

The Architecture of a Conspiracy

A neurobiological model of how false beliefs physically hijack the brain.



The Blind Spot in Conspiracy Research

Current Focus

Historians, psychologists, and sociologists study the who and the what:

- Personality traits
- Political environments
- The need for simple explanations



The **Missing Link**

The how. How does a brain physically encode, filter, and permanently distort incoming information?

The Proposition: Conspiracy theories are not just psychological quirks; they are structural, physical phenomena molded by neurodynamics.



Redefining the Cultural Meme

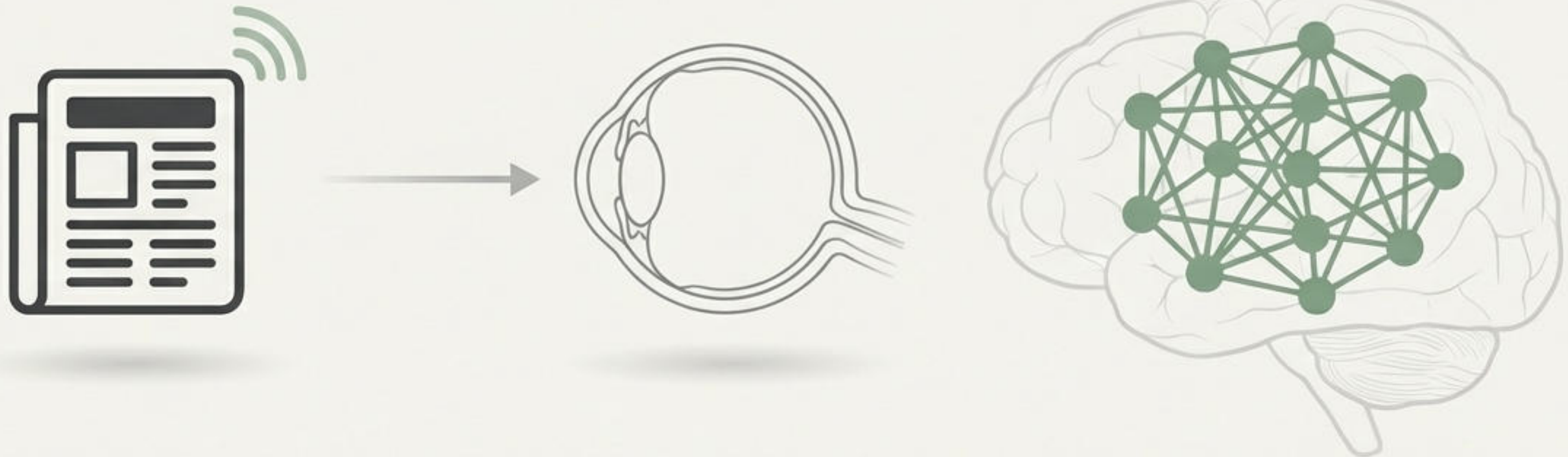
Dawkins introduced 'memes' in 1976 as units of cultural transmission. Neuroscience requires a physical definition:

e-memes (External)

Abstract information structures existing in the world (media, texts, videos).

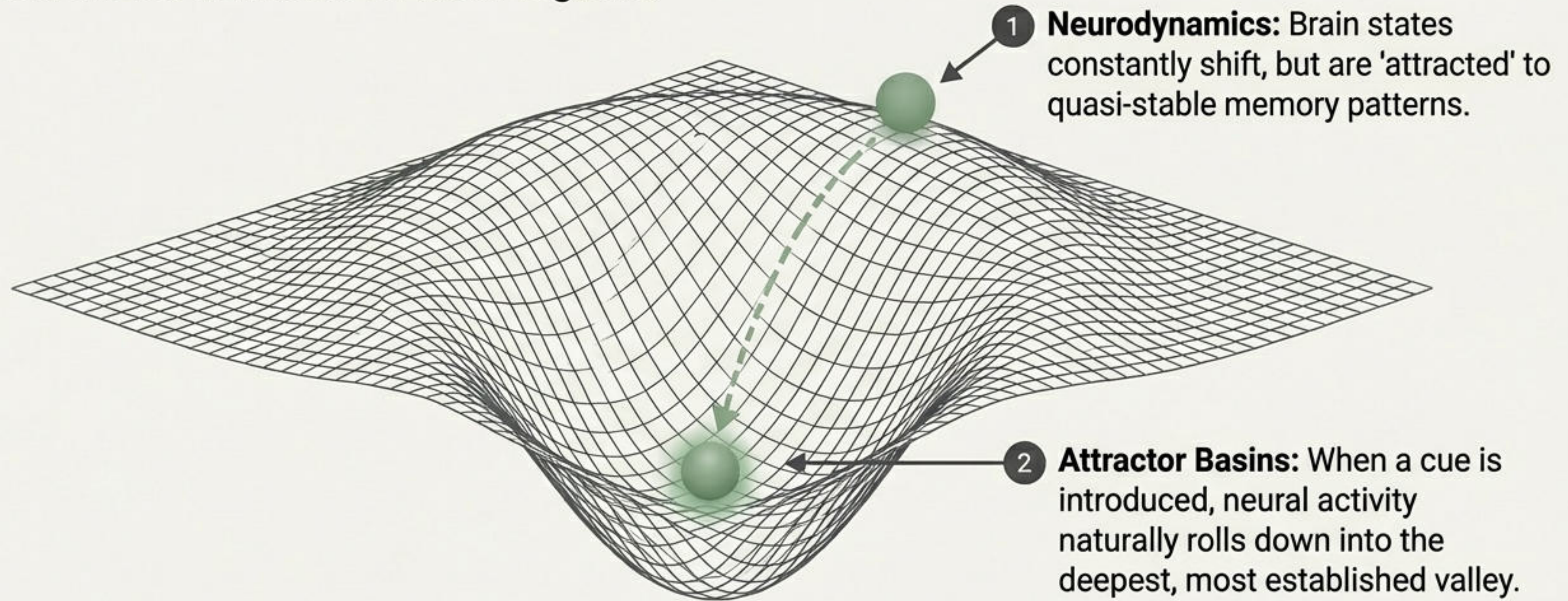
i-memes (Internal)

