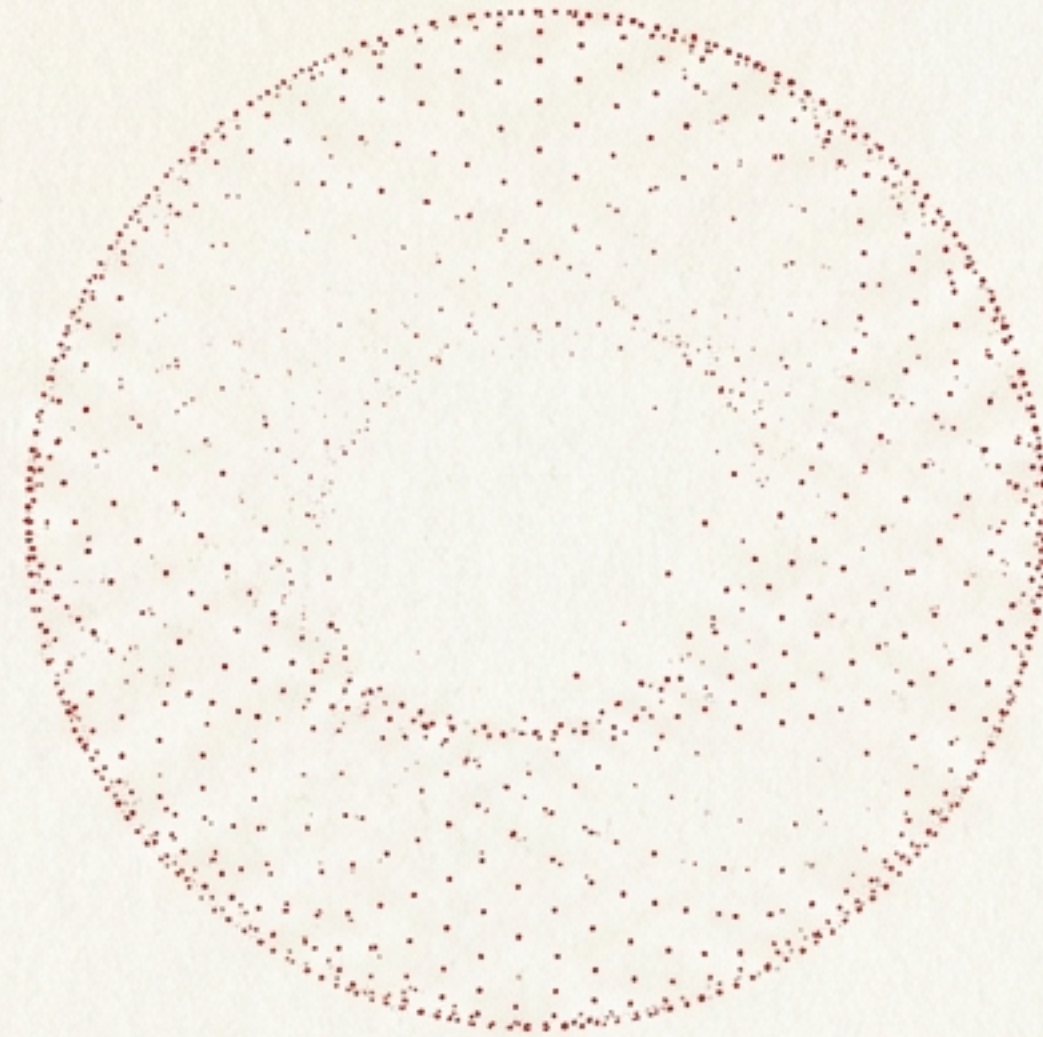
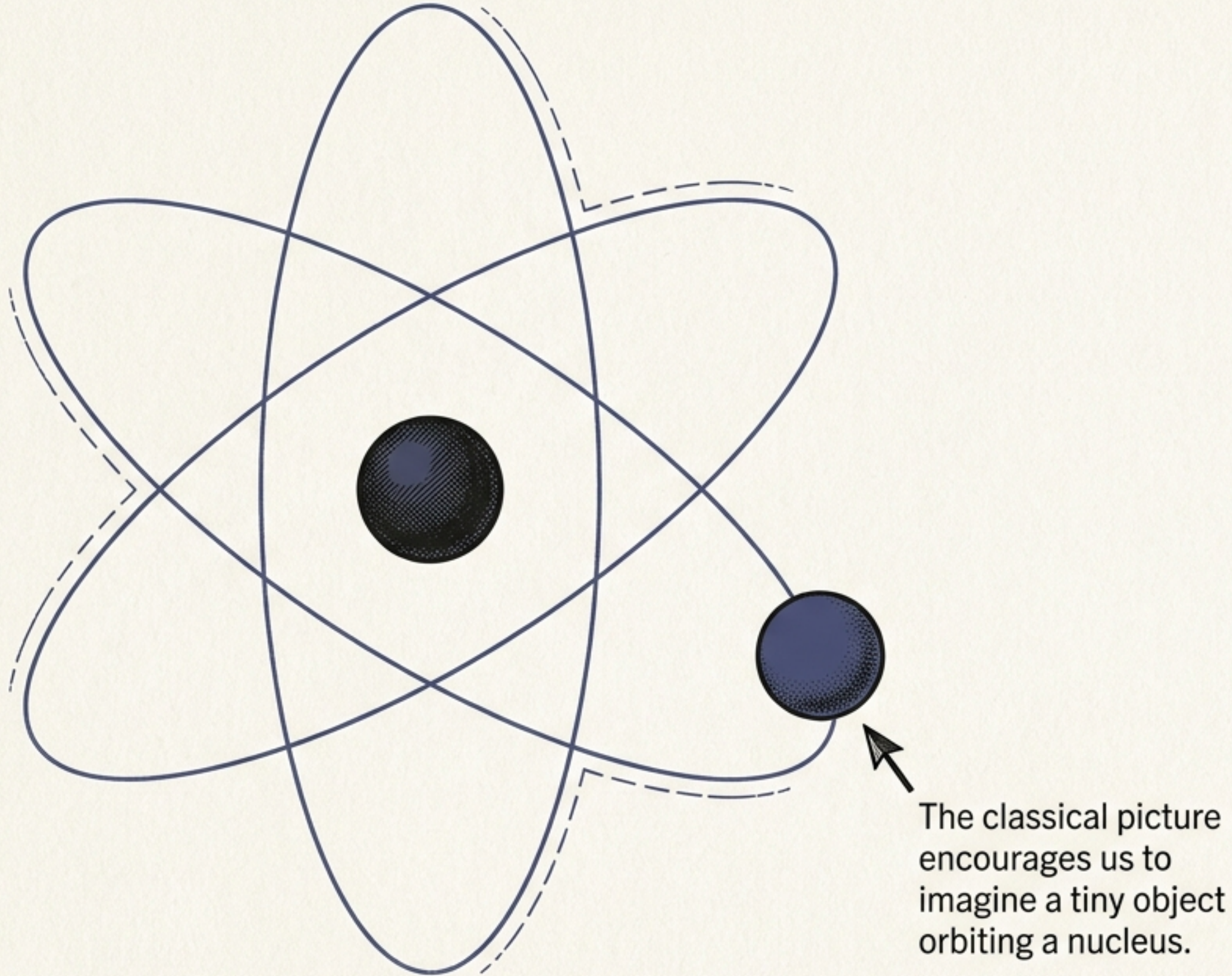




Whitehead, the Electron, & the Persistence of Pattern

Based on the essay by Bry Willis

The Classical Illusion of the Orbiting Planet



Even when we know this picture is inadequate in quantum theory, the noun “electron” invites us to imagine some enduring thing which persists whilst changing position or state.

