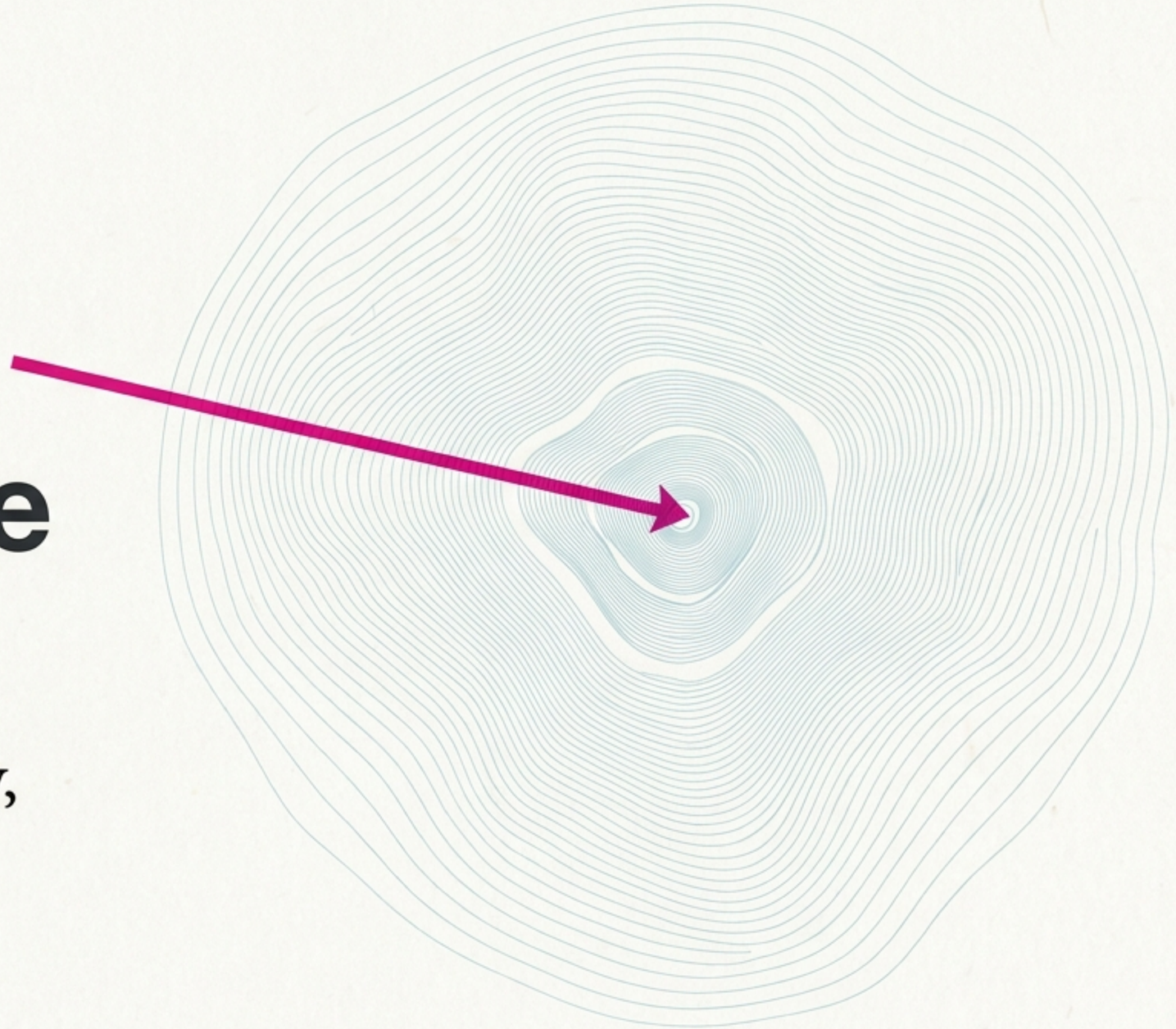
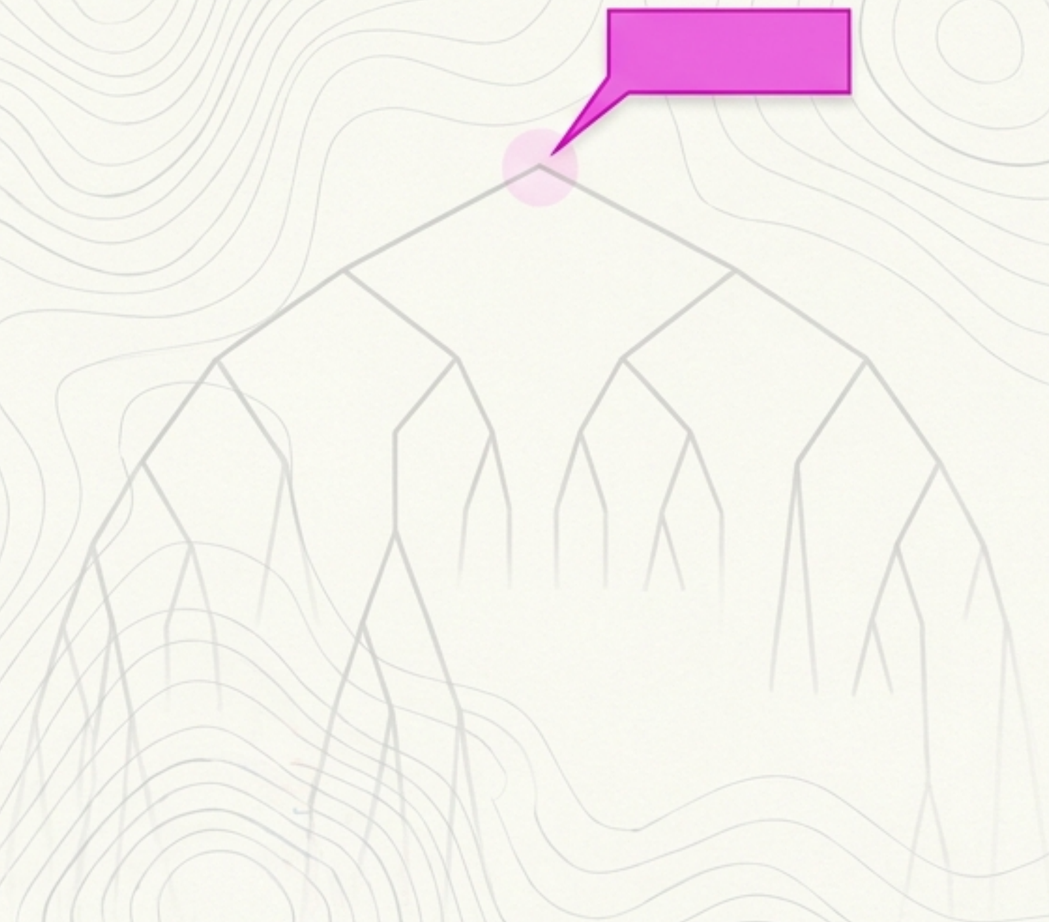
Copies Before Originals

