INTRODUCTION

Beyond One Concept of Scarcity

Seen from outer space, the global economy is imperceptible. To the naked eye, even the most ambitious engineering project loses definition and dissolves into earth, oceans, and sky. The roads and railways, factories, and suburbs all seem to vanish without a trace. Only on the night side of the earth does the modern economy come into view: millions of lights joined together in a planetary luminescence.

Lights alone do not tell the whole story, of course. To take in the planetary impact of the global economy, other forms of observation are necessary. Hundreds of monitoring stations across the world now map the impact of economic growth on the carbon cycle. No physical trend of the last century has had a more profound effect than the accumulation of greenhouse gases. In the atmosphere, carbon dioxide forms a trace gas of miniscule proportions, yet this tiny chemical fluctuation turns out to have calamitous consequences for the climate system over time. Since the nineteenth century, greenhouse gas emissions from manufacturing and other energy-intensive sectors have begun to nudge the earth system toward a new state. Humanity has left the relatively stable climate of

the Holocene epoch and entered a new stage in the history of the planet, provisionally named the Anthropocene.[1]

The cumulative effect of all our economic actions casts a shadow across the atmosphere, locking in heat in the biosphere and thereby raising the annual mean temperature of the planet. This is the consequence of a highly peculiar phenomenon: exponential economic growth. For 99.9993 percent of the time that *Homo sapiens* has lived on earth, there was no sustained economic growth at all. Only in the last two, maybe three, centuries has economic growth become a natural part of human life—a seemingly unequivocal good essential to the thriving of humanity. Present generations find it difficult even to conceive of the world without the concept of economic growth. Since the seventeenth century, scientist and engineers have become more and more confident in their ability to control the natural world. Yet this new power is terrifyingly partial and perhaps far more blind than we realize. While humans have learned to split the atom, manipulate the genome, and put people on the moon, they have also inadvertently produced pollution and biodiversity loss on a planetary scale. The seventeenth-century project to control nature has given rise to a series of nightmarish side effects that are now jeopardizing the very conditions that have enabled the emergence of complex societies. Global environmental change is putting the future of the human species at risk.[2]

To address these problems, capitalist societies have to change the way they interact with the planetary environment. We need to alter the way we think about the economy and nature, as well as the relationship between the two. For the better part of the last century, much of our approach has been grounded in modern neoclassical economics and its fundamental axiom of scarcity. Because human desire for consumption is assumed to be insatiable and nature is by definition finite, economists reason that all humans and firms are forced to make tradeoffs to maximize their happiness and profits. This means that, at any given moment, economic actors seek to make the most efficient use of natural resources and, over time, they strive to develop science and technology to engender as much economic growth as possible. If, in this process, natural resources start running low, economists predict that entrepreneurs aided by new science will respond to higher prices and develop substitutes. The conception of nature as scarce, yet capable of infinite improvement and infinite

substitutability, has proven remarkably effective in promoting economic growth and ever-expanding consumption. Yet this conception of scarcity is also at the heart of the planetary crisis we now face.

For some time now, scientists have warned of sweeping, systemic changes to the earth system caused by fossil fuel economies and overconsumption. Anthropogenic climate change is the best-known threat. Greenhouse gases are pushing the planet toward new extremes of heat, humidity, drought, and flood. These changes will likely lead to a decline in agricultural productivity in key regions. Global warming will cause sea levels to rise, threatening densely populated coastal areas that are particularly vulnerable to rising seas. Oceanic ecosystems are also under increasing strain. Acidification threatens vital biota like coral reefs and phytoplankton. Closely linked to climate change is the trend of rising extinction rates. Climate deterioration and land-use change are rapidly reducing the terrestrial biodiversity that underpins the proper functioning of ecosystems and human economies. As if this were not bad enough, chemical pollution also poses unprecedented risks to the planetary environment and human well-being. Meanwhile, modern agriculture produces excess flows of nitrogen and phosphorus that damage the health of waterways and coastal ecosystems. Industrial agriculture and land clearance also appear to accelerate the emergence of new pathogens like COVID-19. With so many interrelated and escalating threats, capitalist societies appear to have reached a breaking point. Without fundamental transformation, humanity confronts planetary disaster.[3] We are therefore left with no other option than to reconsider fundamentally how we organize our economy.