The Baggage of the Count Noun

Once we say “an electron,” we supply a count noun. It becomes remarkably easy to imagine a little object with diachronic identity. But has the noun earned this baggage?

Enduring Thing

Continuous Diachronic Identity

(This electron was here, then there, and remains the same)

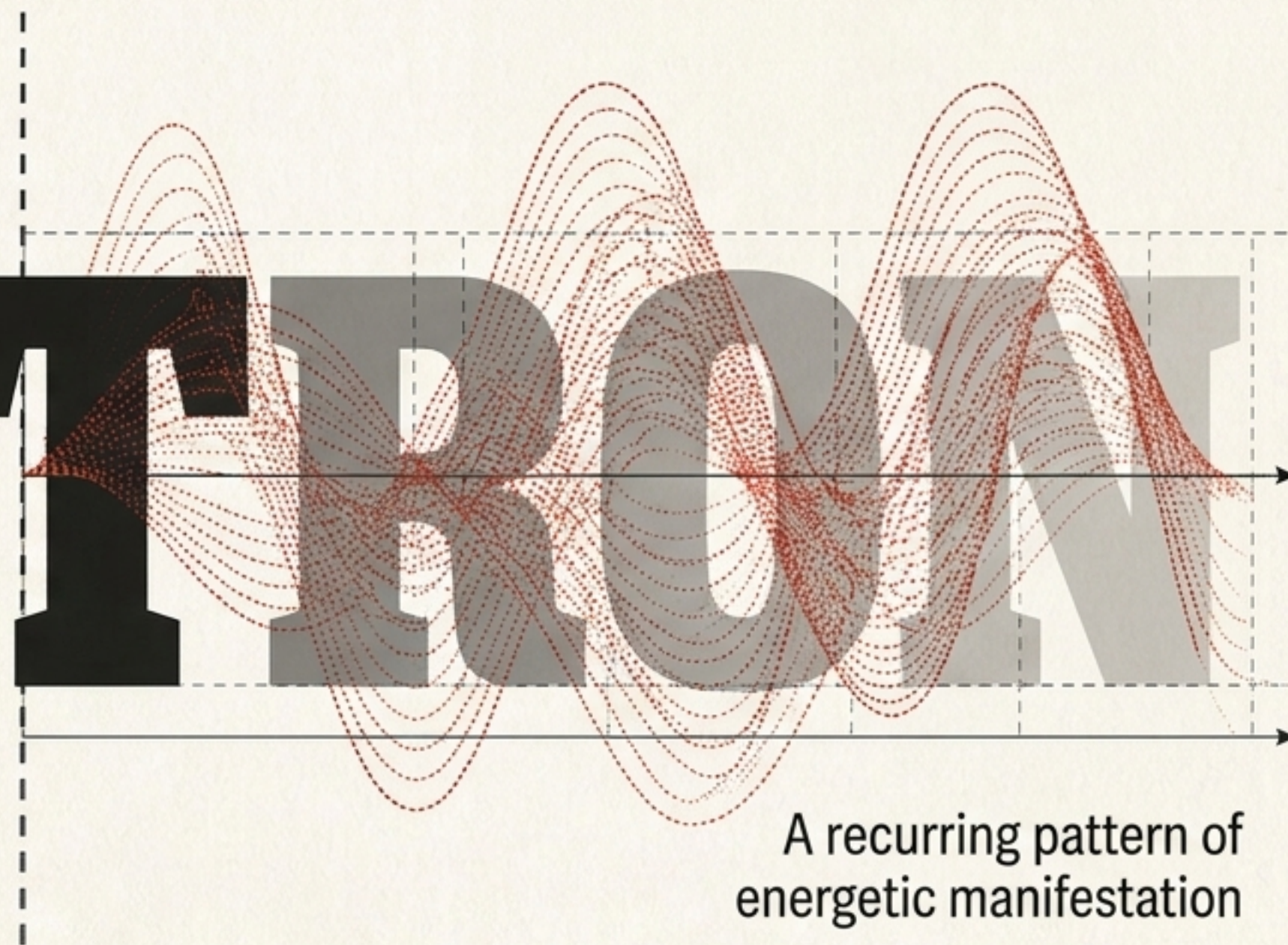
ELECTRON

Traverses Space

From Substance to Reiteration

ELECT