Convergence, Admissibility, and the Explanatory Status of the First Instance



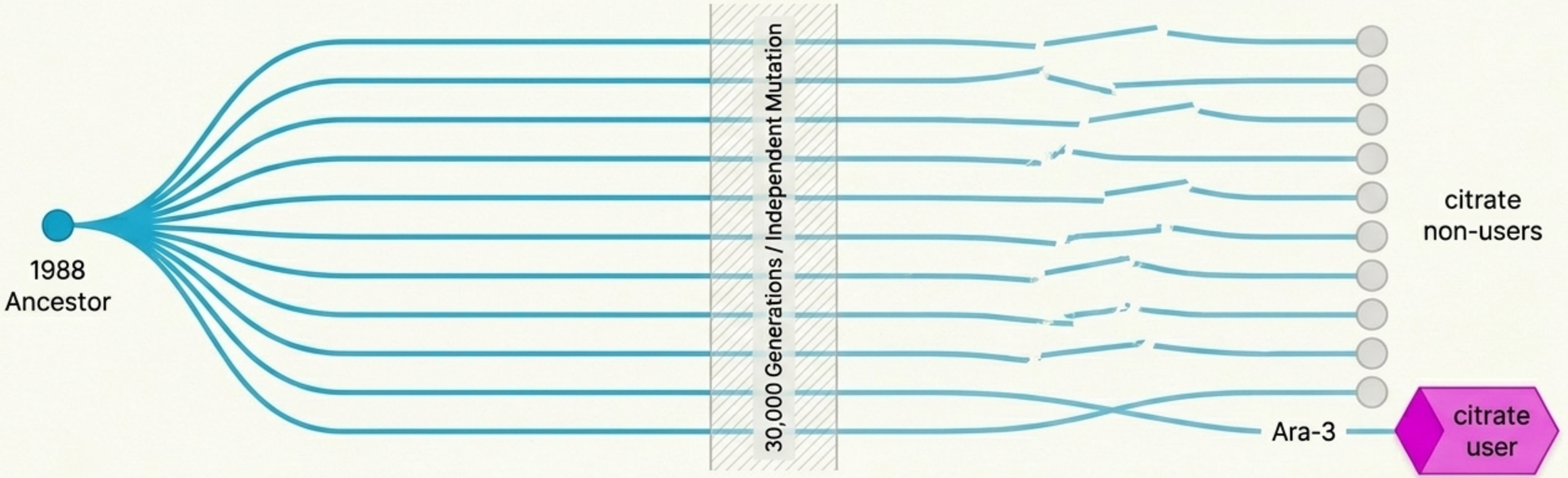


The Illusion of Lineage

Most accounts of similarity begin with descent. A manuscript resembles its exemplar because a scribe transcribed it. A species resembles its ancestor because reproduction transmitted its form.

On the standard view, resemblance is evidence of a causal history of transmission. Similarity is simply the trace left by a lineage.

The Screened-Off Diagram

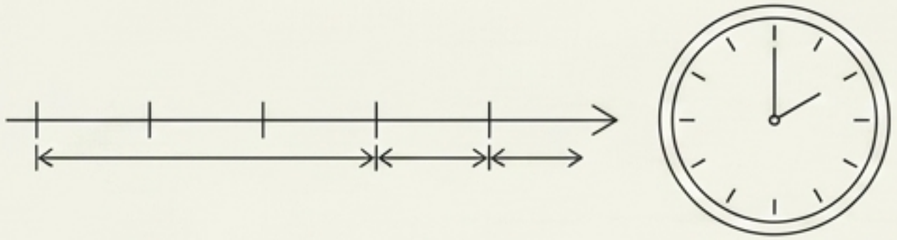
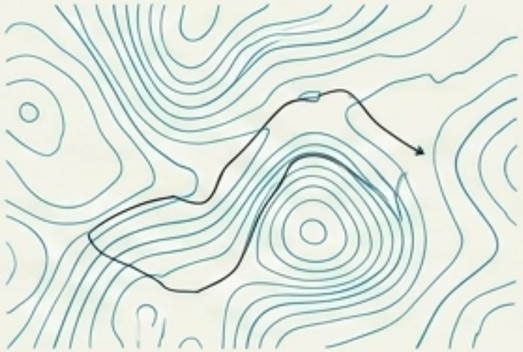


The Screened-Off Ancestor

In 1988, Richard Lenski founded 12 identical populations of *E. coli*. For 30,000 generations, all tested billions of mutations. Ancestry was constant. The outcome was not.