The physical representation of that information inside the central nervous system. A meme is a quasi-stable associative memory network attractor state.



The Brain as a Dynamical System

Memories and concepts are not stored like files in a folder; they are active, synchronized networks of brain regions.

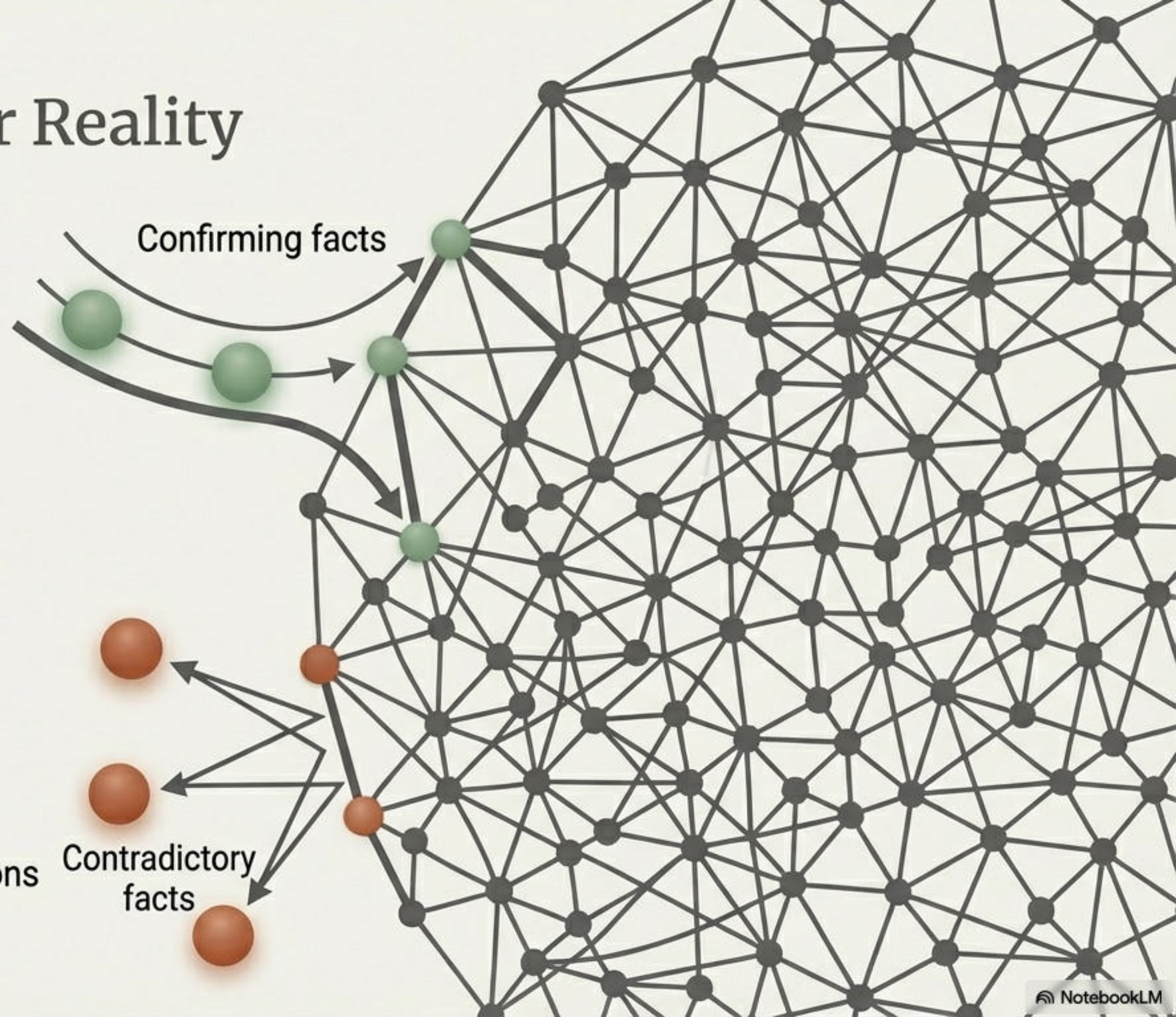


Memplexes Filter Reality

- Groups of interacting memes form a memplex.
- This memplex acts as a physical filter for all incoming reality.

