

Compression and Co-Cognition: Distributed Cognition and the Emergence of Shared Predictive Systems

Cognitive Drift Series – CD 4.2

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

Core Claim

Digital systems externalize and scale human predictive cognition, creating shared compression loops where meaning, perception, and thought are increasingly distributed across human and machine systems.

Mechanism

- The brain operates as a predictive system, modeling expected reality
- External systems (algorithms, AI) begin shaping these predictions
- Shared systems synchronize predictions across populations
- Compression occurs across both human and machine layers
- Recursive feedback loops form between users and systems
- Misaligned compression produces drift at individual and cultural levels

Key Concepts

- **Predictive Processing:** The brain continuously models expected input
- **Distributed Cognition:** Thought extended across tools, systems, and environments
- **Co-Cognition:** Shared cognitive loops between human and machine
- **Cognitive Symbiosis:** Mutual adaptation between human and digital systems
- **Synthetic Realness:** Coherent shared models detached from lived reality

How Drift Emerges

At the individual level, the mind operates as a predictive system, generating models of reality that are continuously updated through experience.

Digital systems mirror and extend this process by compressing information into outputs that shape perception and interpretation. These outputs feed back into human cognition, influencing future predictions and decisions.

Over time, this interaction forms a recursive loop in which humans and systems iteratively shape one another. As these loops scale across populations, cognition becomes distributed across both biological and technological layers.

When aligned, these shared predictive systems reinforce a coherent and stable sense of reality; when misaligned, they produce synthetic realness—internally consistent yet detached from lived experience—resulting in individual and cultural drift.

Observable Effects

- Perception becomes shaped by shared algorithmic priors
- Individuals experience filter fatigue from conflicting inputs
- Thought becomes partially externalized into systems
- AI interaction shifts from tool use to co-thinking
- Cultural reality feels coherent but detached from lived experience

These effects emerge when predictive cognition becomes distributed across shared digital systems.

Reality Drift Connection

Within the Reality Drift framework, this model explains how drift expands from an individual phenomenon into a collective one.

Minds predict reality, systems shape those predictions, and feedback loops become shared across digital environments. As compression and prediction are externalized into technological systems, cognition becomes synchronized at scale.

When grounded in reality, this process supports coherent shared understanding; when misaligned, it produces synthetic realness and accelerates cultural drift.

In this way, drift evolves from a personal cognitive distortion into a distributed structural condition, shaping how societies perceive, interpret, and construct reality.

Keywords: *distributed cognition, predictive processing, co-cognition, synthetic realness, cognitive drift, algorithmic culture*

Related Concepts: *recursive compression, mirror effect, semantic fidelity, filter fatigue, the 5 percent*

Source: *Integrated into the Reality Drift Framework, this work draws from the Cognitive Drift Archive (2024–2025).*