Insight: The ancestor is temporally real, genealogically undeniable—and explanatorily muted.
Whatever explains the convergence of the 11, and the exception of the 1, it is not their shared history.

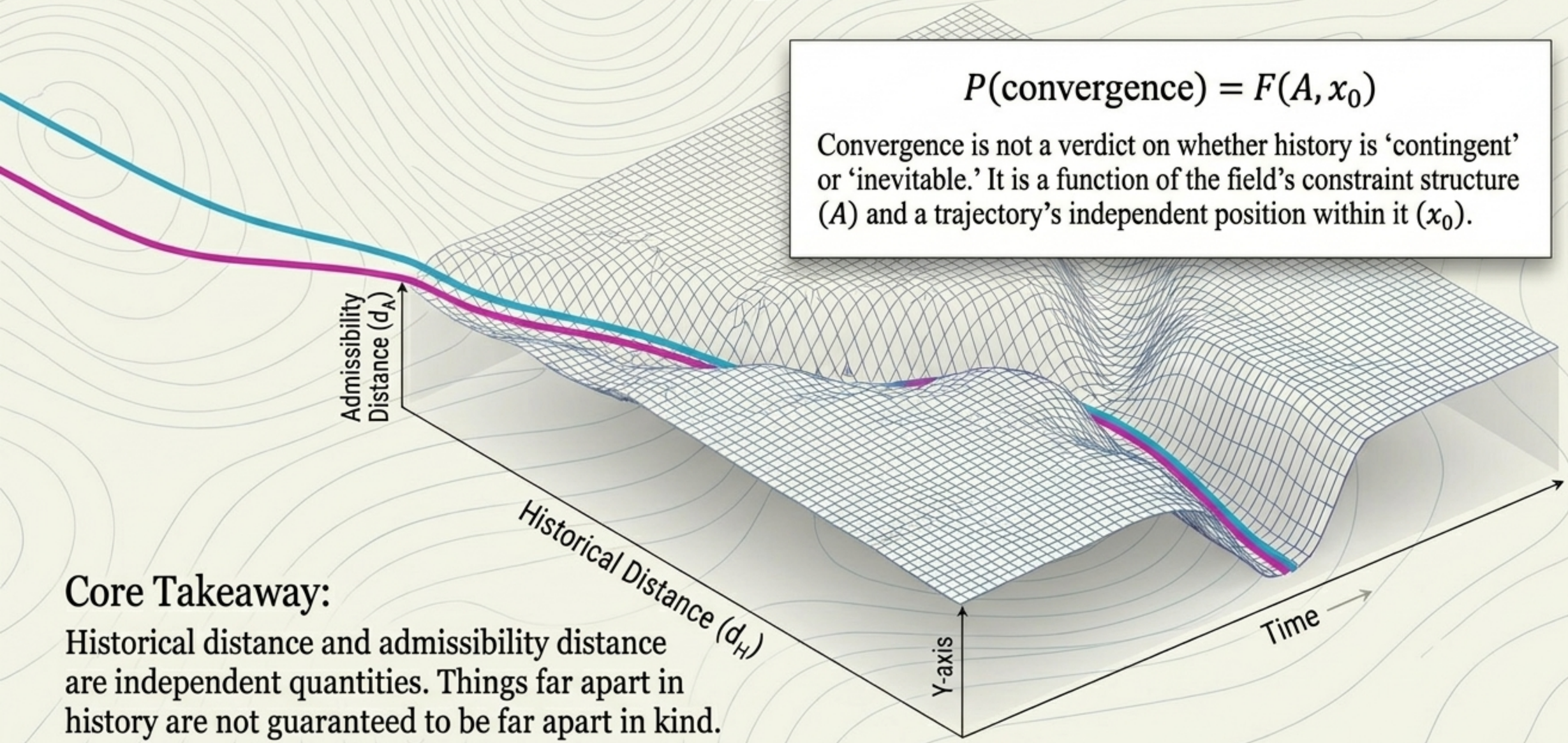
Historical Origin vs. Explanatory Origin

Historical Origin (O_H)		Explanatory Origin (O_E)	
			
Definition:	The first appearance of a structure in time.	Definition:	The structure of constraints that makes an appearance (and its recurrence) possible.
Answers:	When did it appear? Who has priority?	Answers:	Why was it available to appear at all?
Mechanism:	Tracks a trajectory against a clock.	Mechanism:	Tracks a trajectory through a topographic Admissibility Field.