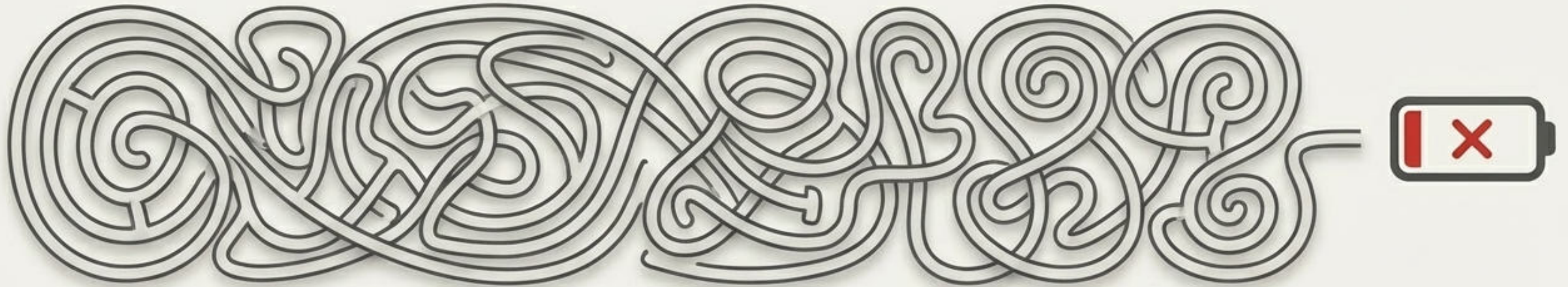
Confirmation: Observations matching the memplex trigger strong, reinforcing brain activations.

Rejection: Contradicting facts arouse only transient, weak activations and are actively directed away.



The Evolutionary Trap of the 'Simple Explanation'

Learning requires physical adaptation—changing functional connectivity and brain structure. This process burns massive amounts of energy. Evolution favors fast explanations to save energy and reduce uncertainty, even if false.



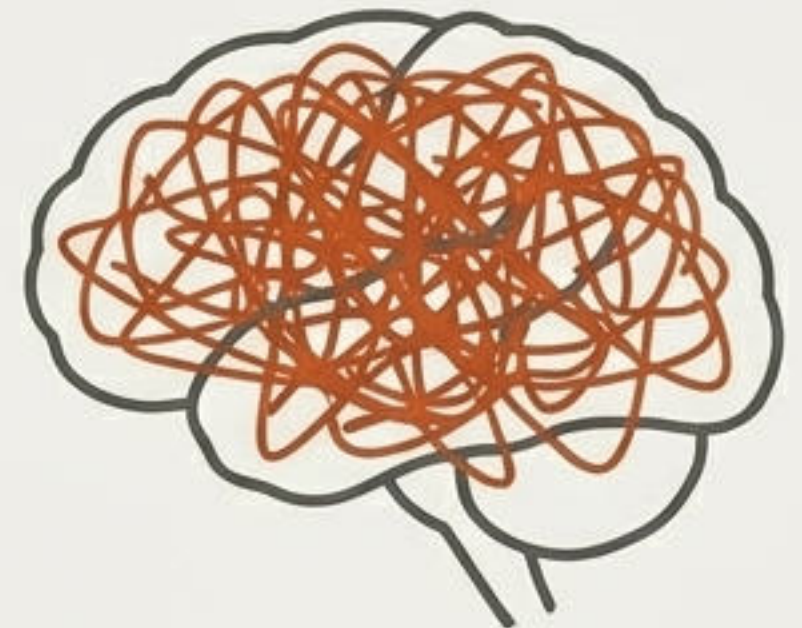
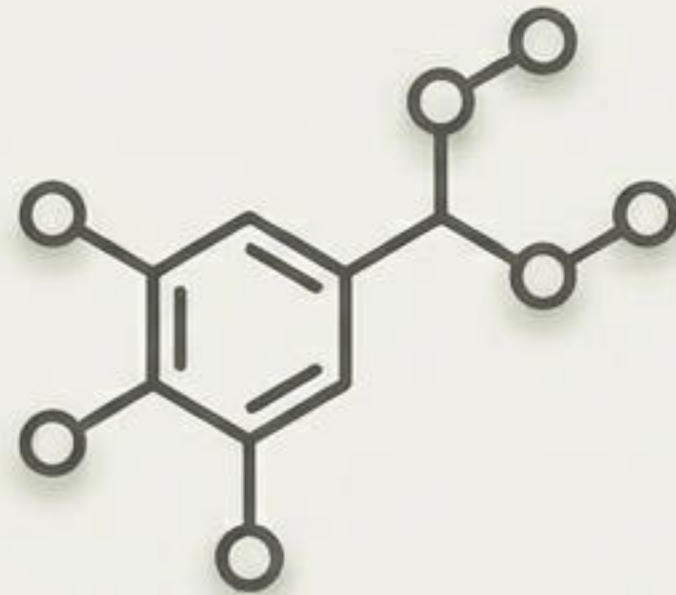
Complex Truth: High energy consumption, slow uncertainty reduction.

Simple Falsehood: Zero energy cost, rapid uncertainty reduction.



Phase 1: The Emotional Spike

The Rapid Freezing of High Neuroplasticity (RFHN) Model begins with an environmental trigger:



Uncertainty & Stress:

Rumors or life-threatening news cause acute confusion.

Chemical Flood:

The brain stem releases massive amounts of neurotransmitters.