A single persisting object



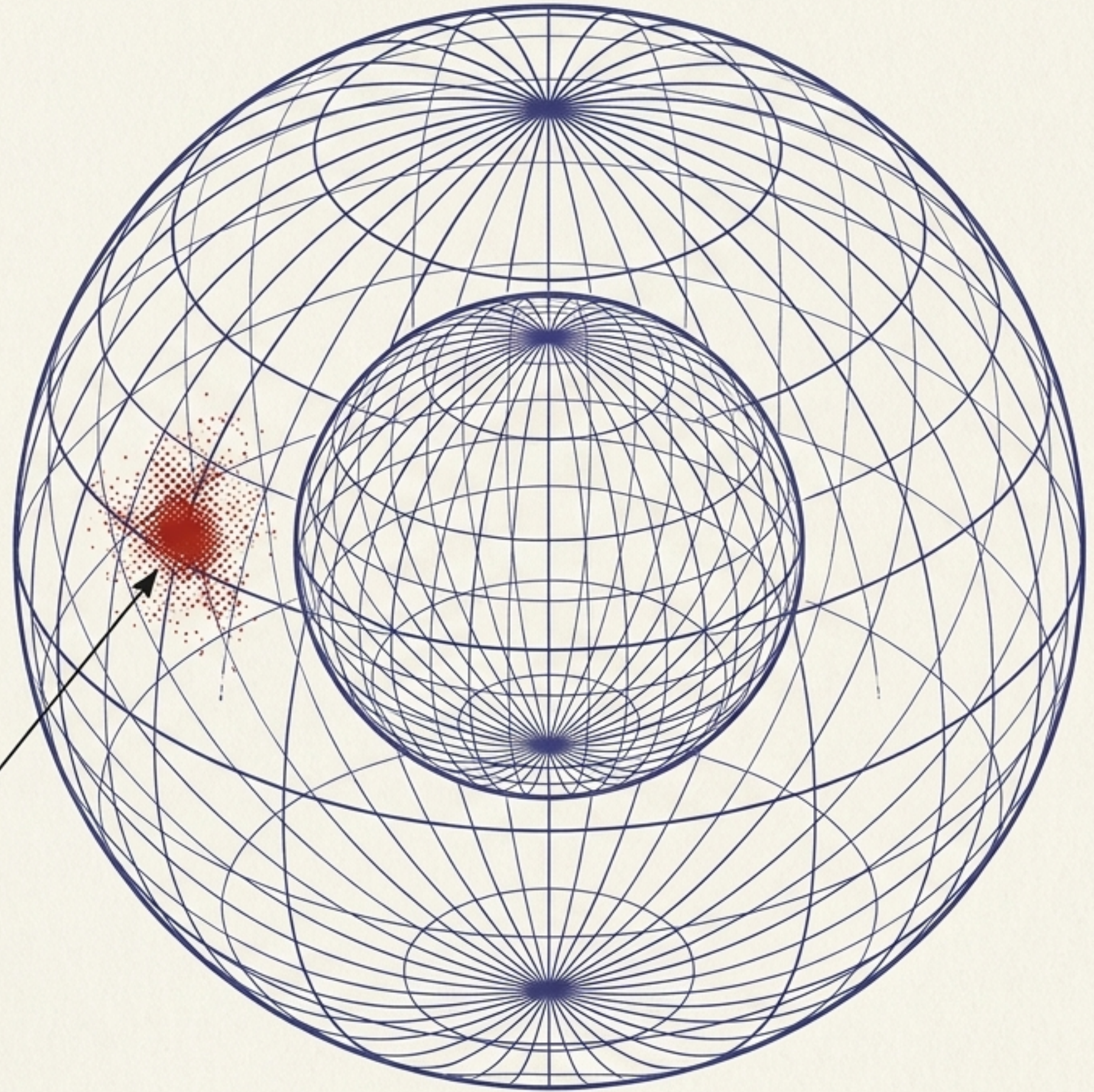
A recurring pattern of
energetic manifestation

“What if the apparent continuity belongs to the pattern
rather than to an enduring entity travelling through it?”

The Sphere Apparatus Thought Experiment

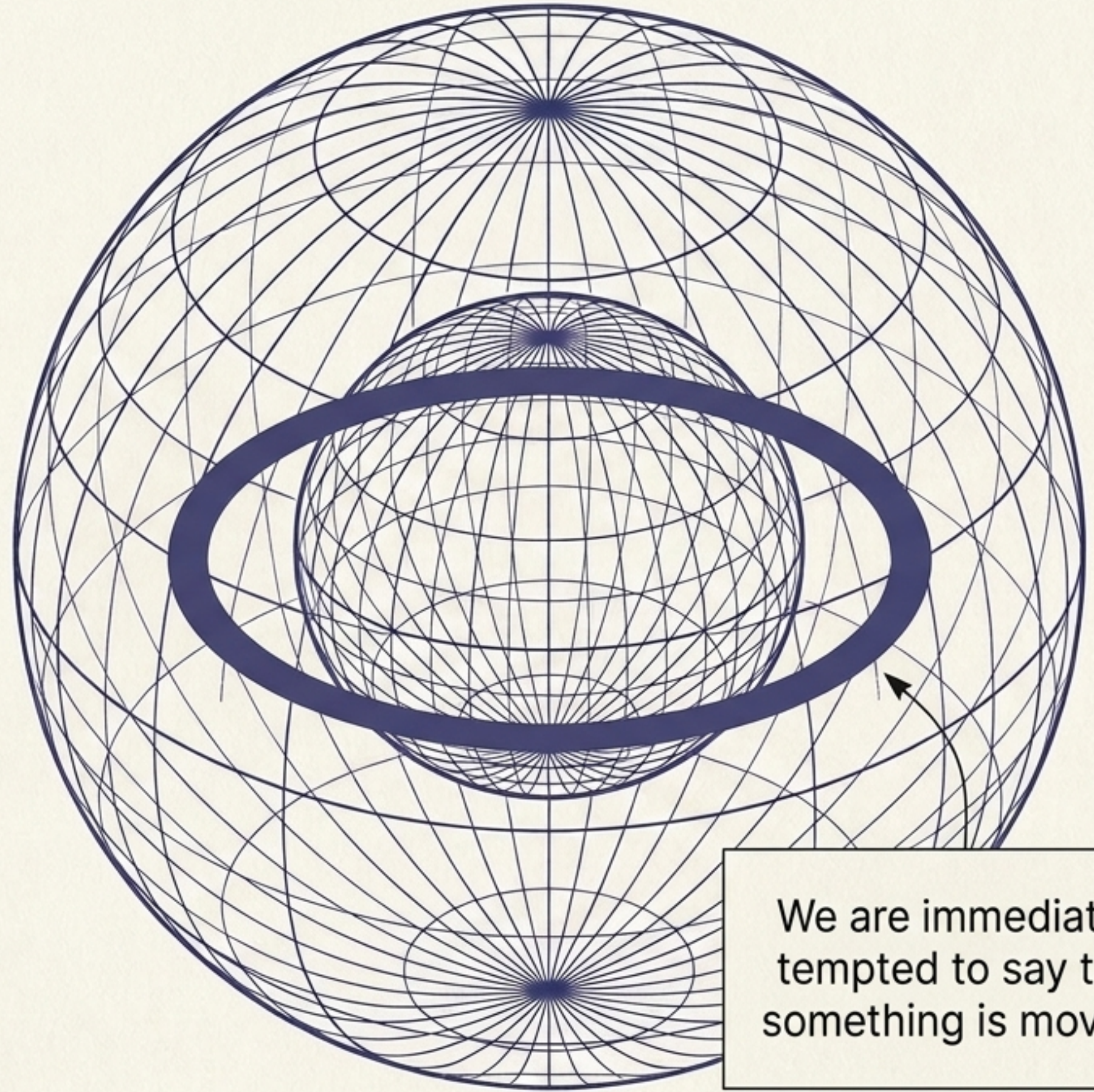
Imagine an electrical apparatus designed to record every energetic interaction reaching its outer surface.