The Geometry of Convergence

$$P(\text{convergence}) = F(A, x_0)$$

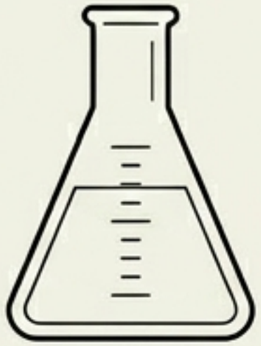
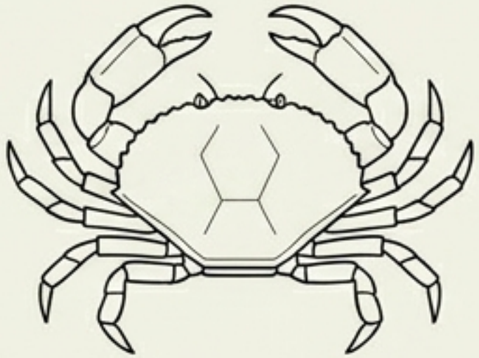
Convergence is not a verdict on whether history is ‘contingent’ or ‘inevitable.’ It is a function of the field’s constraint structure (A) and a trajectory’s independent position within it (x_0).

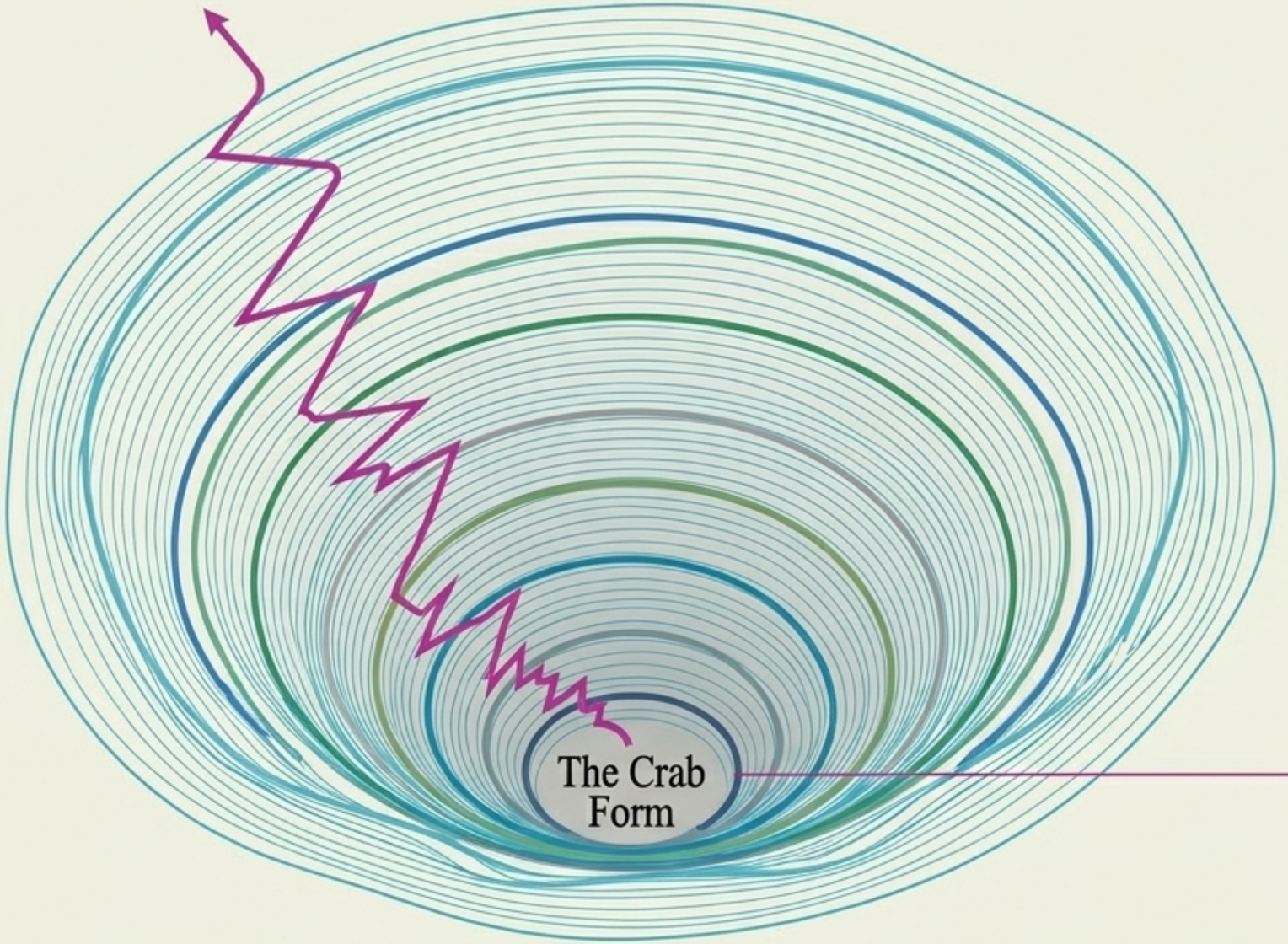


Core Takeaway:

Historical distance and admissibility distance are independent quantities. Things far apart in history are not guaranteed to be far apart in kind.

Deep Absence: Convergence Across Scales

			
Micro: *E. coli*	Macro: Carcinization	Intellectual: Darwin & Wallace (1858)	Societal: Agriculture
Constraint: Glucose-limited medium.	Constraint: Benthic mobility/protection.	Constraint: Malthusian logic & natural history evidence.	Constraint: Post-glacial Holocene climate.
Result: 11 identical non-citrate phenotypes.	Result: 5+ unconnected lineages evolve crab bodies.	Result: Simultaneous, uncontacted arrival at natural selection.	Result: Independent domestication in the Fertile Crescent, China, Mesoamerica, and the Andes.