To create an economy for the future, we need novel ways of thinking. To develop new ideas, we need to understand the past. This book condenses five hundred years of debates about the relationship between nature and economy, surveying how philosophers, political theorists, and economists in the past have conceived of this relationship. While historians often point out that knowing history prevents us from repeating it, we believe, more ambitiously, that historical knowledge not only allows us to avoid repetition but provides us with a shared understanding that can help us construct a better future. We hope that readers of this book, by gaining a better sense of how people in the past have conceived of the nature-economy nexus, will be inspired to think imaginatively

about alternatives to the neoclassical idea of scarcity. We need to move toward an economy that is capable of meeting human needs at the same time that it allows for the earth system to operate in a manner that favors both human flourishing and the diversity of nonhuman life.

Although focused on the concept of scarcity, the centerpiece of modern economics, this book is not written from within the discourse of neoclassical economics. Rather, it locates economic thinking in a much broader historical context. We hope that many scholars, including anthropologists, historians, sociologists, political scientists, and economists, will find our historical approach useful. Our main purpose, however, is to reach concerned global citizens intent on pursuing solutions to the looming planetary crisis. Much of the argument here took shape in the classroom as we debated these ideas with undergraduates. We have written the book with students and other young people in mind, trying to make our ideas as accessible as possible, even to newcomers to intellectual history.

Varieties of Scarcity

The past is filled with different ways of thinking about scarcity. Since the sixteenth century, an array of philosophers, political theorists, economic theorists, even novelists and poets, have sought to identify and articulate the "ideal" relationship between nature and the economy. In their writings, we find a diverse set of ideas about scarcity: its sources, its implications, and its demands on human actors. The organization of this book reflects what we consider to be major trends and shifts in the evolution of these historical conceptions. Moving roughly chronologically through the centuries to our present day, each chapter identifies past ideas of scarcity that emerged in contemporary writings about the nature-economy relationship. To make sense of these different intellectual currents, we have grouped ideas that are closely related under a common rubric. Our names for these types of scarcity are not necessarily actor's categories—that is to say, they were not used by people in the past. Yet by categorizing and naming these past versions of scarcity, we have put together a rich and long-term history of a concept that today is all too often considered synonymous with neoclassical economics. The modern neoclassical conception of scarcity emerged only in the 1870s. Prior to that moment, people understood the nature-economy nexus in many different ways. We seek to make clear

that scarcity itself can and should be liberated from its connotations in modern economics.

While this book names several distinct historical conceptions of scarcity, most ultimately fall within one of two umbrella categories. *Cornucopian* ideologies include a series of ideas that endorse an active mastery of nature together with a dynamic and expansive notion of desire. All versions of Cornucopianism are rooted in optimism that nature's resources, however limited, can be extended infinitely by humans—although as we will see, they often differ on how exactly to improve nature's bounty and how expansively to embrace human desires. The category of Cornucopian ideologies includes what we call Cornucopian Scarcity, Enclosure Scarcity, Enlightened Scarcity, Capitalist Scarcity, and Neoclassical Scarcity. This tradition first emerged in the seventeenth century and eventually reached a dominant position by the end of the nineteenth century. As an intellectual current, Cornucopianism has helped push us headlong down our current path of ever-expanding economic growth and planetary crises.

The category of *Finitarian* scarcity, meanwhile, emphasizes the limits to human power over nature and the need for constraint and moderation of human desires. As we shall see, the Finitarian ideologies featured in this book variously perceive the reasons for these limits and offer different approaches to constraining human desires. But at their base, these ideologies are rooted in the fundamental belief that nature's abundance is finite—and that human desires must be curbed to maintain a balance between nature and economy. The category of Finitarian ideologies consists of what we term Neo-Aristotelian Scarcity, Utopian Scarcity, Malthusian Scarcity, Romantic Scarcity, Socialist Scarcity, and Planetary Scarcity. We note that Enclosure Scarcity and Socialist Scarcity can be understood as composites of Finitarian and Cornucopian forms.

