}$: Conversation functor.
- $a : \mathcal{M} \to \mathcal{M}$: Artwork endomorphism.
- hocolim: Homotopy colimit.
- $H^*(F)$: Obstruction cohomology.
- $\mathbf{p}(t), \mathbf{l}(t)$: Camera functions.
- $\mathrm{E}[\mathbf{p}, \mathbf{l}]$: Cinema energy functional.

C Example: From Gossip to Derived Sheaves

For a site (X, τ), a presheaf $\mathcal{F} : X^{\mathrm{op}} \to \mathrm{Set}$ assigns claims to contexts U.
Gossip: $\mathcal{F}(U)$ is narratives; overlaps U_{ij} disagree up to $\sim$.
Religion: Sheafification forces agreement, losing ambiguity.
Platforms: Algorithmic sheaves select one section, hiding provenance.
Semantic Infrastructure: Derived stacks with:

$$\mathcal{F}(U) \simeq \mathrm{hocolim} \left(\prod_i \mathcal{F}(U_i) \rightrightarrows \prod_{i<j} \mathcal{F}(U_{ij}) \underset{\to}{\to} \prod_{i<j<k} \mathcal{F}(U_{ijk}) \cdots \right).$$

Obstructions in $H^k(\check{C}(\{U_i\}, \pi_* \mathcal{F}))$ are appeal handles.

D Generative Cinema: Shakespeare vs. Netflix

A generative movie bot uses:

$$A_k(t) = \alpha U(t) + \beta C_k(t) + \gamma \sum_s w_{s,t} A_{k-1}(s) - \delta R(t) - \eta I_k(t).$$

Shakespeare: Preserves contradictions (variant quartos) for reinterpretation [Shakespeare, 1623].
Netflix: Collapses tropes to metrics, expelling $\mathcal{S}$.

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