> LOCATION: x, y, z
> INTENSITY: [Data]
> TIME: $t=1$
> DIRECTION: [Data]
> FREQUENCY: [Data]



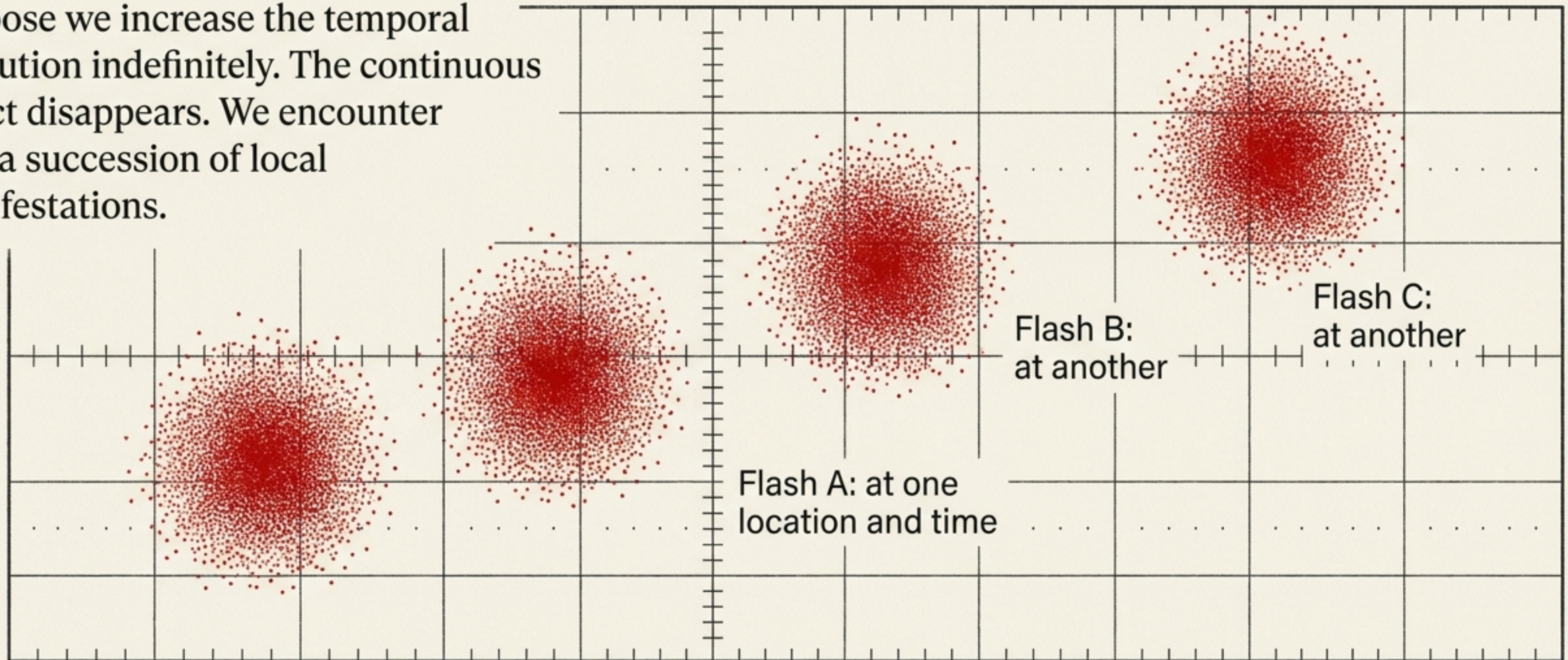
Macro Resolution: The Illusion of Coherent Motion

At ordinary temporal resolution, the data smears. We see what appears to be a coherent motion around the sphere.



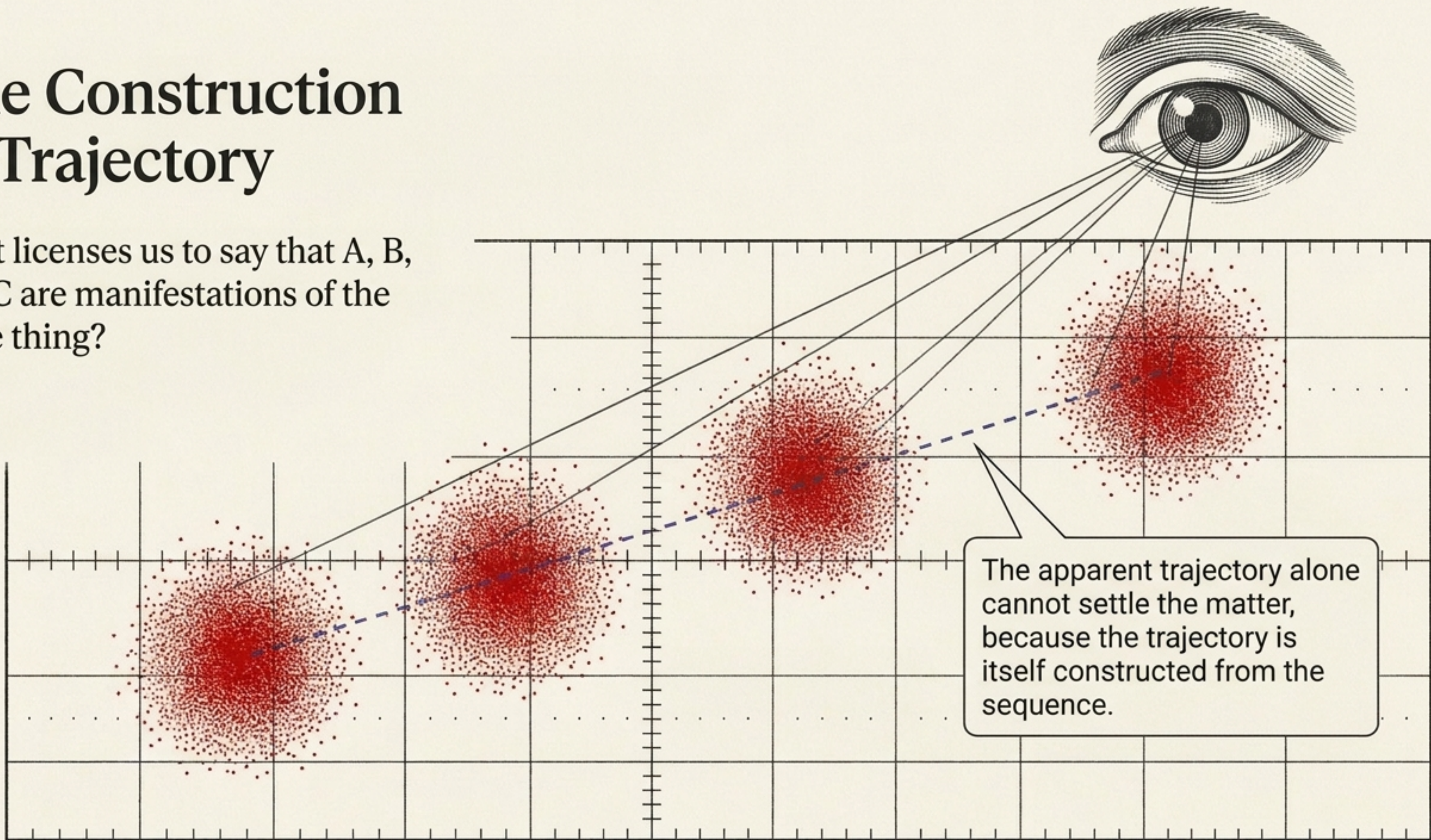
Infinite Temporal Resolution: Succession over Substance

Suppose we increase the temporal resolution indefinitely. The continuous object disappears. We encounter only a succession of local manifestations.