Although the Romantic and Socialist versions of scarcity have had a powerful and recurring influence over culture and politics, only their sixteenth-century predecessor, Neo-Aristotelian Scarcity, achieved cultural hegemony in the West. Finitarianism therefore primarily represents a history of resistance and aspiration rather than dominance. Yet we would be remiss to underestimate Finitarianism's intellectual force, which drives not only its ability to attract devoted adherents, but also its power to stimulate creative thinking about alternative futures.

Finitarian and Cornucopian worldviews developed side by side in mutual opposition. Conflict bonded them together, such that each side defined itself by rejecting the other. Because they sought to answer the same question—are there limits to economic growth?—they often ended up feeding on each other, generating rival forecasts of the future and competing conceptions of the public good. The intellectual currents we examine in this book demonstrate how Finitarianism and Cornucopianism emerged as oppositional intellectual frameworks. We might think of their development as a form of family feud inherited from one generation to another, always locked in battle, but producing new grievances and new areas of conflict over time. The fear of limits to economic growth provoked optimistic visions of abundance, which in turn came under attack by critics. Of course, this conflict did not happen in a material vacuum. Both sides looked to the natural world and technology to justify their positions: where Cornucopians celebrated the bounty of natural resources, the power of human ingenuity, and the insatiability of desires, Finitarians emphasized limits, unintended consequences, and simple needs.

Nearly all of the ideas of scarcity that we examine in this book are part of the system of *capitalism*. Capitalism, although difficult to define as it assumes so many different forms across time and space, we take to be a social system that emerged for the first time in Europe during the early modern era (circa 1500–1800). The capitalist order is based on the institutions of private property, markets, money, profits, capital, corporations, and wage labor. Some of these institutions can be found in earlier social systems, but when we add that, in capitalism, competition, entrepreneurship, consumerism, colonization, commodification, specialization, and scientific progress serve the larger purpose of capital accumulation, we inch closer to a robust definition. We also need to include a centralized state that is capable of intervening, regulating, and legislating in a manner that promotes the expansion and stability of capitalism. All of these characteristics do not have to be simultaneously present for us to view a society as capitalist—after all, capitalism contains both free and enslaved labor, free competition and monopolies, private and public property, free trade and protectionism, democratic and authoritarian states. Yet, the fewer of these institutions a society contains, the further away from capitalism it drifts. We can also define capitalism by looking for its ecological footprint. Capitalist accumulation requires intensifying exploitation of the local and

global environment through processes of commodification, extraction, and scientific management. Lastly, we need to take seriously capitalism's capacious ideological apparatus, with room for numerous conflicting ideologies. Without able intellectual defenders, capitalism could never have become a dominant social and political force in the world.

Five Hundred Years of Scarcity

To understand how the rivalry between Cornucopian and Finitarian forms of scarcity emerged, we must begin by considering the notions of limits and abundance in preindustrial societies. Prior to the age of capitalism, the nature-economy nexus was conceived of in a variety of ways. Anthropologists have found evidence of hunter-gatherers enjoying "affluence without abundance."[4] Paleolithic foragers did not have much, but because their wants were small, they always had more than they needed. Only in the aftermath of the Neolithic Revolution, when new institutions emerged based on centralized power and sedentary populations, did the view of nature and desire shift. The formation of agricultural societies was made possible by the interglacial epoch known as the Holocene which began 11,700 years ago. While the early Holocene was considerably warmer than the last few millennia, the trend overall was toward relative stability. Carbon dioxide levels in the atmosphere during the Holocene varied between 260 and 285 parts per million while the temperature shifted only very little, about one degree Celsius up or down from the global average. Internal variations like the Roman and Medieval Warm Period or the drop in temperatures during the seventeenth-century Little Ice Age were trifling compared to the great cycles of the Pleistocene. This relative stability of climate allowed agricultural societies to rely on predictably recurring cycles and flows within the organic economy.[5]

In agrarian societies, people began to conceive of the social order as a steady oscillation between physical scarcity and material plenty. The biblical notion of seven good years followed by seven years of famine captured the prevailing fatalism. The word *scarsete* or *skarcete* first appeared in Middle English during the fourteenth century as a loan from the Old French *escharseté*.[6] During this period scarcity referred specifically to the insufficient supply of necessities to feed the common people. It was an earthly phenomenon, produced by bad weather and harvest failures. When

dearth proved persistent, it led to subsistence crisis and mass death, unless societies maintained emergency supplies.