Hyper-Plasticity: The brain wildly connects all potentially **relevant cues, sharing overlapping features**, regardless of accuracy.

Phase 2: The Rapid Freeze

Step 4:



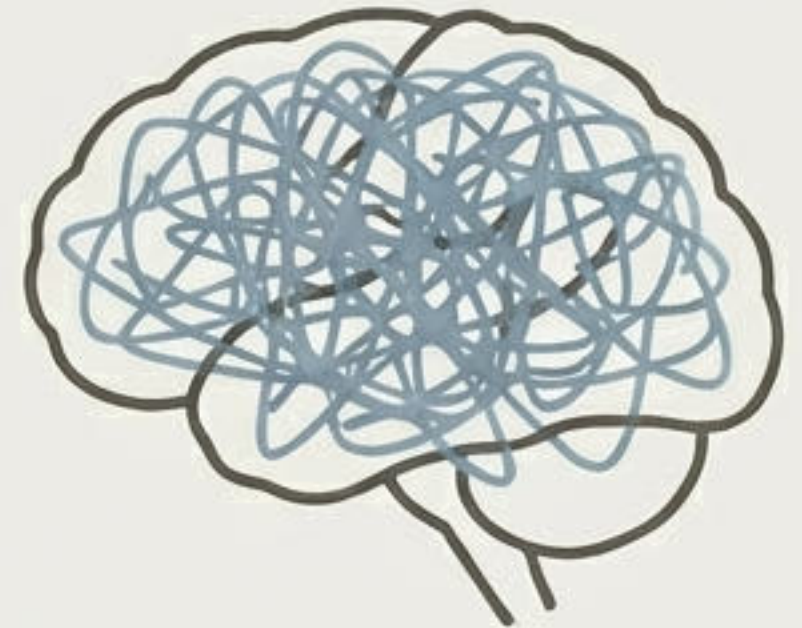
The Drop: Emotions subside. Neurotransmitter sources deplete.

Step 5:



Information Overload: The brain can no longer sustain the hyper-plastic state.

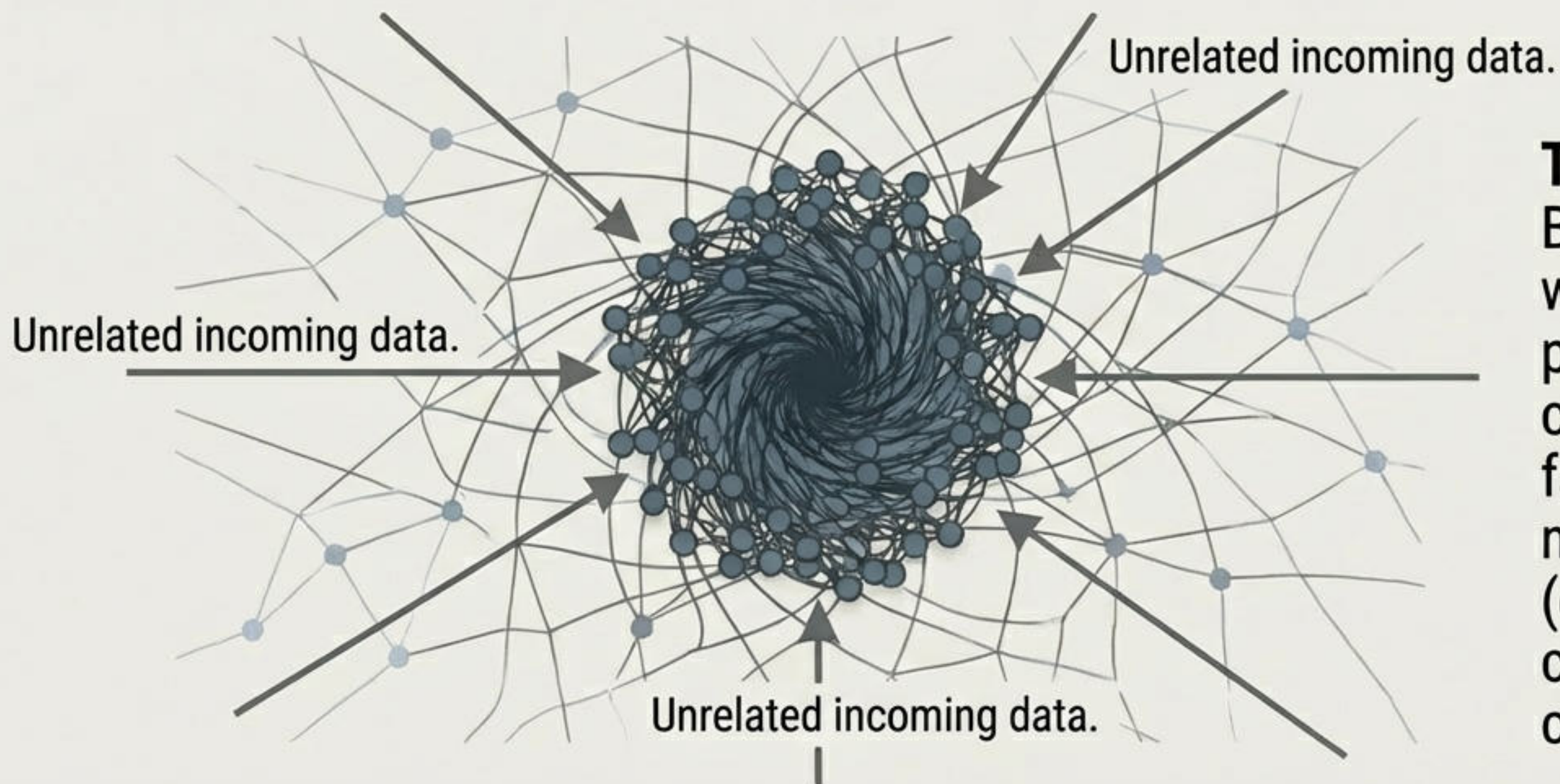
Step 6:



The Freeze: Neuroplasticity crashes abruptly. The brain is suddenly stuck with the chaotic, overlapping network of unverified cues.