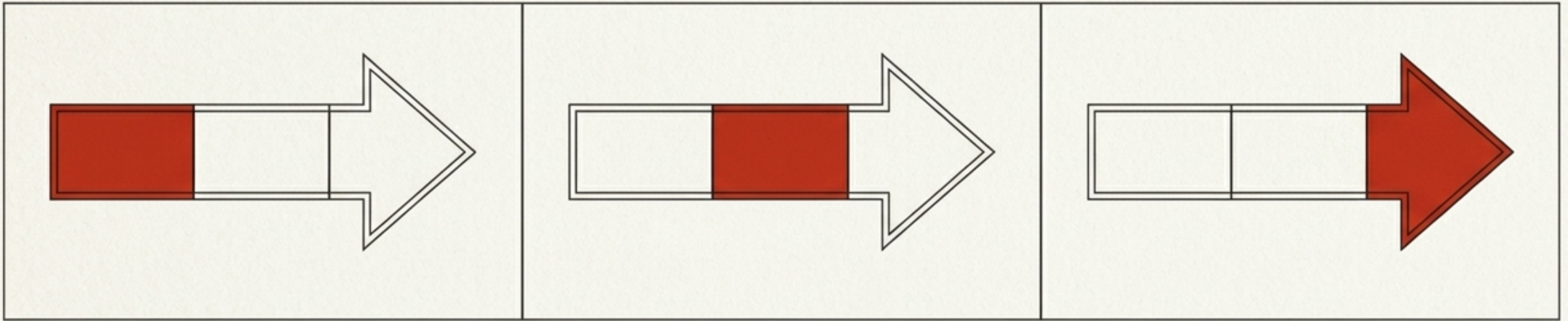


The Construction of Trajectory

What licenses us to say that A, B, and C are manifestations of the same thing?



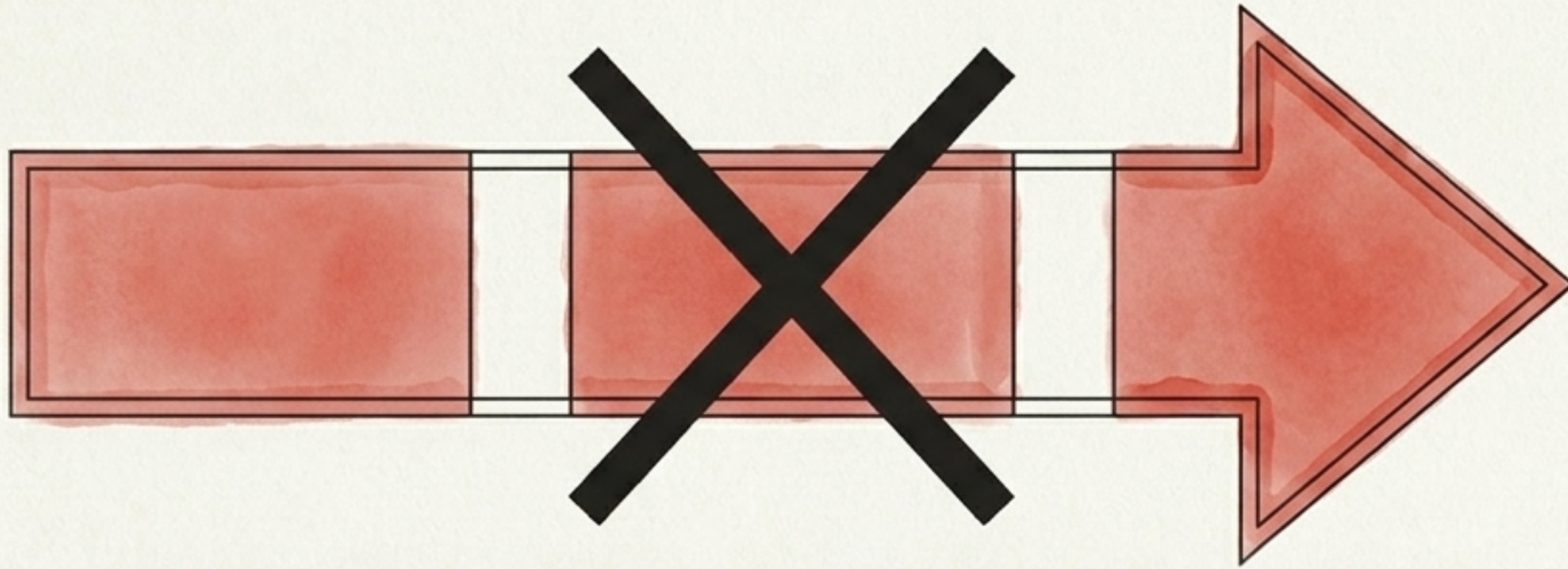
The Neon Sign Metaphor



Successive illuminated segments produce the appearance of one light travelling across the sign.