Even during years of relatively abundant harvests, there was a general sense of finitude. Along with these material constraints, a moral imperative to curb human appetites also emerged. According to the Christian worldview of the sixteenth century, as we show in Chapter 1, the relationship between human desires and nature was conceived as a delicate balance of limitations. Religious doctrine made it clear that pious people never let their desire for pleasure, of any kind, run amok. When kept within socially and spiritually circumscribed limits, desires could exist in harmony with nature's limited yield. People were expected to respect the inherent restrictions of nature and make do with the little they had. It is thus in sixteenth-century Europe that we locate the earliest Finitarian model, and the only one to achieve any kind of cultural hegemony: Neo-Aristotelian Scarcity. Losing control over one's desires was, as Aristotle had said long ago, tantamount to losing one's humanity. Yet even in the 1500s, these ideas about human desire were challenged by a growing culture of commerce and enclosure that spurred critiques and alternatives from the likes of Thomas More and Martin Luther.

A radically new Cornucopian way of conceiving of the relationship between nature and the economy emerged in the seventeenth century, starting the slow and circuitous route toward the modern neoclassical concept of scarcity. As Chapter 2 shows, the natural philosopher and politician Francis Bacon popularized the idea that humanity could, with the aid of scientific knowledge, bring nature under control and force it to share its dormant riches. Bacon's disciple, Samuel Hartlib, praised nature as an infinite treasure, capable of giving rise to earthly abundance. Soon thereafter, the economic writer, fire-insurance entrepreneur, and London real estate tycoon Nicholas Barbon endorsed insatiable desires as not only natural, but also socially beneficial. In contrast with the traditional notion of harmonious limitations, scarcity was now seen as the product of intertwining infinities: the endless human desire for consumption and infinitely expandable nature. We describe these ideas collectively as Cornucopian Scarcity, reflecting their position as progenitors of later Cornucopian ideologies that developed across the ensuing centuries. Unlike its sixteenth-century predecessors, Cornucopian Scarcity legitimized boundless wants as the force that—supported by scientific

advances—would propel the infinite improvement of nature and hence infinite human progress.

Paradoxically, Bacon and Hartlib's dream of godlike power took shape in the midst of the Little Ice Age, when mean temperatures in Europe decreased by one degree Celsius. While we do not have a full picture of how climate deterioration challenged seventeenth-century society, we know that Hartlib and his circle sprang to action during the harsh winters and near-famine conditions of the 1640s and 1650s. Like most people in the period, they regarded the relationship between the economic order and the climate as interdependent. If the landscape could be brought under scientific control, "savage" nature would become "civilized."[7] Writing in the following century, the Scottish Enlightenment philosopher David Hume explained, according to the logic of the day, that the warming trend was the result of the fact that "the land is at present much better cultivated, and that the woods are cleared, which formerly threw a shade upon the earth, and kept the rays of the sun from penetrating to it."[8]