The Anatomy of a False Belief

Slow Forgetting preserves only the most frequently accessed nodes, creating a massive attractor basin that swallows unrelated information.



The Trap:
Because this cluster was formed in a panic, it contains connections to facts that were never presented (confabulation). It creates a massive central sink.

Testing the Theory: Neural Network Models

To prove this neurobiological theory, we simulate the brain using unsupervised competitive learning models (Self-Organizing Maps and Neural Gas models).

These algorithms approximate neural cell assemblies adapting to incoming information.



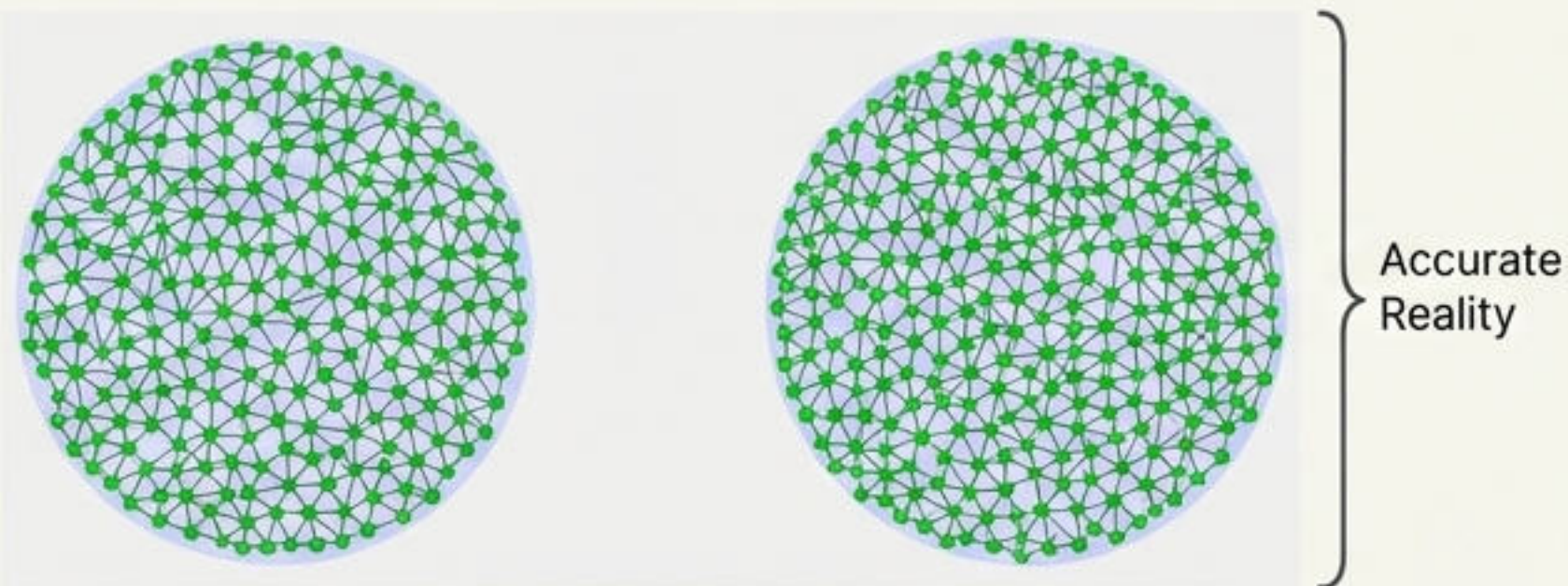
The Dots: Represent chunks of information or signals.