Motion Without a Moving Entity

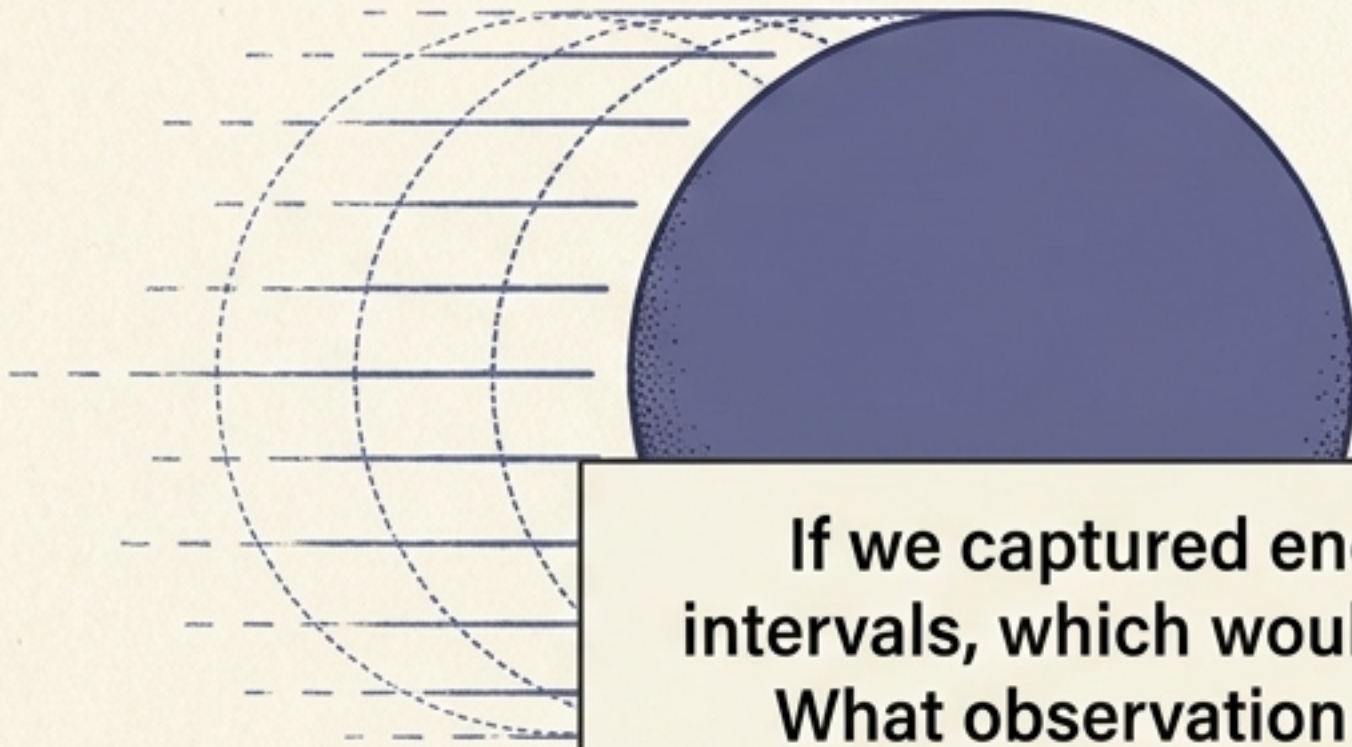
Nothing literally traverses the intervening space. The motion belongs entirely to the pattern of activation and to the way that pattern is encountered.



Note: Electrons do not work exactly like neon signs. That would be an impressively efficient way of converting a philosophical question into bad physics. The analogy merely isolates the concept of patterned recurrence.

The Modest Question

The Classical View



Chestom mount mooving:
One enduring entity moving
through successive states.

The Whiteheadian View



Successive manifestations
generating a patterned recurrence,
a patterned recurrence.

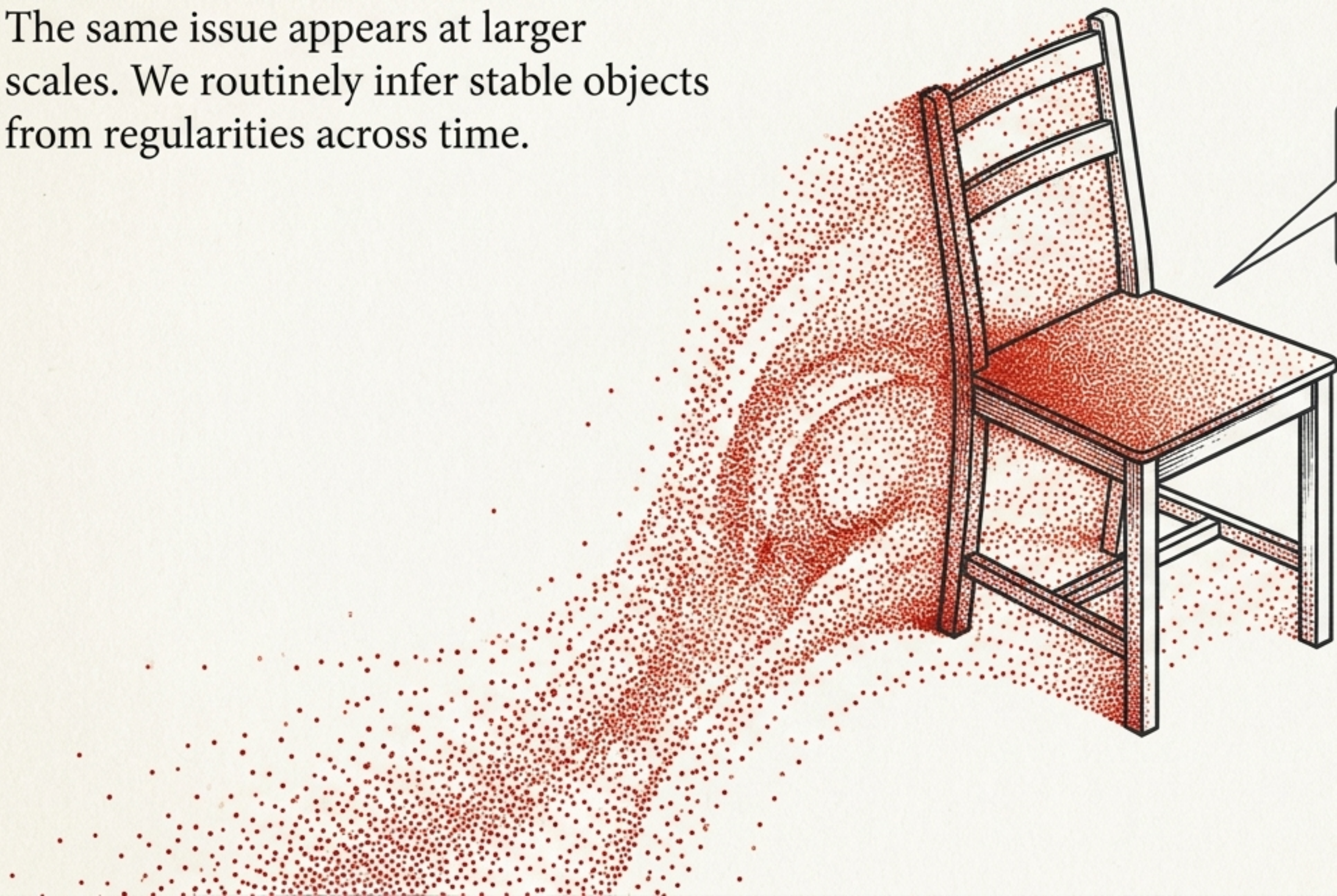
If we captured energetic signatures at arbitrarily fine intervals, which would we discover? And more importantly: What observation could actually distinguish the two?