If the seventeenth century witnessed a radically new form of thinking about nature and economy, the eighteenth century—the focus of Chapter 3—emphasized gradual progress. While much of the previous century's optimism survived, Enlightenment-era thinkers were not quite as enamored with the ideas of infinite human desire and endlessly bountiful nature. David Hume, Daniel Defoe, and Adam Smith, among others, argued that nature could provide great—but perhaps not endless—wealth. For example, Hume suggested that nature was always scarce but that it was possible, through industriousness and scientific progress, to slowly extend its boundaries. As long as human creativity remained vibrant, there were no absolute limits to growth. Enlightenment-era thinkers were also more inclined to believe that humans, while drawn to consumption, should temper their selfish desires. Hume argued that commercial civilization, political liberty, and liberal education would refine and redirect human desires onto a higher plane. Civilized people would become more prone to poetry and philosophy than to rampant consumption of luxuries. The Enlightenment version of scarcity therefore envisioned an incremental curtailment of initially strong desires for material affluence and a gradual, scientifically engineered, expansion of nature's bounty. This was a more sensible and measured form of Cornucopianism, in which the future held the promise of a partial easing of the yoke of scarcity.

While the Hartlibians and Hume opened a path for the modern notion of scarcity, there were contemporary voices who objected to the ideology of infinite growth and infinite consumption. During the seventeenth century, the anti-Enclosure militant Gerrard Winstanley put forth a radical critique of property and money, arguing that they polarized society and drove a wedge between rich and poor. Winstanley saw scarcity as a universal condition, experienced even during moments of abundant harvests and economic flourishing, with the rich constantly striving for more and the poor always fearing starvation—a condition we will call Enclosure Scarcity. Winstanley was responding to the violence of the enclosures—the first crucial step in agrarian capitalism whereby the land was transformed from a shared space of common use and existential meaning to an economic resource accumulated in the hands of the few. About a century later, a philosophical contrarian from Geneva, Jean-Jacques Rousseau, argued that the constant desire for consumption had contaminated the social fabric. Everything in society and nature had become subjugated to the quest for trivial luxuries, resulting in the corruption of the good life. Insatiable desires, infinite growth, and perpetual scarcity, Winstanley and Rousseau argued, were social constructs that had a beginning and should have an end. They each formulated their own Finitarian vision of the world.

The full flourishing of the Industrial Revolution in the nineteenth century fostered a new wave of Finitarian notions of scarcity. Chapter 4 examines the Romantic writers who launched a systematic rethinking of both human desire and nature. These thinkers imagined a world in which people were motivated by beauty and community rather than consumption, and treated nature as the spiritual center of human life. What we call Romantic Scarcity embraced human restraint and material simplicity that respected the finite resources and the transcendental value of the natural world. At the same time, Thomas Robert Malthus pessimistically argued that the needs of a geometrically growing population would soon outstrip the agricultural yield, since the latter could grow only at an arithmetic rate. Disease, war, and famine would cull the surplus population until, after much suffering, the excess numbers were brought back into balance with a strictly circumscribed natural world. As Chapter 5 shows, Malthusian Scarcity held that the world's finite supply of land placed immovable physical limitations on human growth.

The revolutionary changes underway in the nineteenth century also sparked Karl Marx's radical critique of both the Enlightenment and Malthusian versions of scarcity. Marx argued that scarcity was driven not by the boundless desire for consumption but rather by industrial capitalists' incessant pursuit of capital accumulation. He shifted the blame for scarcity from humanity in general to the emerging industrial capitalist class, who constantly sought to impose labor on the working classes not primarily to enjoy the fruits thereof but to reproduce their dominance. Since the incessant force driving the capitalists, as a class, was the reproduction of command and control, we call it Capitalist Scarcity. Together with other radicals, such as Robert Owen and Charles Fourier, Marx envisioned an alternative future, one based on an entirely different relationship between nature and the economy. They looked forward to a world in which technology would produce an abundance of material wealth to satisfy all basic needs, while liberation from capitalist domination would free people to pursue the full spectrum of human passions, not just those that could be satisfied through consumption. Whereas Malthus identified the sources of scarcity in the clash between the earth's physical limits and the insatiability of collective human desire, the originators of what we call Socialist Scarcity saw the future as the interplay between a needs-based economy and the scientifically driven mastery of nature.

