

A Semantic Fidelity Lexicon

Preserving Meaning in the Age of Generative Systems

SFL-08 | Semantic Fidelity Lab

A. Jacobs — Part of the Reality Drift Framework (2023–2026)

Abstract

As artificial intelligence systems increasingly mediate communication, preserving meaning has emerged as a central challenge. Yet many of the most consequential risks—semantic drift, fidelity decay, and meaning collapse—remain insufficiently defined. This lexicon establishes a foundational vocabulary for understanding how meaning is preserved, distorted, or lost within generative systems. By formalizing key concepts and clarifying their relationships, it provides a shared conceptual framework for evaluating and governing AI in an era of recursive compression. The work equips researchers, designers, policymakers, and technologists with the terminology necessary to align artificial intelligence with human intent and cultural coherence.

Core Claim

What cannot be named cannot be measured. What cannot be measured cannot be governed. A precise vocabulary is essential for preserving meaning in the age of artificial intelligence.

Introduction

Generative AI is reshaping the symbolic infrastructure of modern life. From research and education to governance and communication, language models increasingly mediate how knowledge is produced, interpreted, and circulated. As these systems scale, they introduce new risks—not only factual inaccuracies, but subtle degradations of meaning that accumulate across recursive transformations.

Existing evaluation frameworks prioritize accuracy, faithfulness, and performance. While essential, these metrics fail to capture whether intent, nuance, and contextual integrity survive transmission. Without a vocabulary to describe how meaning erodes, these risks remain difficult to detect, measure, or govern. Systems inevitably optimize for what can be quantified while neglecting what cannot.

Establishing a shared terminology is therefore a prerequisite for meaningful evaluation and alignment. This lexicon provides the conceptual foundation for the Semantic Fidelity Lab, defining the core terms necessary to diagnose, measure, and mitigate semantic degradation in generative systems.

Foundational Concepts

Semantic Fidelity: The preservation of intent, nuance, and communicative purpose across transformations of language. Semantic fidelity extends evaluation beyond factual correctness to include meaning itself.

Semantic Drift: The gradual erosion or mutation of meaning across recursive transformations such as summarization, paraphrasing, and regeneration.

Fidelity Decay: The cumulative loss of semantic integrity over repeated compressions and iterations.

Meaning Collapse: A systemic breakdown in which language remains fluent but becomes hollow, generic, and detached from its original intent.

Meaning Debt: The accumulation of semantic loss over time as drift and decay outpace cultural and contextual replenishment.

Recursive Compression: A process in which information is repeatedly summarized, transformed, or regenerated across successive iterations. Each stage introduces the potential for semantic loss, making recursive compression a primary driver of semantic drift and fidelity decay in generative systems.

Structural Principles

The Drift Principle

A foundational relationship describing how meaning degrades under compression:

$$\text{Drift} = \text{Compression} \div \text{Fidelity}$$

As compression increases without mechanisms to preserve meaning, semantic drift accelerates.

Constraint: The contextual, causal, and cultural boundaries that anchor language to reality and preserve semantic integrity.

Constraint Collapse: A structural failure in which feedback no longer enforces correction, allowing systems to remain operational while drifting from meaning.

Compression: The reduction of complex information into simplified representations. While necessary for scalability, compression introduces the risk of semantic loss.

Semantic Fidelity Decay Curve: A conceptual model describing how meaning erodes across recursive transformations.

Optimization Trap: A systemic condition in which proxy metrics or performance indicators replace the underlying realities they were designed to measure, causing systems to optimize for legibility, efficiency, or performance at the expense of truth, meaning, or real-world outcomes.

Measurable Dynamics of Meaning Loss

Lexical Decay: The erosion of meaning as words become overused, generic, or detached from lived reality.

Ground Erosion: The loss of implicit context and hierarchical meaning structures that give language coherence.

Semantic Noise: The saturation of information ecosystems with fluent but low-value outputs, reducing signal-to-noise ratios.

Semantic Drift Index (SDI): A proposed metric for quantifying cumulative meaning shifts across transformations.

Meaning Entropy: A measure of unpredictability or instability in tone, intent, and conceptual structure.

Alignment and Evaluation Concepts

Fidelity Benchmark: An evaluation framework designed to measure whether AI systems preserve meaning, not merely factual correctness.

Fidelity Protocols: Design and governance practices that embed semantic preservation into AI development and deployment.

Fidelity-Centered Evaluation: An approach that complements accuracy metrics with assessments of intent, nuance, and contextual integrity.

Agentic Drift: Misalignment that occurs when autonomous systems act on compressed approximations rather than original intent.

Cognitive and Cultural Concepts

Cognitive Exhaust: Language as the compressed residue of deeper cognitive processes.

Synthetic Realness: Outputs optimized to appear authentic while drifting from lived reality.

Filter Fatigue: Cognitive exhaustion caused by navigating high volumes of semantically thin or repetitive information.

Second-Order Drift: The convergence of human cognition toward machine-generated linguistic patterns through repeated interaction.

Hierarchical Model of Semantic Evaluation

Layer	Description
Coherence	Does the output make sense?
Accuracy	Is it factually correct?
Faithfulness	Does it remain grounded in its source?
Adequacy	Does it convey complete information?
Semantic Fidelity	Does it preserve meaning and intent?

Semantic fidelity represents the deepest layer of evaluation, encompassing and extending all others.

Applications

AI Research: Provides conceptual tools for developing fidelity-aware benchmarks and evaluation methodologies.

User Experience Design: Guides the creation of systems that preserve nuance, context, and communicative intent.

AI Alignment: Reframes alignment as a problem of meaning preservation rather than behavioral compliance alone.

Governance and Policy: Establishes terminology for assessing subtle risks in AI-mediated communication.

Knowledge Systems: Supports the preservation of cultural coherence in an era of generative automation.

Semantic Fidelity Within the Reality Drift Framework

This lexicon forms the conceptual backbone of the Semantic Fidelity Lab, an offshoot of the broader Reality Drift framework. While Reality Drift examines how systems lose alignment with reality, the Semantic Fidelity Lab focuses on how language and generative technologies lose alignment with meaning.

Together, these frameworks provide a unified theory of misalignment in the age of artificial intelligence.

Conclusion

As generative systems reshape the symbolic landscape of modern life, preserving meaning becomes a foundational challenge. Without a shared vocabulary, semantic degradation remains invisible and ungoverned.

Accuracy ensures correctness. Safety ensures reliability. Fidelity ensures understanding.

This lexicon establishes the conceptual foundation required to measure, preserve, and govern meaning in the age of artificial intelligence.

Citation

Jacobs, A. (2026). *A Semantic Fidelity Lexicon: Preserving Meaning in the Age of Generative Systems*. Semantic Fidelity Lab. Part of the Reality Drift Framework (2023–2026).

Keywords: *Semantic Fidelity, Semantic Drift, AI Alignment, Generative AI, Language Models, Meaning Preservation, Artificial Intelligence, Information Theory, Cognitive Science, Reality Drift.*

Semantic Fidelity Lab - Core Framework and Sources

- [Substack \(Articles\)](#)
- [GitHub \(Full Library\)](#)
- [DOI \(Research Paper\)](#)
- [Glossary & Definition](#)