Two Frameworks of Reality

	The Classical Object	The Whiteheadian Pattern
Nature of Entity	A tiny object orbiting	A recurring pattern of energetic manifestation
Source of Identity	Diachronic (persists unchanged through time)	A useful attribution based on patterned recurrence
Motion	Traversal of physical space	A pattern of activation
Linguistic Bias	Count Noun ("an electron")	Compression over patterned interaction

Scaling Up: The Inference of Stable Objects

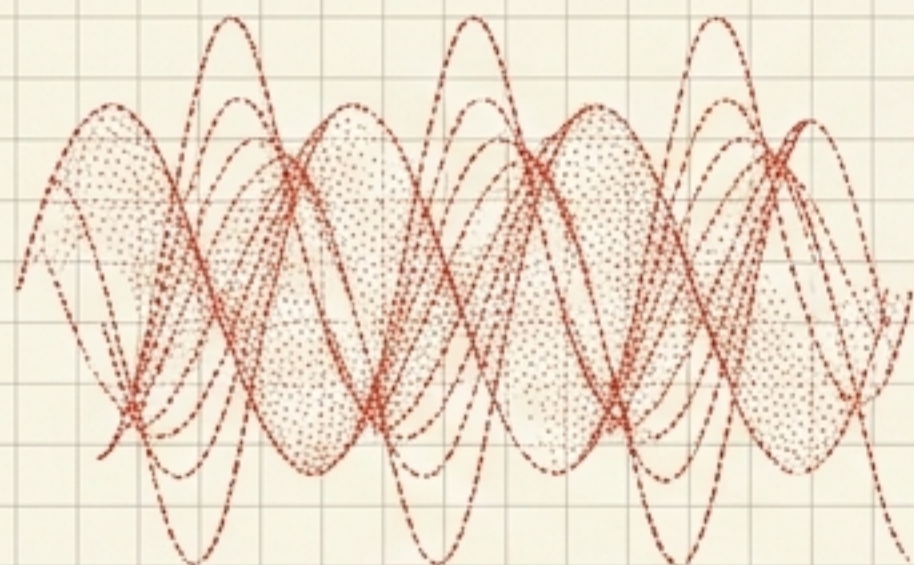
The same issue appears at larger scales. We routinely infer stable objects from regularities across time.



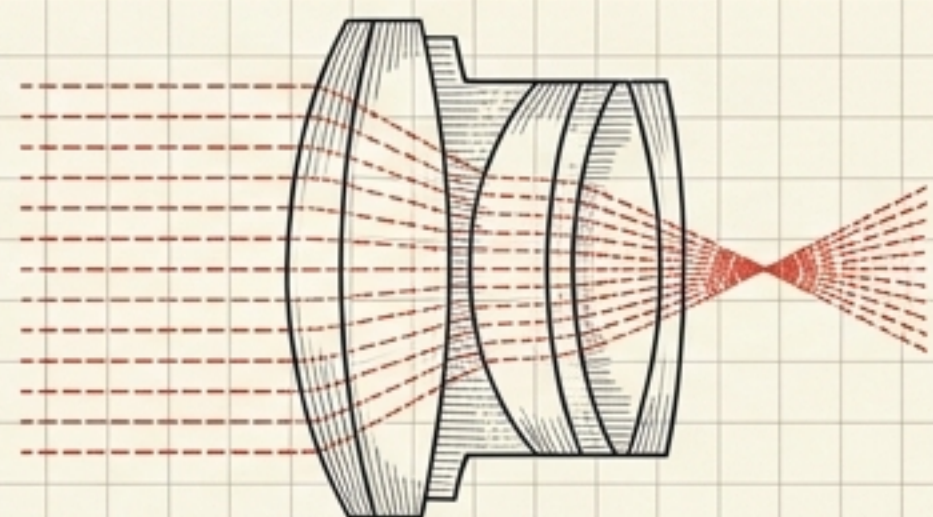
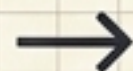
The regularity warrants tracking, prediction, and useful identity...

Encounter vs. Furniture

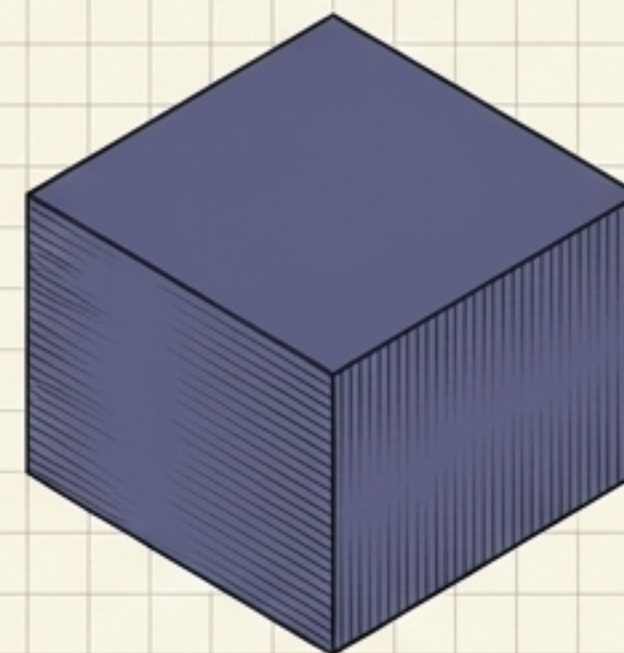
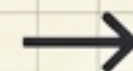
...but this does not warrant the conclusion that a numerically persistent object exists beneath the pattern.



