



A Natural History of the Future: What the Laws of Biology Tell Us about the Destiny of the Human Species. By Rob Dunn. 2021. Basic Books. (ISBN 9781541619302). 320 pp. Hardcover, \$30. E-book, audiobook, and trade paperback also available.

Recently, I attended a science museum fundraiser. It was an awkward experience for me: I don't enjoy conversations that can be squeezed into two minutes in a loud venue, and my economics training has left me with strong feelings about the relationship between commercial enterprise and charity. But my spouse was the event's keynote speaker, so I donned a suit and tried my best to smile and be nice.

During her speech, Kirstin asked everyone to draw instructions for making toast. She wanted to show the broad diversity of STEM-type thinking that people use in their day-to-day lives, even if they don't (yet!) identify as a scientist or engineer.

Ah, toast. I'd just read Rob Dunn's excellent *A Natural History of the Future*, which includes a charming (and chilling) anecdote about breadmaking. Bread needs

only flour, water, salt ... and a microscopic starter of yeast. In healthy ecosystems, yeast was easy to come by, and a bowl of dilute flour paste would bubble after a few days. But sometimes ancient civilizations experienced disaster: despite the process having worked for generations, people suddenly found that their breads would not rise, their beers would not ferment.

After accidentally altering their environment, people found that their old traditions could not survive. Civilizations collapsed, because everyone needs to eat.

All of this is to say that my schematic for drawing toast was both excessively pedantic—beginning with prehistoric people clearing the ground near patches of large-seeded grass, encouraging the evolution of wheat—and also emotionally grim—when too much land is devoted to a single species, we favor the organisms that prey upon it.

Which makes me think of the sprawling fields of soybeans that populate my home state. Many farms rely on a slim set of cultivars, which could be ruined by pesticide-resistant insects or viruses. But, actually, the most widespread monoculture in the modern world isn't soybeans, bananas, or wheat: it's human bodies.

With accessible language and crisp summaries of past studies, Dunn explains how we can use evolutionary thinking to make predictions about the future. Evolutionary selection enriches for traits that make organisms well-suited for their current environments, so we expect organisms whose preferred environments are expanding to flourish. Lice that live exclusively on the bodies of tigers are probably doomed; lice that snack on humans will find the future amazing.

While reading *A Natural History of the Future*, I often found myself thinking of David Deutsch's *The Beginning of Infinity* (which I didn't like at all!). Both these books begin from a premise of how little we currently know in comparison to the entirety of what could someday be known. But these two texts diverge radically in their recommendations.

Whereas *The Beginning of Infinity* counsels that we should, ahem, move fast and break stuff, trusting that our future descendants will have so much greater ability to fix things than we ever could (arguing, for instance, that environments on the planet Earth have always been hostile to human life and only technological progress has allowed us to survive), Dunn's *A Natural History of the Future* suggests that our current, incomplete knowledge is actually sufficient to instill a few general principles of caution about the ways we treat the world.

At the moment, I can make bread easily. My refrigerator has a jar of yeast. But at the beginning of the COVID-19 pandemic (caused by an enterprising stretch of DNA that likely left the land of bats for a home with greater opportunities), grocery stores were out of yeast around the country. The scaffolding that supports our current way of life is more fragile than we sometimes realize.

And the inside of my home—sealed from the environment, often cleaned with surfactant sprays—might not host healthy populations of wild yeast. My kids and I could check; they love conducting science experiments. We'd set a bowl of flour soup on the counter-top and wait. But my kids might have to console their father if I get sad about what we find.

Which might give you the impression that *A Natural History of the Future* would be a depressing read. It isn't; honestly, this is one of my favorite pop science books that I've read recently. I'd feel happy recommending it to any enterprising high schooler or college student, because in addition to lucid explanations and interesting anecdotes, Dunn offers a message of hope. We don't know everything, but we know enough to predict what could be coming. And if we're not pleased, then we can change.



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