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In “Collapse,” Jared Diamond shows how societies destroy themselves.

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A thousand years ago, a group of Vikings led by Erik the Red set sail from Norway for the vast Arctic landmass west of Scandinavia which came to be known as Greenland. It was largely uninhabitable—a forbidding expanse of snow and ice. But along the southwestern coast there were two deep fjords protected from the harsh winds and saltwater spray of the North Atlantic Ocean, and as the Norse sailed upriver they saw grassy slopes flowering with buttercups, dandelions, and bluebells, and thick forests of willow and birch and alder. Two colonies were formed, three hundred miles apart, known as the Eastern and Western Settlements. The Norse raised sheep, goats, and cattle. They turned the grassy slopes into pastureland. They hunted seal and caribou. They built a string of parish churches and a magnificent cathedral, the remains of which are still standing. They traded actively with mainland Europe, and tithed regularly to the Roman Catholic Church. The Norse colonies in Greenland were law-abiding, economically viable, fully integrated communities, numbering at their peak five thousand people. They lasted for four hundred and fifty years—and then they vanished.

The story of the Eastern and Western Settlements of Greenland is told in Jared Diamond’s “Collapse: How Societies Choose to Fail or Succeed” (Viking; \$29.95). Diamond teaches geography at U.C.L.A. and is well known for his best-seller “Guns, Germs, and Steel,” which won a Pulitzer Prize. In “Guns, Germs, and Steel,” Diamond looked at environmental and structural factors to explain why Western societies came to dominate the world. In “Collapse,” he continues that approach, only this time he looks at history’s losers—like the Easter Islanders, the Anasazi of the American Southwest, the Mayans, and the modern-day Rwandans. We live in an era preoccupied with the way that ideology and culture and politics and economics help shape the course of history. But Diamond isn’t particularly interested in any of those things—or, at least, he’s interested in them only insofar as they bear on what to him is the far more important question, which is a society’s relationship to its climate and geography and resources and neighbors. “Collapse” is a book about the most prosaic elements of the earth’s ecosystem—soil, trees, and water—because societies fail, in Diamond’s view, when they mismanage those environmental factors.

There was nothing wrong with the social organization of the Greenland settlements. The Norse built a functioning reproduction of the predominant northern-European civic model of the time—devout, structured, and reasonably orderly. In 1408, right before the end, records from the Eastern Settlement dutifully report that Thorstein Olafsson married Sigrid Bjornsdotter in Hvalsey Church on September 14th of that year, with Brand Halldorston, Thord Jorundarson, Thorbjorn Bardarson, and Jon Jonsson as witnesses, following the proclamation of the wedding banns on three consecutive Sundays.

The problem with the settlements, Diamond argues, was that the Norse thought that Greenland really was green; they treated it as if it were the verdant farmland of southern Norway. They cleared the land to create meadows for their cows, and to grow hay to feed their livestock through the long winter. They chopped down the forests for fuel, and for the construction of wooden objects. To make houses warm enough for the winter, they built their homes out of six-foot-thick slabs of turf, which meant that a typical home consumed about ten acres of grassland.

But Greenland's ecosystem was too fragile to withstand that kind of pressure. The short, cool growing season meant that plants developed slowly, which in turn meant that topsoil layers were shallow and lacking in soil constituents, like organic humus and clay, that hold moisture and keep soil resilient in the face of strong winds. "The sequence of soil erosion in Greenland begins with cutting or burning the cover of trees and shrubs, which are more effective at holding soil than is grass," he writes. "With the trees and shrubs gone, livestock, especially sheep and goats, graze down the grass, which regenerates only slowly in Greenland's climate. Once the grass cover is broken and the soil is exposed, soil is carried away especially by the strong winds, and also by pounding from occasionally heavy rains, to the point where the topsoil can be removed for a distance of miles from an entire valley." Without adequate pastureland, the summer hay yields shrank; without adequate supplies of hay, keeping livestock through the long winter got harder. And, without adequate supplies of wood, getting fuel for the winter became increasingly difficult.

The Norse needed to reduce their reliance on livestock—particularly cows, which consumed an enormous amount of agricultural resources. But cows were a sign of high status; to northern Europeans, beef was a prized food. They needed to copy the Inuit practice of burning seal blubber for heat and light in the winter, and to learn from the Inuit the difficult art of hunting ringed seals, which were the most reliably plentiful source of food available in the winter. But the Norse had contempt for the Inuit—they called them *skraelings*, "wretches"—and preferred to practice their own brand of European agriculture. In the summer, when the Norse should have been sending ships on lumber-gathering missions to Labrador, in order to relieve the pressure on their own forestlands, they instead sent boats and men to the coast to hunt for walrus. Walrus tusks, after all, had great trade value. In return for those tusks, the Norse were able to acquire, among other things, church bells, stained-glass windows, bronze candlesticks, Communion wine, linen, silk, silver, churchmen's robes, and jewelry to adorn their massive cathedral at Gardar, with its three-ton sandstone building blocks and eighty-foot bell tower. In the end, the Norse starved to death.