**Raw Universal
Regularity**



Human Encounter



Stable Object

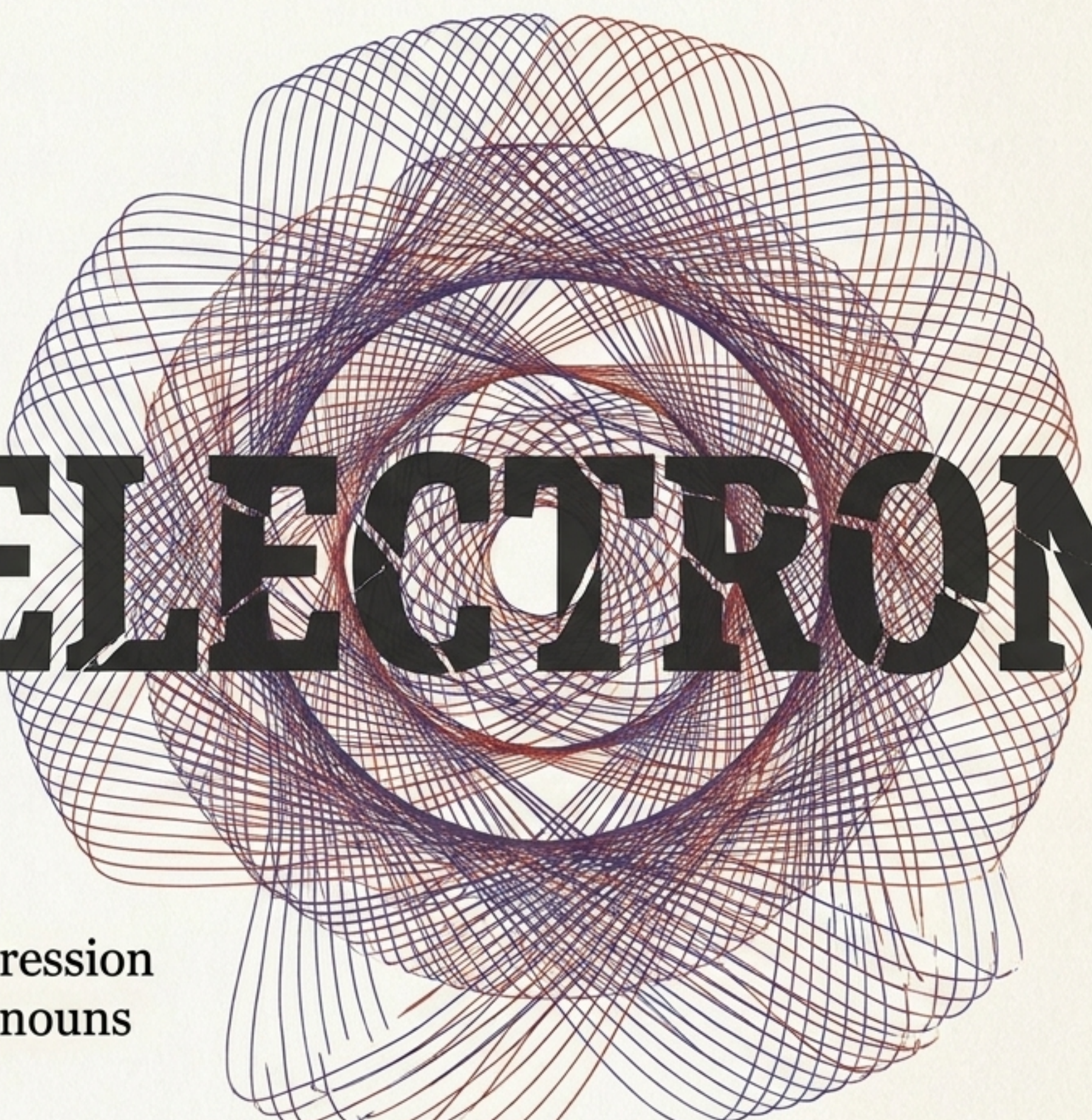
What we call objects may simply be stabilisations produced through encounter rather than pieces of furniture waiting to be discovered.

The Poverty of Nouns

The dissolution of the classical object does not tell us what should replace it.

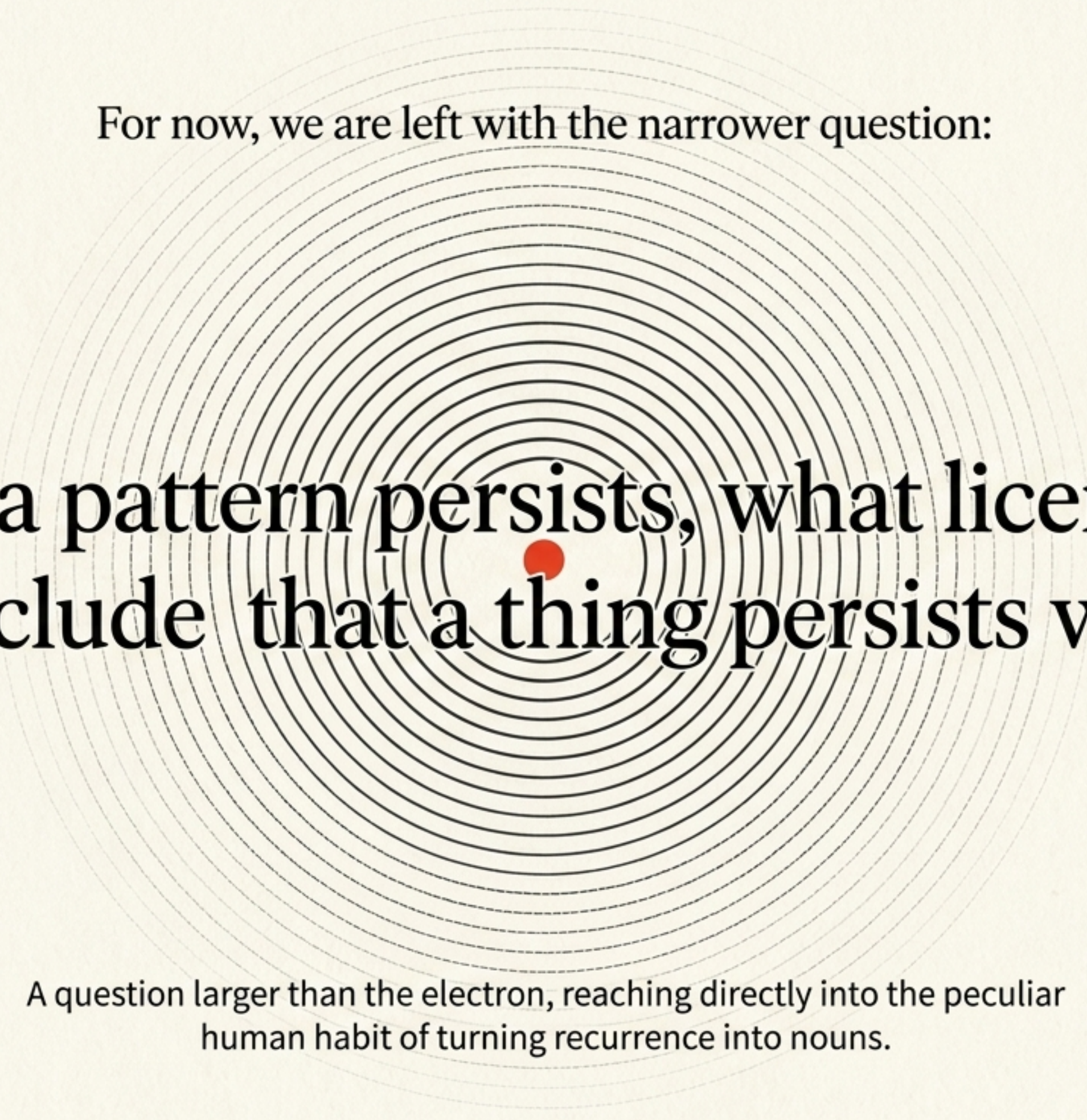
- A thing?
- An excitation?
- A recurrent mode?
- A stable constraint-pattern?

Or perhaps “electron” is simply a compression over patterned interaction, forced into nouns that are poor instruments for reality.



ELECTRON

For now, we are left with the narrower question:



When a pattern persists, what licenses us
to conclude that a thing persists with it?

A question larger than the electron, reaching directly into the peculiar
human habit of turning recurrence into nouns.