The Benthic Attractor

The Benthic Attractor

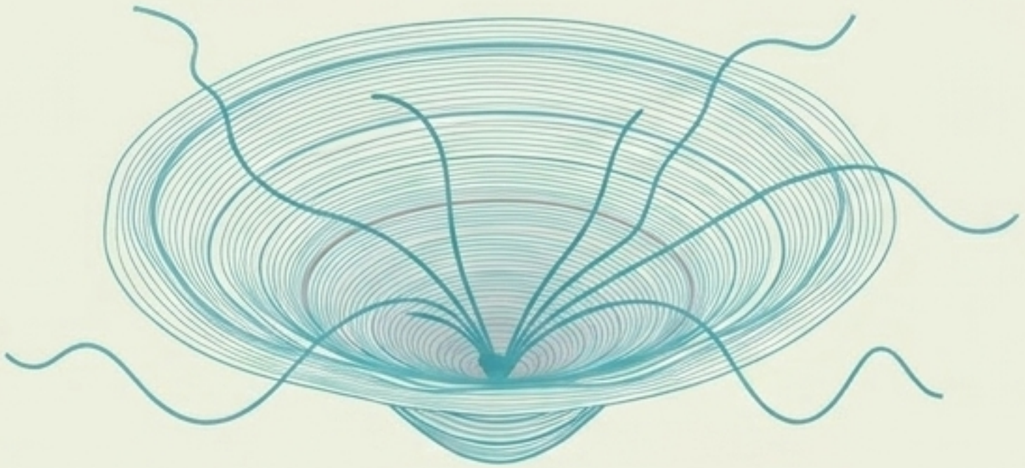
Coined by L.A. Borradaile in 1916 as “nature’s many attempts to arrive at a crab.”

Decapod crustaceans have independently evolved a crab-like body plan from distinct ancestors at least five times.

Exception Callout

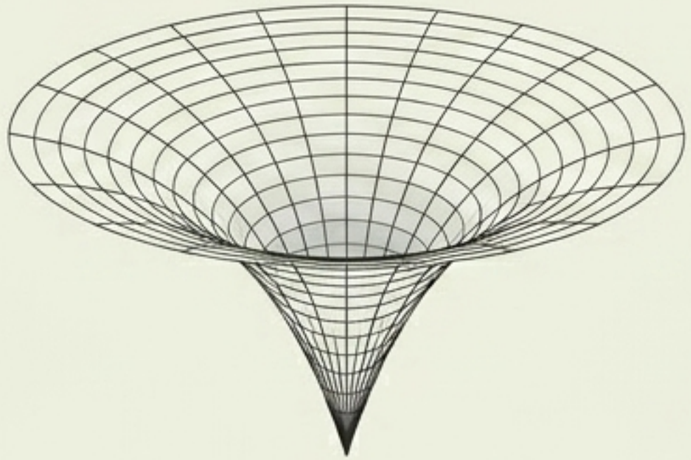
Decarcinization: The crab form has also been independently abandoned at least seven times. The admissibility field is not a teleological ratchet toward a fixed destination; it is a probabilistic space that trajectories can enter—and occasionally exit.

A Different Modal Category: The Mathematical Exception



Biological & Cultural Convergence

Dynamics:	A highly biased attractor. Alternatives are physically possible.
Logic:	$A(x^*) >> A(x)$ (The field heavily favors the region).
Example:	Carcinization.

