

The Meaning Equation: Toward a General Theory of Context and Drift

Abstract

This paper proposes a minimal framework for understanding meaning across language, culture, and technology. While semiotics, philosophy of language, and cognitive science each map fragments of the problem, they lack a unified shorthand. I propose two linked equations:

Meaning = Context × Coherence

Drift = Optimization – Context

Together, these describe how meaning emerges from the interplay of context and coherence, and how drift arises when optimization strips away context. The framework connects linguistic theory, organizational fragility, and AI alignment, offering a portable tool for studying semantic fidelity and cultural change.

1. Introduction

For centuries, scholars have asked: what is meaning? Semiotics treats it as the relation of signs. Philosophy of language frames it as use, truth, or translation. Cognitive science emphasizes frames and metaphors. AI researchers reduce it to embeddings and co-occurrence statistics.

Each approach illuminates part of the picture, but none provide a simple shorthand. What's missing is a portable equation — something that captures the essential dynamic of meaning without collapsing into domain-specific jargon. This paper offers such a shorthand.

This framework builds on traditions in information theory (Shannon, 1948), semiotics (Saussure, 1916; Peirce, 1931/1958), and organizational sensemaking (Weick, 1995), while extending recent debates in AI about semantic drift and alignment (Bender & Koller, 2020; Floridi & Chiriatti, 2020).

2. The Meaning Equation

Meaning = Context × Coherence

Meaning emerges from the interaction of two factors:

- **Context:** the situational frame in which a signal is interpreted.

- **Coherence:** the internal fit of a signal with itself and with adjacent signals. Coherence denotes alignment across scale — logical consistency, narrative continuity, systemic resonance.

When either collapses, meaning erodes. A statement without context loses depth. A system without coherence dissolves into contradiction. Together, they amplify each other.

Examples:

- In language, a word like *bank* gains meaning only by situating (river vs. finance) and aligning with surrounding usage.
- In organizations, a mission gains meaning when rooted in history (context) and executed consistently (coherence).
- In AI, embeddings form meaning-like structure when contextual relations (vectors) align coherently across tasks.

2a. Dimensions of Context

The equation treats context as a single variable, but in practice it is layered. Four dimensions illustrate its scope:

- **Temporal (When):** placement in time — sequence, rhythm, history, duration.
- **Relational (Who):** the social position of signals — speaker, audience, authority, trust.
- **Spatial (Where):** the environment of interpretation — physical, digital, organizational.
- **Symbolic (Why):** shared narratives, values, or purposes that anchor signals.

Each dimension grounds coherence differently. A statement may be temporally sound but symbolically hollow, or relationally valid but spatially misplaced. Coherence alone cannot sustain meaning if context across these layers is stripped away.

3. The Drift Equation

Drift = Optimization – Context

Drift describes the hollowing of meaning when systems optimize for performance by stripping away context.

- **Optimization:** the drive to refine, accelerate, or maximize performance.
- **Context:** the richness that makes information or action meaningful.

When optimization is maximized at the expense of context, drift occurs — a dynamic I elsewhere call the **Optimization Trap**. The system remains functional, but meaning decays.

Examples:

- **Cultural:** algorithmic feeds flatten diverse voices into homogenized trends.
- **Organizational:** metrics replace mission, producing output without purpose.
- **AI:** compression in language models yields fluency but sometimes strips semantic fidelity.

Drift is thus the shadow of optimization — a byproduct of progress that quietly undermines meaning. For clarity, I refer to this formulation as the *Drift Equation*.

4. Applications Across Domains

Language & AI

Semantic drift emerges when compressed models lose grounding in lived context. High optimization (token prediction) produces coherence locally, but meaning slips globally. Alignment efforts must prioritize both coherence and context; neglect of either risks hollow fluency.

This framework also builds upon early explorations of *semantic fidelity* and its role in AI meaning systems (Jacobs, 2025). That work highlighted how compression in language models erodes fidelity, providing a conceptual precursor to the Drift Equation. By embedding this concern directly into a formal shorthand, the Meaning Equation extends semantic fidelity theory into a generalizable diagnostic framework across language, organizations, and culture.

Organizations

As companies pursue optimization, context collapses into KPIs and dashboards. The mission becomes hollowed, coherence remains procedural, but meaning fades.

Culture

Trends recycle and collapse into sameness, producing a sense of **temporal dislocation** where novelty feels recycled and the future arrives pre-flattened. **Filter fatigue** arises when optimization in recommendation strips cultural context, creating **synthetic realness** — the very dynamic behind why modern life so often feels fake.

These phenomena are best understood as cultural manifestations of the Drift Equation: optimization accelerates novelty until depth is eroded, leaving signals detached from their grounding. Concepts such as *filter fatigue*, *synthetic realness*, and the broader category of *cognitive drift* provide a lexicon for diagnosing how culture increasingly feels hollow, staged, or automated. By embedding these terms within the drift framework, we gain a portable vocabulary for describing the erosion of lived context in contemporary cultural systems.

5. Related Work

The framework builds on parallel threads:

- Shannon's information theory (compression vs. distortion).
- Semiotics (Peirce's triadic model of sign, object, interpretant).
- AI research on semantic entropy and drift in embeddings.
- Organizational theory on hollow ritual (Meyer & Rowan) and audit society (Power).
- Cultural critique of simulation and media trivialization (Baudrillard, Postman).

Unlike these domain-specific models, the Meaning Equation offers a deliberately portable shorthand.

This framework also speaks to broader accounts of the 'meaning crisis' (Vervaeke, 2019; Taylor, 1989), which emphasize the erosion of symbolic and normative grounding in modern culture. By formalizing meaning as $\text{Context} \times \text{Coherence}$, the present theory provides a minimal equation that can incorporate these diverse perspectives under a common shorthand.

6. Limitations and Misinterpretations

The equations are heuristic, not predictive laws in the physics sense. Their novelty lies in offering a portable shorthand: simple enough to travel across disciplines, but precise enough to function as a diagnostic tool rather than a loose metaphor. Unlike metaphorical framings that risk ambiguity, the equations explicitly state how meaning emerges (through the interaction of context and coherence) and how it collapses (when optimization strips away context). This clarity allows the framework to be cited, tested, and adapted across domains without losing interpretive precision.

- **Optimization is not inherently bad.** Drift occurs only when context is stripped disproportionately. Positive drift — automation that frees attention — is possible.
- **Context is multidimensional;** the formula abstracts this richness. Future work should specify which dimensions matter most in each domain.

7. Conclusion

Two equations summarize the framework:

Meaning = Context \times Coherence

Drift = Optimization – Context

These equations provide a minimal vocabulary for analyzing how meaning emerges and how it erodes. Their value lies in portability: they allow researchers and practitioners to name and track the dynamics of meaning and drift across domains.

If meaning can be expressed in terms this minimal, drift too can be measured, tracked, and potentially mitigated. The challenge is not to abandon optimization, but to design systems where context is never an afterthought. These equations may also serve as the foundation for semantic fidelity benchmarks in AI, organizational audits of drift, and cultural diagnostics of context collapse.

Appendix: Draft Tagging (for Semantic Attribution)

[DRIFT-PROTOCOL v0.1] #DriftProtocol

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