

Objective reality as the spine and subjective realities as the bushes of a Kesten tree of consistent stories

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First posted: October 24th, 2025

This version: v1.1 — October 28th, 2025

Latest version and details: <https://gmunu.org/kestentreereality.html>

Explaining how subjective experience comes out of today's physics is hard. And we can't deny experience—it's the one thing we're sure of. So flip the problem: start from experience and explain how "objective reality" shows up. This work addresses long-standing questions in idealism: Why does there appear to be a single immortal objective reality shared among many subjective realities? And why is there no apparent direct interaction between subjective realities? An idealist reading of the Anthropic Principle leads to a Kesten tree of consistent stories. The Kesten tree's spine is identified as objective reality, with the bushes representing otherwise independent subjective realities. This solution's simplicity may have kept it hidden under conceptual clutter.

In the latter half of the previous century, physicists working in the materialist branch of science and philosophy articulated the Anthropic Principle. It says that the values of physical constants are what they are because that is what they need to be for there to be physicists telling stories about them. Stories are the central object in the idealist branch of science and philosophy. This Anthropic Principle is therefore a window from materialism into idealism.

In this work, I start with an entirely idealist version that I refer to here as the Heroic Anthropic Principle (HAP). HAP says that our experience, including our experienced science (which itself includes HAP), is that found in a special, consistent science fiction novel written by an author with infinite resources for storytelling (one who can crumple failed drafts and start over infinitely many times).

Our belief that our experience is told from a singular first-person point of view is the direct result of a common reasoning error: the conflation of experience with memory. We do not have memories of being others, therefore we believe we are a singular individual. Fixing this error dissolves the temptation to structure the plot a priori from a singular first-person point of view. I instead see the latter as a special case of a more general (and therefore less presumptive) tree structure that I adopt.

What's at each node? Every node carries a label (its state, record so far: events, facts, beliefs, etc.).

How does the tree grow? A fixed probability kernel K maps a parent node's label to a random finite multiset of child labels (possibly empty if the branch is forever halted). The same kernel K is applied at each node and independently across nodes.

What do I mean by consistent? K never produces a child label that contradicts the parent: *every child label must extend the parent's label*, i.e., when you “forget the new step,” you recover the parent's label exactly. Consistency means that the labels assigned to overlapping histories agree:

$$\forall \text{ edge } (p \rightarrow c): \text{Restrict}(f(c)) = f(p) \quad (1)$$

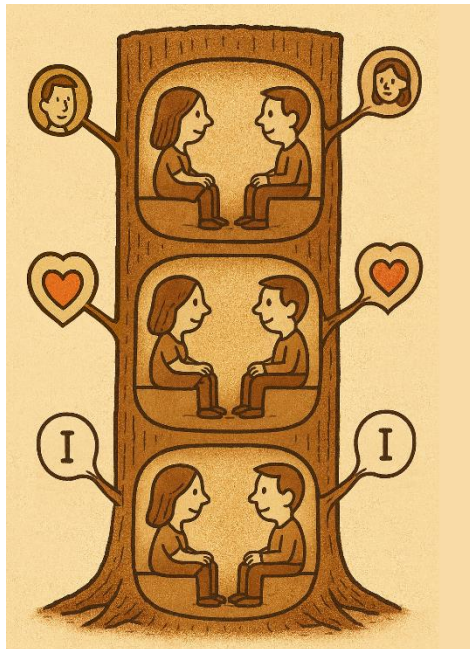


Figure 1: short love story told by a Kesten tree of consistent narratives

What do I mean by special trees? These are very rare trees. Let the mean number of child nodes, m , be ≤ 1 (critical/subcritical). The vast majority of trees halt after some large number of generations, n . Our infinitely resourced author crumples drafts of trees that halt after n generations, in the limit $n \rightarrow \infty$. The surviving draft is that of what is known as a Kesten tree: a tree with a singular immortal spine and many mortal bushes emanating from it¹.

Obvious interpretation: the singular immortal spine is so-called “objective reality” and the many mortal bushes are the many subjective realities (see Figure 1 for illustration). All bushes (subjective realities) overlap on nodes in the spine. By the consistency condition described above, this means that all subjective realities share the same objective reality. Apart from this shared objective reality, the subjective realities are separate and independent.

Starting from HAP and with minimal assumptions, this framework resolves two central challenges in idealism: explaining immortal shared reality and the lack of direct access

from one subjective reality to another.

¹ An *observer-weighted* formulation yields the same singular immortal spine and uses language closer to the original Anthropic Principle.