Diamond's argument stands in sharp contrast to the conventional explanations for a society's collapse. Usually, we look for some kind of cataclysmic event. The aboriginal civilization of the Americas was decimated by the sudden arrival of smallpox. European Jewry was destroyed by Nazism. Similarly, the disappearance of the Norse settlements is usually blamed on the Little Ice Age, which descended on Greenland in the early fourteen-hundreds, ending several centuries of relative warmth. (One archeologist refers to this as the "It got too cold, and they died" argument.) What all these explanations have in common is the idea that civilizations are destroyed by forces outside their control, by acts of God.

But look, Diamond says, at Easter Island. Once, it was home to a thriving culture that produced the enormous stone statues that continue to inspire awe. It was home to dozens of species of trees, which created and protected an ecosystem fertile enough to support as many as thirty thousand people. Today, it's a barren and largely empty outcropping of volcanic rock. What happened? Did a rare plant virus wipe out the island's forest cover? Not at all. The Easter Islanders chopped their trees down, one by one, until they were all gone. "I have often asked myself, 'What did the Easter Islander who cut down the last palm tree say while he was doing it?'" Diamond writes, and that, of course, is what is so troubling about the conclusions of "Collapse." Those trees were felled by rational actors—who must have suspected that the destruction of this resource would result in the destruction of their civilization. The lesson of "Collapse" is that societies, as often as not, aren't murdered. They commit suicide: they slit their wrists and then, in the course of many decades, stand by passively and watch themselves bleed to death.

This doesn't mean that acts of God don't play a role. It did get colder in Greenland in the early fourteen-hundreds. But it didn't get so cold that the island became uninhabitable. The Inuit survived long after the Norse died out, and the Norse had all kinds of advantages, including a more diverse food supply, iron tools, and ready access to Europe. The problem was that the Norse simply couldn't adapt to the country's

changing environmental conditions. Diamond writes, for instance, of the fact that nobody can find fish remains in Norse archeological sites. One scientist sifted through tons of debris from the Vatnahverfi farm and found only three fish bones; another researcher analyzed thirty-five thousand bones from the garbage of another Norse farm and found two fish bones. How can this be? Greenland is a fisherman's dream: Diamond describes running into a Danish tourist in Greenland who had just caught two Arctic char in a shallow pool with her bare hands. "Every archaeologist who comes to excavate in Greenland . . . starts out with his or her own idea about where all those missing fish bones might be hiding," he writes. "Could the Norse have strictly confined their munching on fish to within a few feet of the shoreline, at sites now underwater because of land subsidence? Could they have faithfully saved all their fish bones for fertilizer, fuel, or feeding to cows?" It seems unlikely. There are no fish bones in Norse archeological remains, Diamond concludes, for the simple reason that the Norse didn't eat fish. For one reason or another, they had a cultural taboo against it.

Given the difficulty that the Norse had in putting food on the table, this was insane. Eating fish would have substantially reduced the ecological demands of the Norse settlements. The Norse would have needed fewer livestock and less pastureland. Fishing is not nearly as labor-intensive as raising cattle or hunting caribou, so eating fish would have freed time and energy for other activities. It would have diversified their diet.

Why did the Norse choose not to eat fish? Because they weren't thinking about their biological survival. They were thinking about their cultural survival. Food taboos are one of the idiosyncrasies that define a community. Not eating fish served the same function as building lavish churches, and doggedly replicating the untenable agricultural practices of their land of origin. It was part of what it meant to be Norse, and if you are going to establish a community in a harsh and forbidding environment all those little idiosyncrasies which define and cement a culture are of paramount importance. "The Norse were undone by the same social glue that had enabled them to master Greenland's difficulties," Diamond writes. "The values to which people cling most stubbornly under inappropriate conditions are those values that were previously the source of their greatest triumphs over adversity." He goes on:

To us in our secular modern society, the predicament in which the Greenlanders found themselves is difficult to fathom. To them, however, concerned with their social survival as much as their biological survival, it was out of the question to invest less in churches, to imitate or intermarry with the Inuit, and thereby to face an eternity in Hell just in order to survive another winter on Earth.

Diamond's distinction between social and biological survival is a critical one, because too often we blur the two, or assume that biological survival is contingent on the strength of our civilizational values. That was the lesson taken from the two world wars and the nuclear age that followed: we would survive as a species only if we learned to get along and resolve our disputes peacefully. The fact is, though, that we can be law-abiding and peace-loving and tolerant and inventive and committed to freedom and true to our own values and still behave in ways that are biologically suicidal. The two kinds of survival are separate.