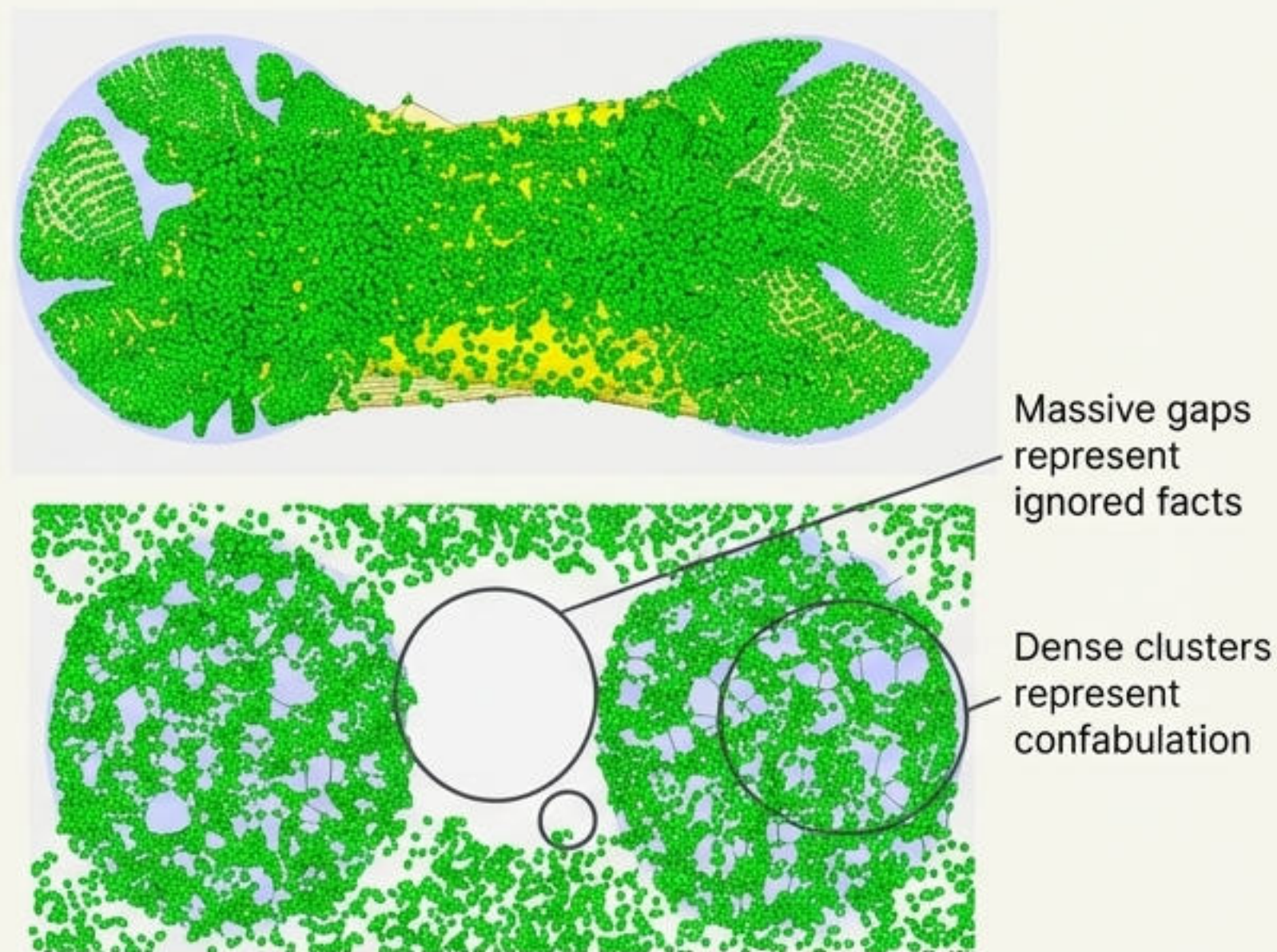
The Lines: Represent the learned associations between those facts.

Healthy Learning vs. Rapid Freezing

Healthy (Left): Slow, steady learning creates a perfectly uniform representation of reality.

