

From: *Preface to the Second Edition of “Book of why”* (To Appear December 20th 2026)

Worldviews, Mindsets, and Narratives: Hidden Nuggets of Causal Inference:

Readers often ask me to pin down the single most important contribution of causal inference to AI and to science in general. I have to pause for a moment, because there are so many precious nuggets to choose from, but I usually say, “The mathematization of counterfactuals.” (See Chapters 8-9.) Indeed, considering that counterfactuals are indispensable building blocks of scientific thinking, moral judgment and legal arguments (as explained in those chapters), the ability to capture this mode of thought in mathematical notation and infer consequences is an achievement that cannot be understated. I am mighty proud to be part of this development.

However, as I've gained experience in explaining *The Book of Why* to various audiences, I came to realize that there are other nuggets shining modestly throughout the book, whose importance to AI and scientific thought is perhaps even more universal than counterfactuals. I am referring here to the notion of “worldview,” also known as “mindset,” “narrative,” “belief-set,” “framework,” “paradigm,” and many other names that are at the foundation of many disciplines, from literature to politics to health science.

For now, I'll use the word “narrative.” A narrative frames reality and distinguishes data from their interpretations -- seeing from understanding. This is very reminiscent of what causal models do, since a causal model is a special form of a narrative, defined over variables. Other kinds of narratives may be defined in terms of interactions among agents, or distances between “possible worlds,” as in Chapter 8.

Two rational agents with different narratives, exposed to the same data, may easily clash in crucial decision-making situations. For a current example, consider the war in Gaza. The Palestinians view Israel as a white-settler project aimed at displacing them. The Israeli narrative, on the other hand, sees that same project as a homecoming endeavor— besieged and harassed by its neighbors' rockets. Religious wars represent an even more extreme case, where minute differences of mythological metaphors have led nations into centuries of death and destruction.

This book is replete with examples where different models of the world led scientists to different decisions, some beneficial and some misguided. Most of these examples focus on medical decision making. But to conclude this Preface, I want to emphasize the universality of the concept of “narrative,” and my realization that the mathematical machinery developed in the book constitutes a “mathematization of narratives,” not merely of counterfactuals, including narratives involving multiagents motivated by intricate webs of intentions and desires. The mathematical machinery can therefore be used to manage and understand the dynamics of narratives, their formation, mutation, propagation and implications, in a variety of fields. More importantly, the mathematization of narratives allows us to identify the testable implications of each narrative, to search systematically for evidence that would anchor beliefs to reality, and to explore tipping points where non-conforming evidence overturns a prevailing narrative, giving rise to a paradigm shift.