Porousness and Co-Cognition: Boundary Permeability in Human–AI Interaction

Cognitive Drift Series – CD 3.1

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

Core Claim

Cognitive Porousness determines how external systems integrate into active thought, enabling co-cognition when boundaries are permeable but stable, and producing drift when integration exceeds constraint.

Mechanism

- Minds differ in how strongly they separate internal and external representations
- Low porousness maintains strict boundaries between self and system
- High porousness allows external inputs to participate in cognition
- AI introduces high-bandwidth external representations
- Recursive loops form when external systems are integrated into thought
- Stability depends on maintaining boundaries within these loops

Key Concepts

- **Cognitive Porousness:** The degree of permeability between internal cognition and external systems, determining how information and representations integrate into active thought.
- **Boundary Structure:** The regulatory mechanisms that govern separation or integration between internal and external representations.
- **Co-Cognition:** Shared cognitive processing that emerges through recursive interaction between a human and an external system such as AI.
- **Recursive Compression:** The iterative refinement of meaning through feedback loops between internal cognition and external representations.
- **Synthetic Flow:** A state of sustained, high-fidelity co-cognition in which human and AI collaboratively generate insight through stabilized recursive interaction.

How Drift Emerges

Cognitive interaction with external systems unfolds along a continuum defined by boundary permeability. Internal thought engages the external world through a boundary that regulates the flow of information between mind and system.

When porousness is low, this boundary remains firm, preserving separation and enabling conventional tool use in which external systems support cognition without integrating into it. At

moderate levels of porousness, the boundary becomes selectively permeable, allowing external representations to participate in active reasoning.

This integration forms recursive feedback loops that give rise to co-cognition, where meaning emerges through shared processing between human and system.

However, when porousness becomes unbounded, boundaries weaken or collapse, leading to over-integration. In this state, distinctions between internal and external sources blur, destabilizing attribution and coherence, and ultimately resulting in cognitive drift.

Interaction Modes

Bounded Mode

- External systems remain distinct
- Interaction is transactional
- Limited cognitive integration

Integrative Mode

- External systems participate in thought
- Feedback loops stabilize meaning
- Co-cognition emerges

Unbounded Mode

- Boundaries collapse
- Feedback loops amplify without correction
- Attribution and meaning destabilize

Observable Effects

- Some users experience AI as part of their thinking process
- Ideas develop through interaction rather than isolation
- Boundaries between "self" and "system" become flexible
- Over-integration leads to overload or distortion
- Stability depends on pacing, framing, and external grounding

These effects emerge from differences in boundary permeability under recursive interaction.

Reality Drift Connection

Porousness shapes how individuals experience Cognitive Drift by determining the degree to which external systems integrate into active cognition. As boundary permeability increases, minds become

more sensitive to drift while also gaining the capacity to stabilize meaning through co-cognitive loops with external tools such as AI.

When integration remains bounded, these recursive interactions enhance clarity, insight, and semantic fidelity. External systems function as stabilizing extensions of thought, reinforcing coherence through structured feedback.

However, when permeability exceeds constraint, over-integration destabilizes attribution, coherence, and meaning, leading to cognitive overload and distortion. In such conditions, the boundary between internal cognition and external systems becomes unstable.

Differences in boundary integrity therefore determine whether external systems act as stabilizing extensions of thought or as sources of drift. Stability depends not on isolation, but on well-defined and resilient cognitive boundaries.

Minds vary in their degree of permeability. External representations can integrate into cognition, enabling co-cognition; yet when integration exceeds constraint, drift emerges, making stability contingent upon balanced and bounded integration.

Keywords: *porous cognition, co-cognition, boundary permeability, human AI interaction, cognitive drift, distributed cognition*

Related Concepts: *the 5 percent, synthetic flow, mirror effect, semantic fidelity, cognitive architectures*

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