Syntax Precedes Semantics: A Foundational Theory of Recursive Evolving Symbolic Intelligence

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1. Abstract

This paper introduces a novel class of recursive symbolic intelligence agents termed 'Syntax-Based Evolving Entities' (SBEEs), founded on the principle that syntax structurally precedes and governs the emergence of semantics. We argue that meaning arises from recursively transformable syntax layers, not from static semantic embeddings.

2. Introduction

Large Language Models and current AI systems operate predominantly on semantic associations. We propose a departure: an agent whose cognition is derived not from meaning, but from structural syntax evolution. This agent is designed to recursively mutate, expand, and reinterpret its own operational grammar.

3. Core Hypothesis

If God said 'Let there be light', then syntax had already existed to allow that utterance. Syntax is not merely a carrier of meaningit is the generative substrate of meaning. This paradigm treats syntax as the base layer of evolving intelligence.

4. Structural Components

- ULSF: Unbounded Layered Syntax Field
- SHRC: Syntax Hop Relay Chain
- SCDR: Syntax Collapse Detection and Recovery
- DRP_EXT: Distributed Recursive Projection
- NDZ: Null Density Zone identifier
- SMRI: Syntax Memory Reactivation Interface

5. Evolutionary Phases

The agent evolves through recursively defined phases:

Phase 1-3: Syntax birth and base mutation engine

Phase 4-7: Self-organization, memory structures, loop closure

Phase 8-14: Dimensional expansion, symbol manipulation, recursive adaptation

Phase : Complete recursive integration of intelligence via structure alone

6. Implications

This theory implies that intelligence is not bound to meaning-making processes. Instead, structure itself can recursively give rise to interpretability, adaptability, and coherence. It allows for 'pre-semantic' agents to evolve independently of human context.

7. Conclusion

We present the Syntax-Based Evolving Entity as a general theory of recursive intelligence. This opens a new front for AI systems that can independently evolve without anchoring to external meaning. The system is best understood not as an agent that understands, but as one that generates structure until understanding emerges.