Diamond points out that the Easter Islanders did not practice, so far as we know, a uniquely pathological version of South Pacific culture. Other societies, on other islands in the Hawaiian archipelago, chopped down trees and farmed and raised livestock just as the Easter Islanders did. What doomed the Easter Islanders was the interaction between what they did and where they were. Diamond and a colleague, Barry Rollet, identified nine physical factors that contributed to the likelihood of deforestation—including latitude, average rainfall, aerial-ash fallout, proximity to Central Asia's dust plume, size, and so on—and Easter Island ranked at the high-risk end of nearly every variable. "The reason for Easter's unusually severe degree of deforestation isn't that those seemingly nice people really were unusually bad or improvident," he concludes. "Instead, they had the misfortune to be living in one of the most fragile environments, at the highest risk for deforestation, of any Pacific people." The problem wasn't the Easter Islanders. It was Easter Island.

In the second half of "Collapse," Diamond turns his attention to modern examples, and one of his case

studies is the recent genocide in Rwanda. What happened in Rwanda is commonly described as an ethnic struggle between the majority Hutu and the historically dominant, wealthier Tutsi, and it is understood in those terms because that is how we have come to explain much of modern conflict: Serb and Croat, Jew and Arab, Muslim and Christian. The world is a cauldron of cultural antagonism. It's an explanation that clearly exasperates Diamond. The Hutu didn't just kill the Tutsi, he points out. The Hutu also killed other Hutu. Why? Look at the land: steep hills farmed right up to the crests, without any protective terracing; rivers thick with mud from erosion; extreme deforestation leading to irregular rainfall and famine; staggeringly high population densities; the exhaustion of the topsoil; falling per-capita food production. This was a society on the brink of ecological disaster, and if there is anything that is clear from the study of such societies it is that they inevitably descend into genocidal chaos. In "Collapse," Diamond quite convincingly defends himself against the charge of environmental determinism. His discussions are always nuanced, and he gives political and ideological factors their due. The real issue is how, in coming to terms with the uncertainties and hostilities of the world, the rest of us have turned ourselves into cultural determinists.

For the past thirty years, Oregon has had one of the strictest sets of land-use regulations in the nation, requiring new development to be clustered in and around existing urban development. The laws meant that Oregon has done perhaps the best job in the nation in limiting suburban sprawl, and protecting coastal lands and estuaries. But this November Oregon's voters passed a ballot referendum, known as Measure 37, that rolled back many of those protections. Specifically, Measure 37 said that anyone who could show that the value of his land was affected by regulations implemented since its purchase was entitled to compensation from the state. If the state declined to pay, the property owner would be exempted from the regulations.

To call Measure 37—and similar referendums that have been passed recently in other states—intellectually incoherent is to put it mildly. It might be that the reason your hundred-acre farm on a pristine hillside is worth millions to a developer is that it's on a pristine hillside: if everyone on that hillside could subdivide, and sell out to Target and Wal-Mart, then nobody's plot would be worth millions anymore. Will the voters of Oregon then pass Measure 38, allowing them to sue the state for compensation over damage to property values caused by Measure 37?

It is hard to read "Collapse," though, and not have an additional reaction to Measure 37. Supporters of the law spoke entirely in the language of political ideology. To them, the measure was a defense of property rights, preventing the state from unconstitutional "takings." If you replaced the term "property rights" with "First Amendment rights," this would have been indistinguishable from an argument over, say, whether charitable groups ought to be able to canvass in malls, or whether cities can control the advertising they sell on the sides of public buses. As a society, we do a very good job with these kinds of debates: we give everyone a hearing, and pass laws, and make compromises, and square our conclusions with our constitutional heritage—and in the Oregon debate the quality of the theoretical argument was impressively high.

The thing that got lost in the debate, however, was the land. In a rapidly growing state like Oregon, what, precisely, are the state's ecological strengths and vulnerabilities? What impact will changed land-use priorities have on water and soil and cropland and forest? One can imagine Diamond writing about the Measure 37 debate, and he wouldn't be very impressed by how seriously Oregonians wrestled with the problem of squaring their land-use rules with their values, because to him a society's environmental birthright is not best discussed in those terms. Rivers and streams and forests and soil are a biological resource. They are a tangible, finite thing, and societies collapse when they get so consumed with addressing the fine points of their history and culture and deeply held beliefs—with making sure that Thorstein Olafsson and Sigrid Bjornsdotter are married before the right number of witnesses following the announcement of wedding banns on the right number of Sundays—that they forget that the

pastureland is shrinking and the forest cover is gone.

When archeologists looked through the ruins of the Western Settlement, they found plenty of the big wooden objects that were so valuable in Greenland—crucifixes, bowls, furniture, doors, roof timbers—which meant that the end came too quickly for anyone to do any scavenging. And, when the archeologists looked at the animal bones left in the debris, they found the bones of newborn calves, meaning that the Norse, in that final winter, had given up on the future. They found toe bones from cows, equal to the number of cow spaces in the barn, meaning that the Norse ate their cattle down to the hoofs, and they found the bones of dogs covered with knife marks, meaning that, in the end, they had to eat their pets. But not fish bones, of course. Right up until they starved to death, the Norse never lost sight of what they stood for. ✦