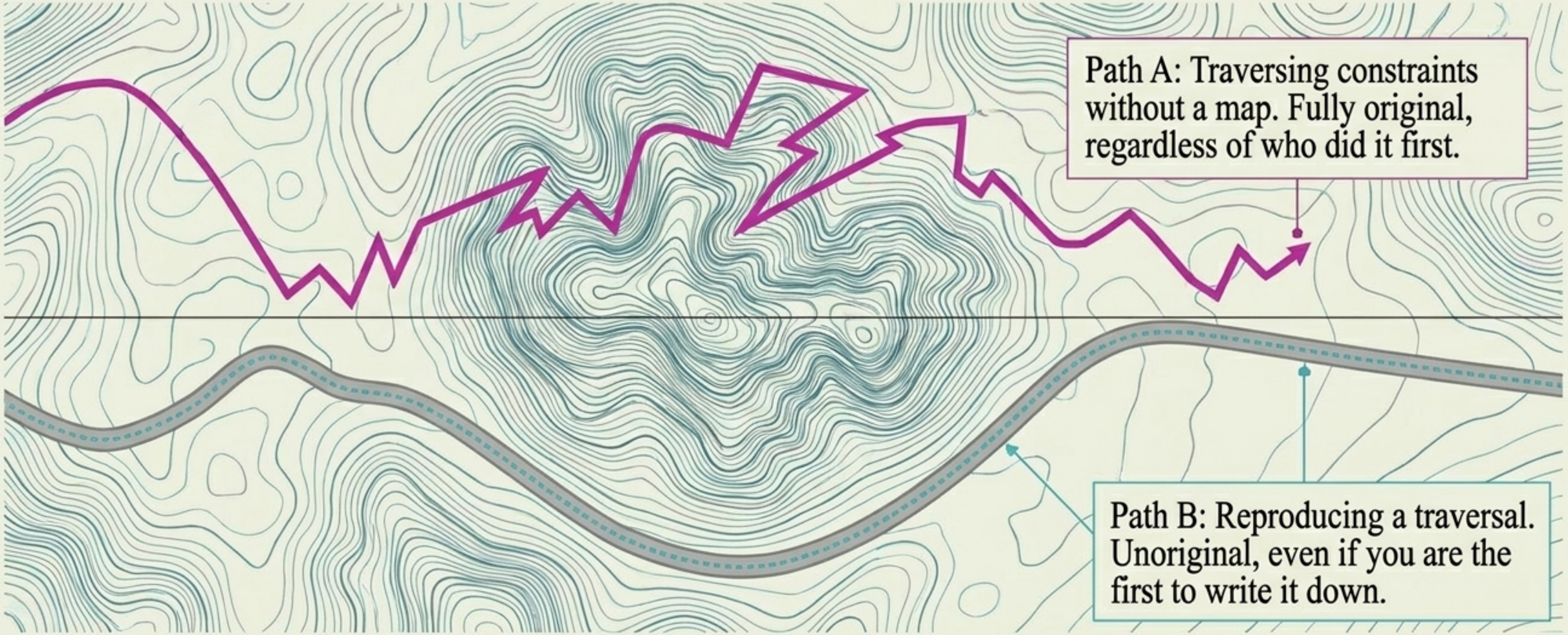


Mathematical Necessity

Dynamics:	Absolute logical entailment. Alternatives are impossible on pain of contradiction.
Logic:	$A(x) = 0$ for all $x \neq x^*$ (Every alternative is driven to zero).
Example:	The Pythagorean Theorem. 2+2=4 is not a "highly biased attractor"—it is the only coherent trajectory.

Originality Without Priority

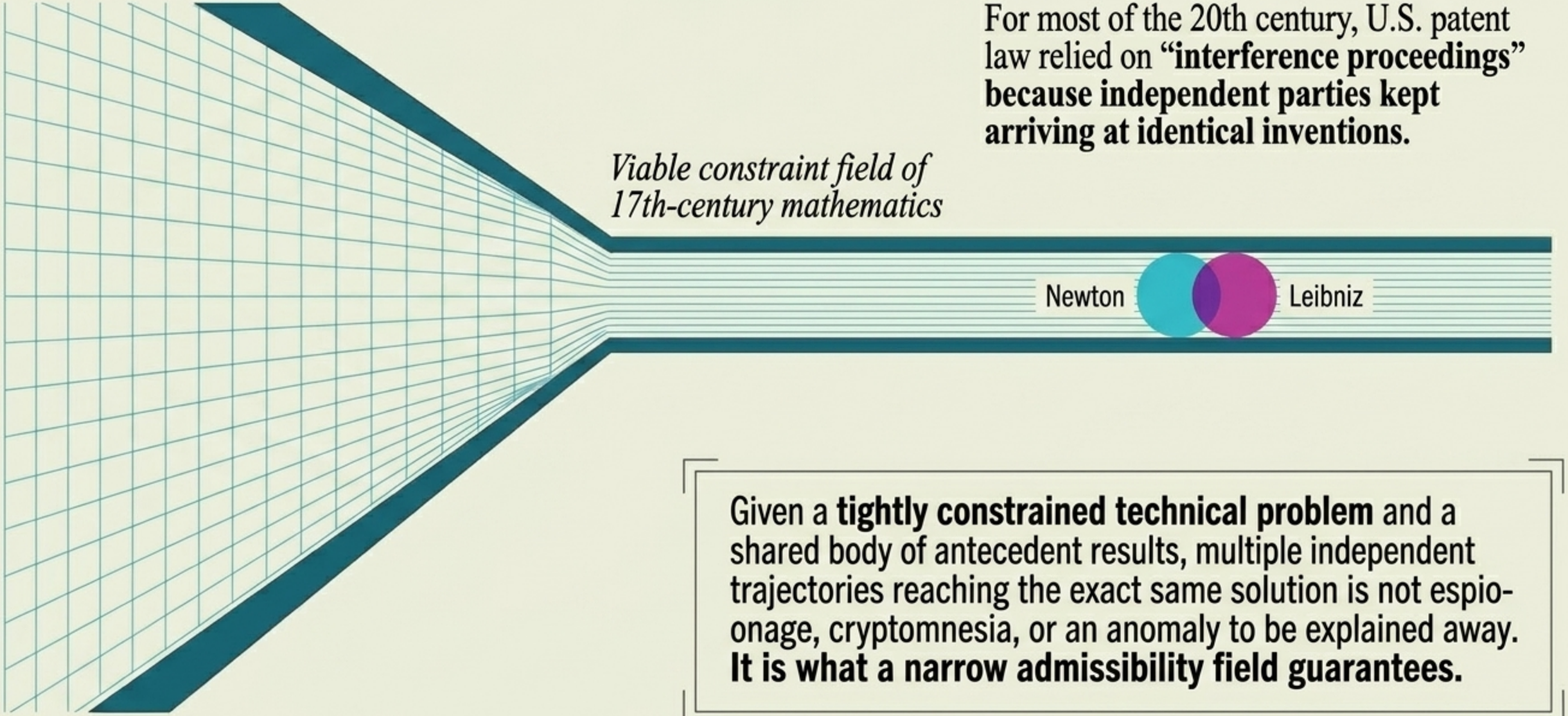
The ordinary use of "original" conflates being first with genuinely doing the work. Once O_H and O_E are separated, originality is redefined: it is a relation between a trajectory and a field, not a trajectory and a clock.