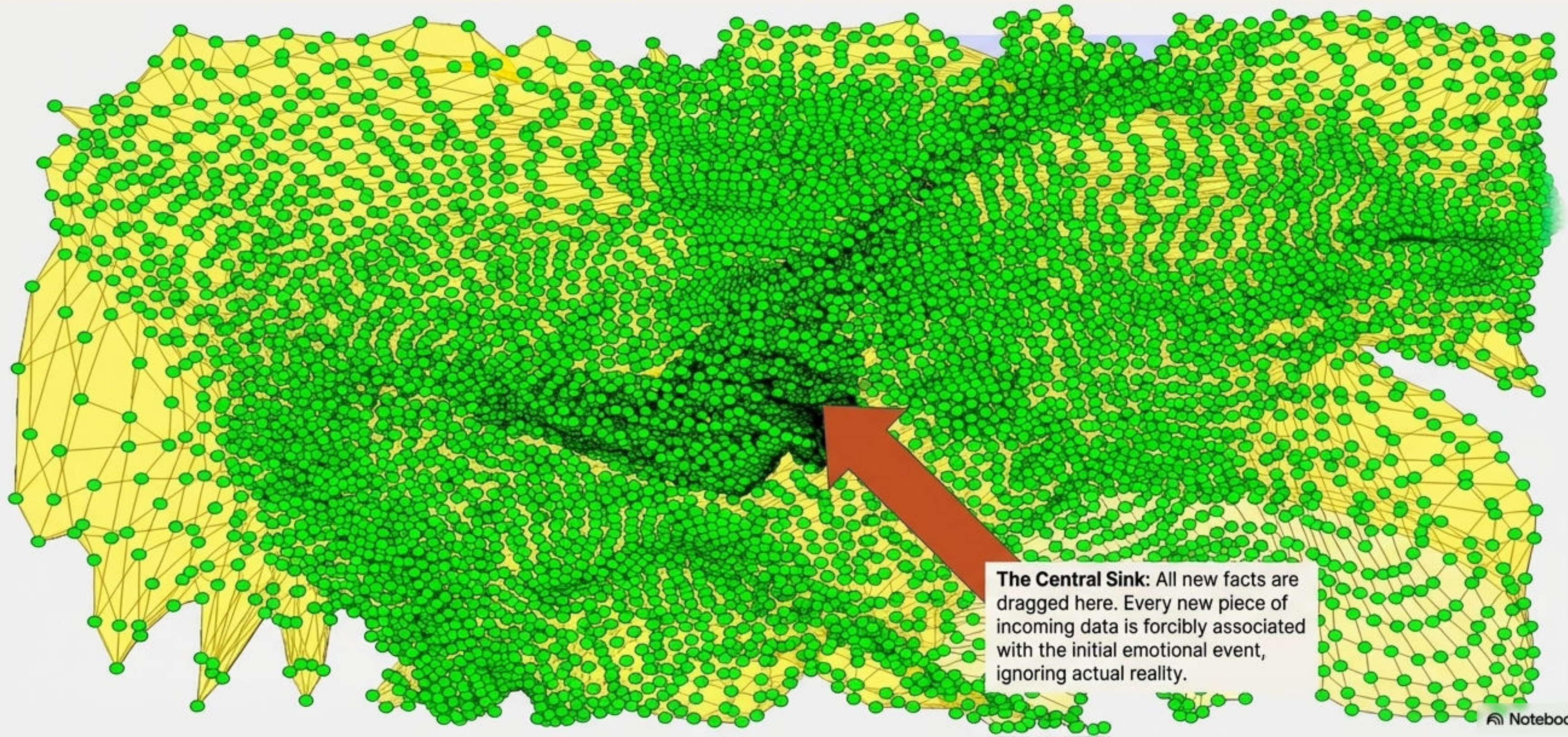


Distorted (Right): A rapid decrease in plasticity leaves massive gaps (ignored reality) and dense clusters (stereotypes).



The Danger of the Non-Stationary World

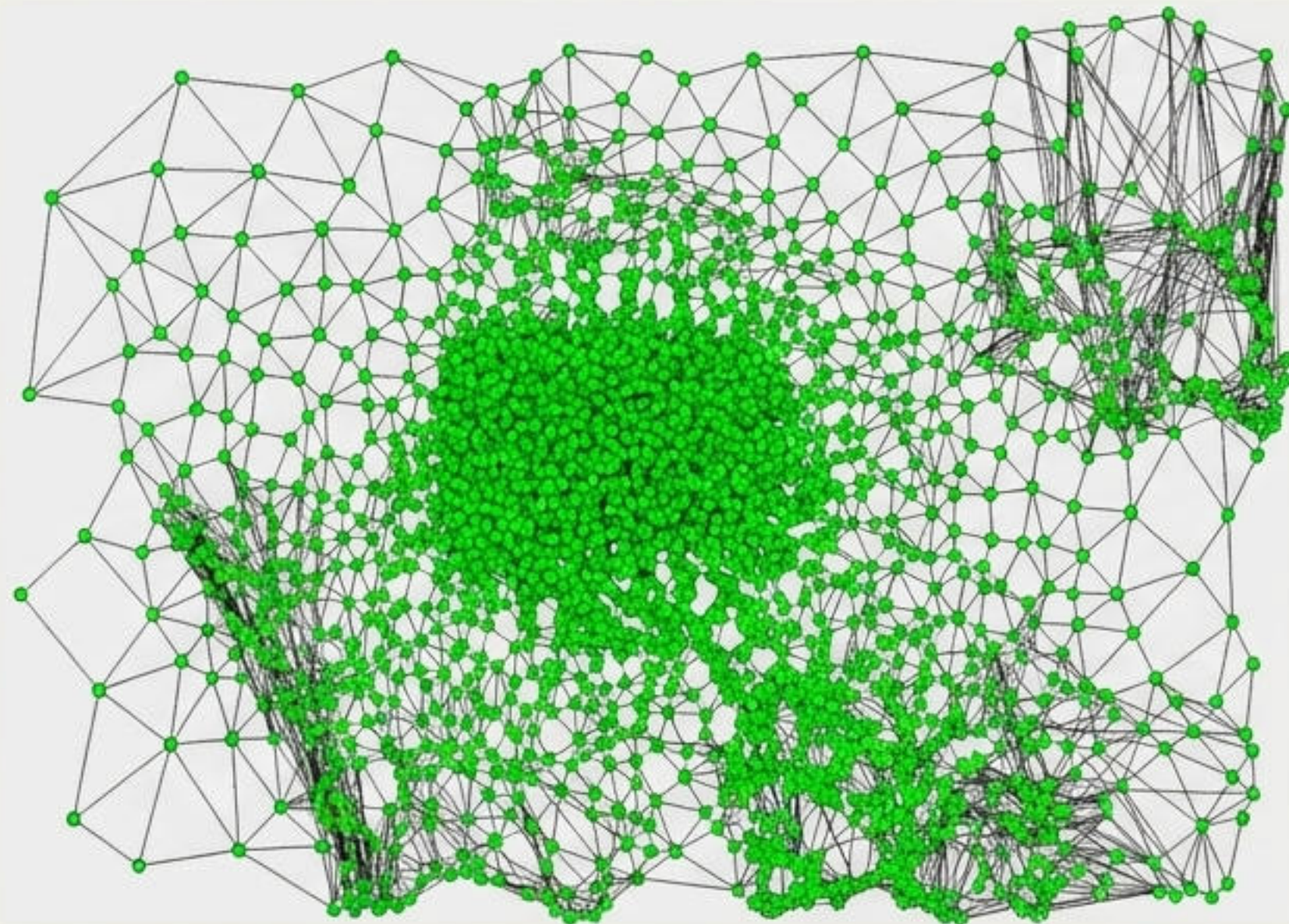
Real-world information isn't static; media and social networks deliver fragmented, moving targets. When fast learning meets moving data, the distortion is absolute.



