Reality Drift Operator Library

Core Transformations Across Representational Systems

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Format

Each operator is defined as:

- Name
- Type
- Input
- Transformation
- Output
- Failure Modes

Operator: Optimization

Type: System Transformation

Input: System with measurable proxy and underlying objective

Transformation: System behavior shifts toward improving the proxy due to feedback and incentives

Output: Divergence between proxy performance and underlying objective

Failure Modes:

- Proxy Dominance
- Metric Gaming
- Synthetic Realness Stabilization

Operator: Abstraction Layering

Type: Structural Transformation

Input: Direct interaction with underlying reality

Transformation: Reality is encoded into successive layers of representation

Output: Multi-layer representation stack with reduced direct grounding

Failure Modes:

- Feedback Attenuation
- Signal Delay
- Drift Accumulation

Operator: Semantic Compression

Type: Information Transformation

Input: High-fidelity meaning with context and constraint

Transformation: Information is reduced into a more efficient, lower-dimensional form

Output: Coherent but less constrained representation

Failure Modes:

- Semantic Entropy Increase
- Loss of Context
- Overgeneralization

Operator: Representation Substitution

Type: System Substitution

Input: Representation and underlying reality

Transformation: Representation becomes the primary object of interaction and optimization

Output: System operates on representation rather than reality

Failure Modes:

- Reality Detachment
- Proxy Lock-In
- Drift Stabilization

Operator: Feedback Weakening

Type: Control Degradation

Input: System with feedback loop connected to reality

Transformation: Feedback becomes indirect, delayed, or filtered through representations

Output: Reduced corrective signal strength

Failure Modes:

- Error Persistence
- Misalignment Growth
- Drift Acceleration

Operator: Coherence Stabilization

Type: Structural Reinforcement

Input: Partially misaligned system with internal representations

Transformation: System optimizes for internal consistency and fluency

Output: Stable, coherent representation independent of external accuracy

Failure Modes:

- Error Masking
- Synthetic Realness
- Reduced Detectability of Drift

Operator: Signal Filtering

Type: Cognitive Transformation

Input: High-volume, mixed-quality information environment

Transformation: Cognitive attention selectively filters and processes a subset of incoming signals

Output: Reduced, structured input stream

Failure Modes:

- Signal Loss
- Bias Amplification
- Reduced Sensitivity

Operator: Constraint Relaxation

Type: Structural Degradation

Input: System with defined constraints and boundaries

Transformation: Constraints are weakened or removed through scaling or optimization

Output: Expanded but less structured possibility space

Failure Modes:

- Overgeneralization
- Instability
- Drift Susceptibility

Operator: Reinforcement Looping

Type: Feedback Amplification

Input: System receiving feedback signals

Transformation: Repeated feedback strengthens certain patterns or representations

Output: Stabilized patterns within the system

Failure Modes:

- Echo Formation
- Local Optima Lock-In
- Representation Dominance

Operator: Synthetic Signal Injection

Type: Input Substitution

Input: System receiving direct signals from underlying reality

Transformation: Synthetic, aggregated, or model-generated signals replace or dominate direct real-world input, shifting the system's learning and decision-making toward representations of reality rather than reality itself

Output: System learns from representations of reality rather than direct signals from underlying conditions

Failure Modes:

- Grounding Loss
- Semantic Drift
- Model Collapse Risk

Operator: Temporal Compression

Type: Information Acceleration

Input: Events unfolding over time

Transformation: Events are compressed into rapid, consumable representations

Output: Shortened temporal context with reduced continuity

Failure Modes:

- Loss of Causality
- Shallow Understanding
- Narrative Distortion

Operator: Scaling Abstraction

Type: System Expansion

Input: Small-scale system with direct feedback

Transformation: System scales, increasing reliance on representations and abstractions

Output: Large-scale system with indirect feedback

Failure Modes:

- Feedback Delay
- Coordination Drift
- Increased Entropy

Operator: Proxy Substitution

Type: Measurement Transformation

Input: Complex, difficult-to-measure objective

Transformation: Proxy metric is introduced to approximate the objective

Output: Measurable indicator used for decision-making

Failure Modes:

- Optimization Trap

- Objective Drift
- Misaligned Incentives

Operator: Drift Amplification

Type: System Dynamics

Input: System with existing misalignment

Transformation: Feedback loops reinforce and expand misalignment

Output: Accelerated divergence from underlying reality

Failure Modes:

- Self-Reinforcing Error
- Systemic Misalignment
- Collapse of Correction

Operator: Grounding Reintroduction

Type: Corrective Transformation

Input: System operating on representations

Transformation: Direct interaction with underlying reality is reintroduced

Output: Increased semantic fidelity and alignment

Failure Modes:

- High Cost
- Resistance from Optimized Systems
- Partial Correction Only

End State

This operator library defines the core transformations within the Reality Drift framework.

It is intended to function as:

- a set of runnable mental models
- a diagnostic toolkit for system analysis
- a bridge between theory and application