Constraint Funnel

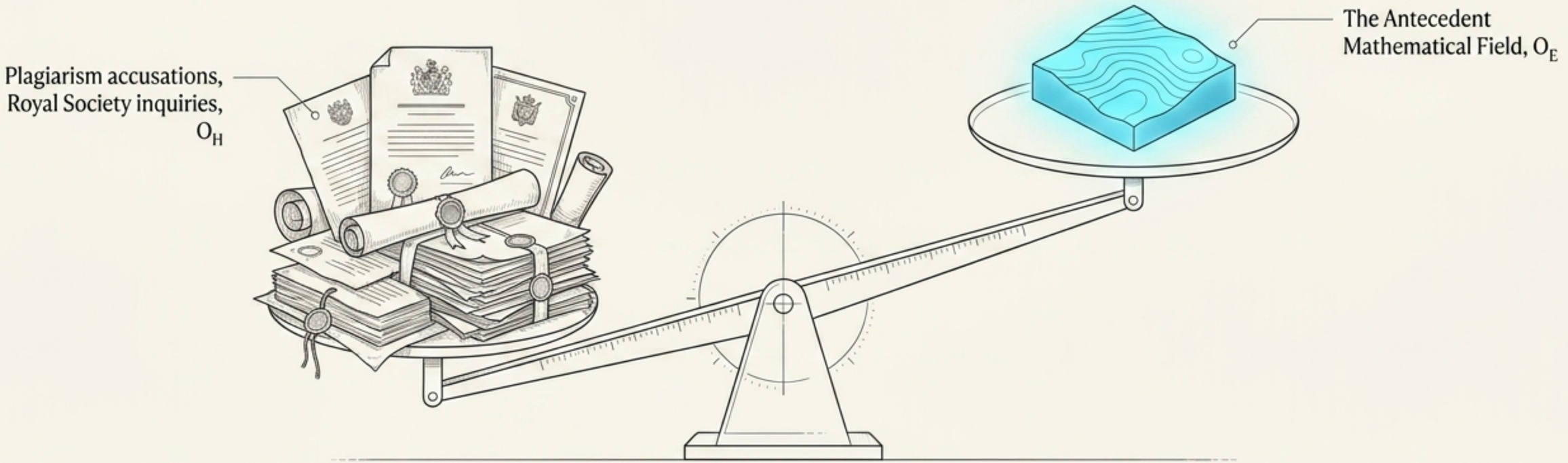
Invention & Discovery

For most of the 20th century, U.S. patent law relied on **"interference proceedings" because independent parties kept arriving at identical inventions.**



Given a **tightly constrained technical problem** and a shared body of antecedent results, multiple independent trajectories reaching the exact same solution is not espionage, cryptomnesia, or an anomaly to be explained away. **It is what a narrow admissibility field guarantees.**