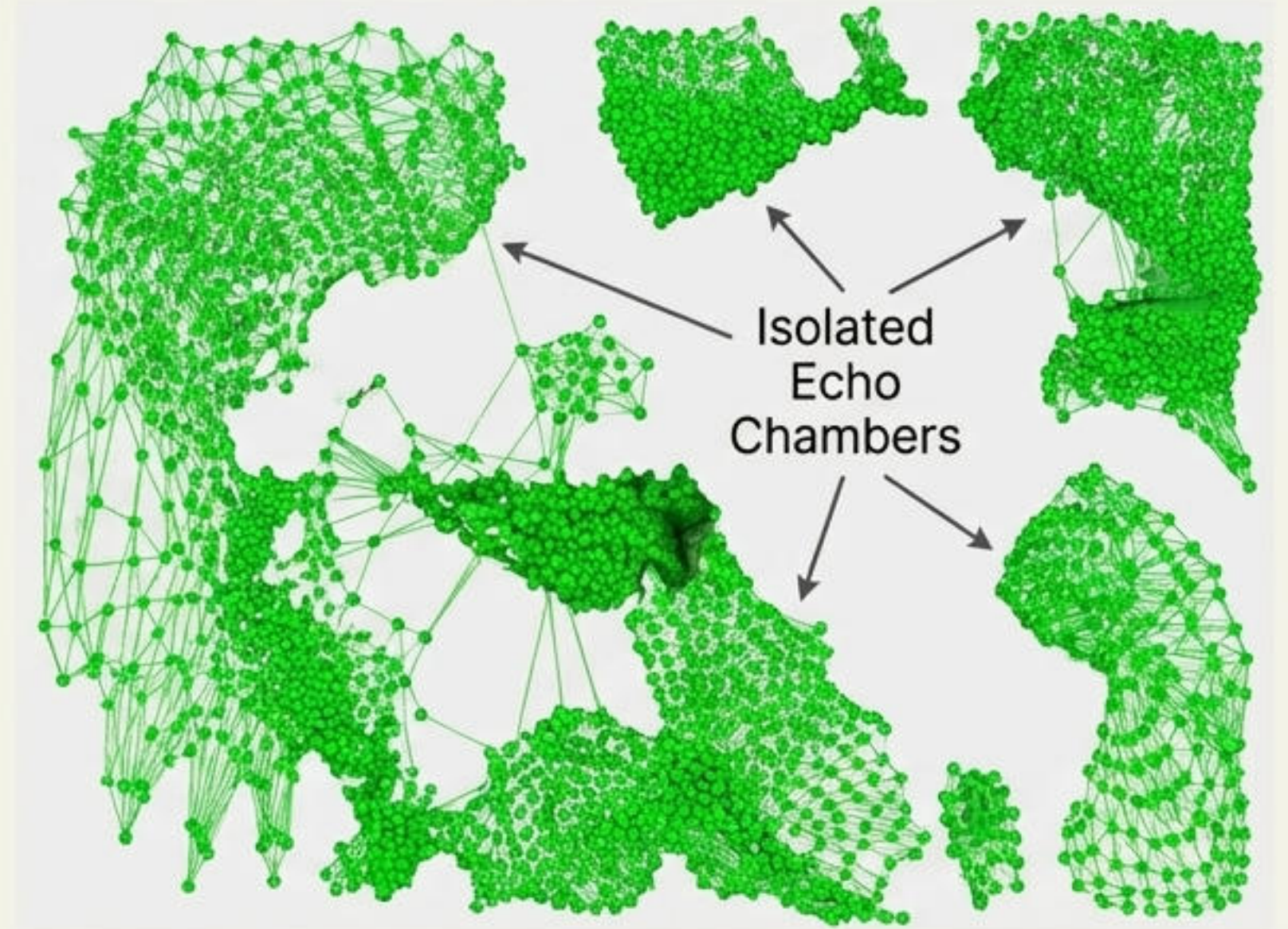
The Inescapable Memeplex

Can we just 'retrain' the brain with the correct facts? The simulations say no.

Even after **100,000** steps of slow, corrective retraining, the strong central meme remains.



The network eventually fractures into densely connected, isolated sub-beliefs.



The Echo Chamber Effect

Brains are biologically predisposed to find patterns. The internal biological distortion and the external media echo chamber form a closed, self-sustaining loop.

Internal: Distorted Brain
Topology (i-meme)



External e-memes perfectly
fit the warped topology of
the internal i-meme.



External: Algorithmic Fake
News (e-meme)

The Biological Weight of a Lie

- A lie repeated 10,000 times does not just change a mind; it physically alters the topography of the brain.
- Conspiracy theories are not merely psychological deficits. They are deeply settled attractor states locked in by the rapid freezing of neuroplasticity.
- We must protect cognitive plasticity and recognize the physiological danger of weaponized, emotionally charged misinformation.