The Priority Trap

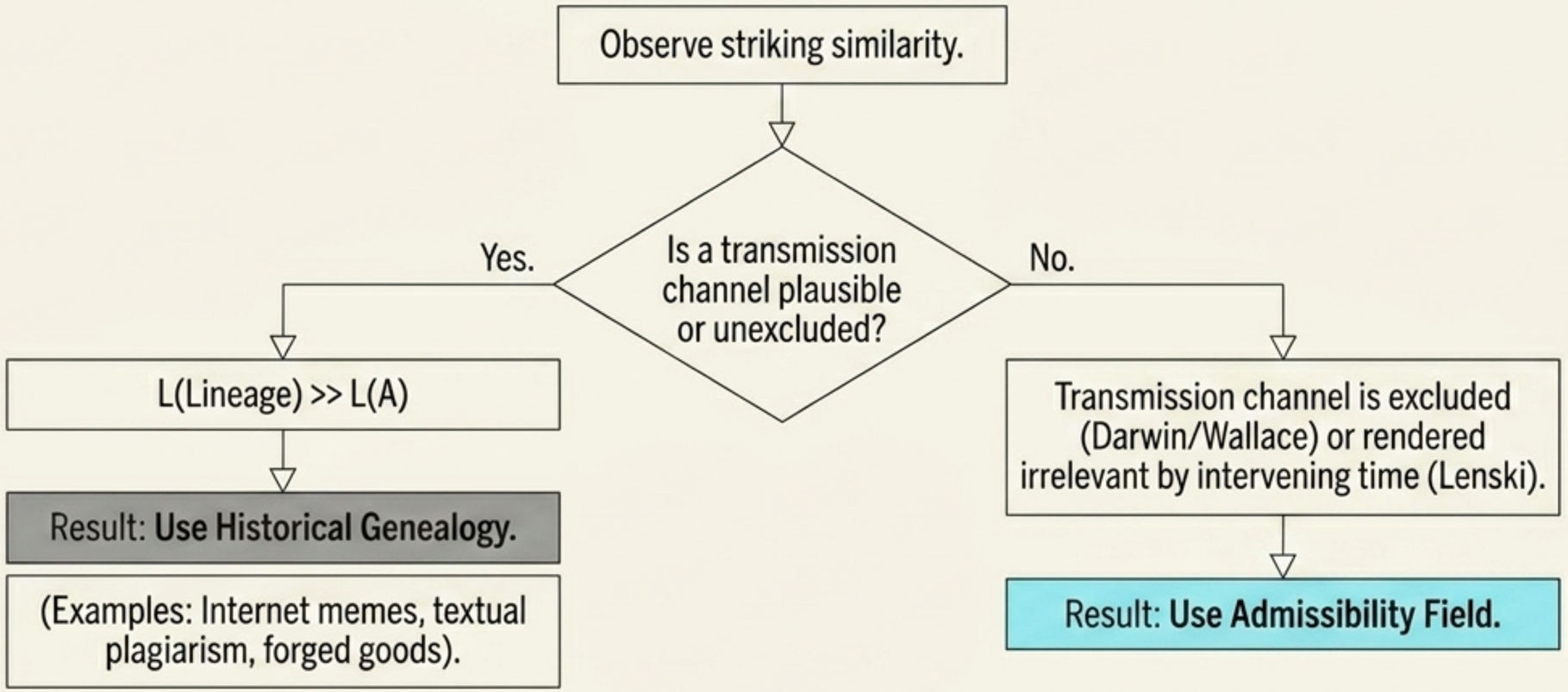


The bitter calculus dispute between Newton and Leibniz consumed decades of institutional energy attempting to establish historical origin (O_H)—who reached it first, and who saw whose papers.

Almost no energy was spent on the explanatory origin (O_E)—the half-century of prior mathematics that made calculus simultaneously reachable from multiple directions.

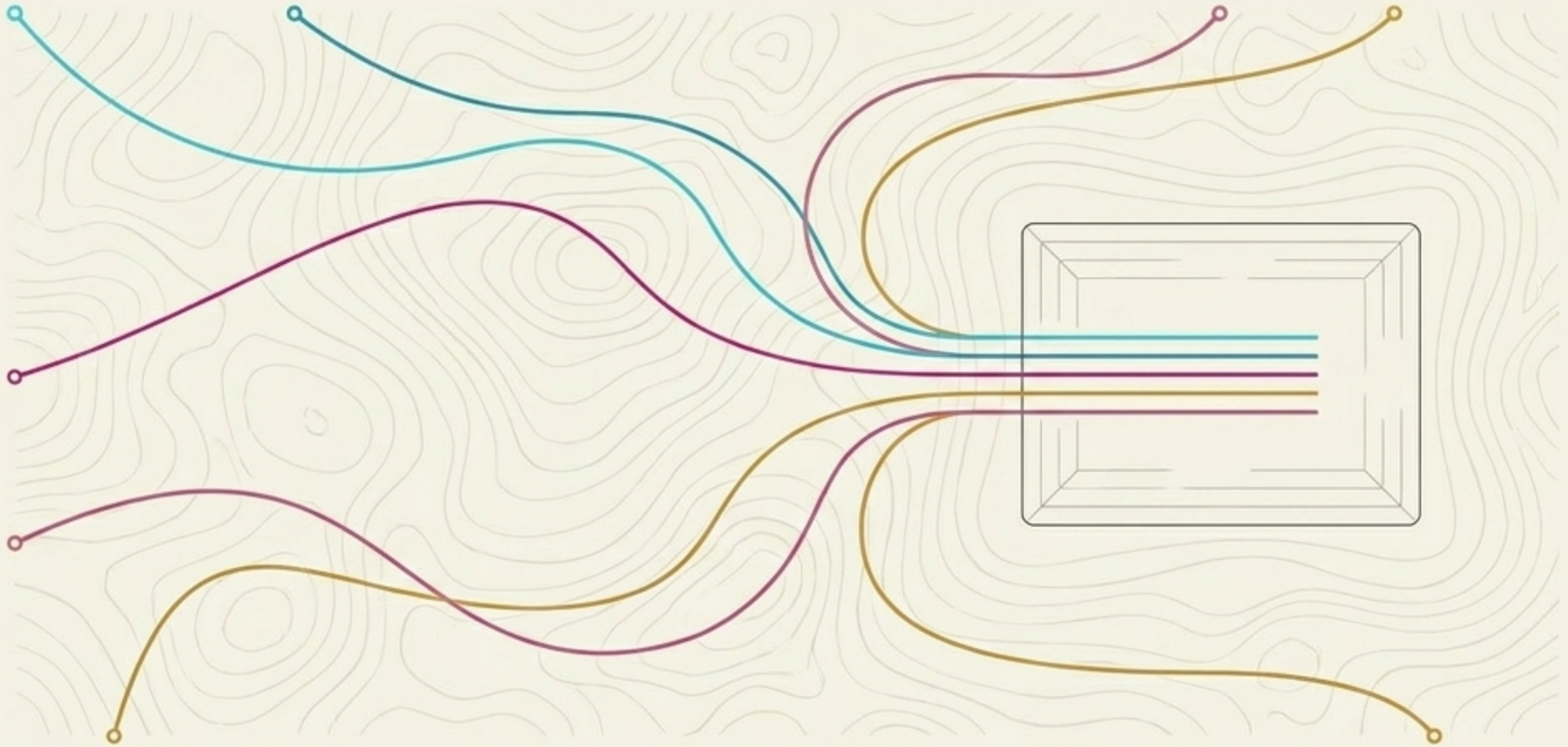
> Authorship is a vital social convention for allocating credit. It is practically useless as a guide to why the authored thing exists.

When Does Lineage Still Win?



The Admissibility Field is not a license to prefer elaborate explanations. It is a discipline for using them only where the simpler mechanism of lineage has already been ruled out on the evidence.

They Arrived.



A citrate-metabolizing lineage, a crab-shaped body, a theory of natural selection, a cultivated grain.

Each looks, from the outside, like a copy of the others' kind.

But they did not copy anything. There was nothing available to reproduce from.

The original deserves its historical status. It was first. What it does not deserve is explanatory priority over the very recurrence it is so often credited with causing. The first arrival is only ever the earliest place the invisible field happened to become visible.