After the disruption of the Little Ice Age, the climate of the northern hemisphere grew more favorable during the Enlightenment and the nineteenth century. This warm spell coincided with the wide-ranging adoption of fossil fuel, first in Britain and then across the West. A geological endowment, stored up over millions of years, enabled a quantum leap in energy use during the nineteenth and twentieth centuries. Yet precisely this windfall also disrupted the carbon cycle that controls the planetary climate. By unleashing carbon dioxide into the atmosphere on a scale never seen before, the new fossil fuel economy brought the Holocene epoch to an end. Carbon dioxide levels indicate clearly that this shift had happened already by the end of the nineteenth century, just as socialist theorists and marginalist economists launched their rival bids to remake the world.[9]

Marx's vision of an overthrow of existing social relations shook the European bourgeoisie to the core. Liberal thinkers set out to develop an alternative ideology, one that put capitalism in a more favorable light.

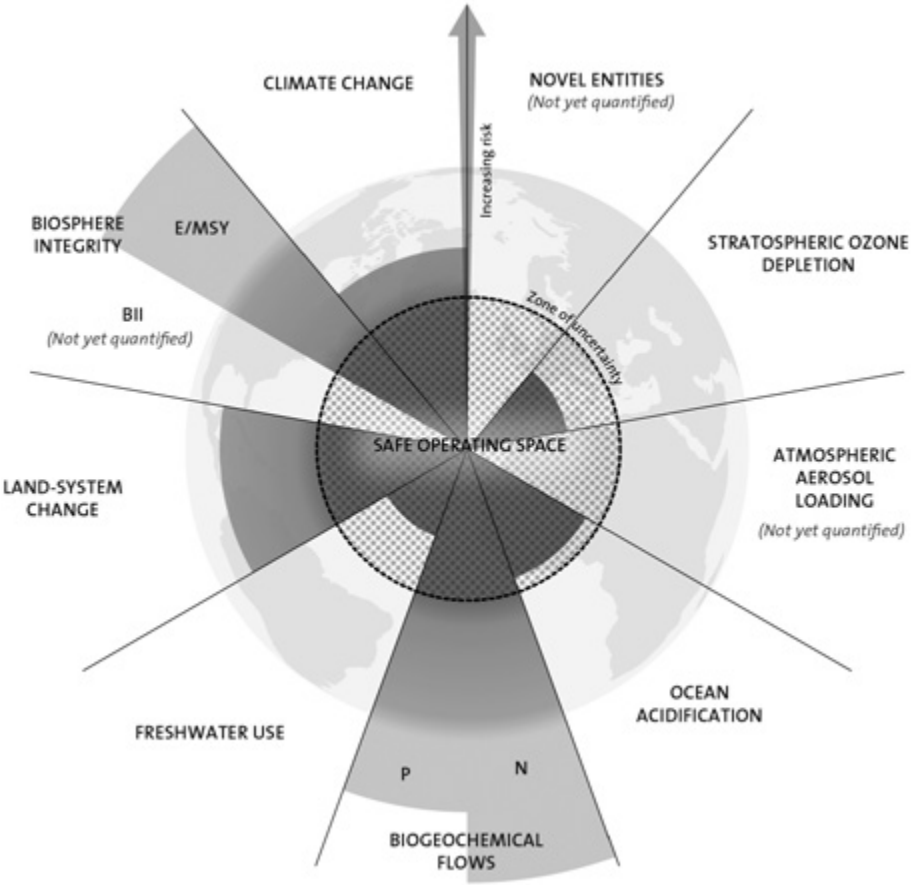
Nearly simultaneously, William Stanley Jevons, Léon Walras, and Carl Menger developed what would become modern neoclassical economics. The version of scarcity at the heart of the new economic discourse that they pioneered had very little to do with either the problem of poverty or the challenge of resource exhaustion. Instead, their version of scarcity, explored in Chapter 7, was a philosophical conjecture that originated in the assumption of insatiable human wants and infinite substitutability on the one hand, and on the other hand, the fact that all resources are by definition finite. They all argued that, while people who experienced poverty or confronted dwindling natural resources certainly faced scarcity, their experiences differed only by degree from those of everyone else. Without tapping into the scholarship in anthropology or psychology, economists alleged that people everywhere confronted the same universal condition of scarcity. This textbook example makes their position clear: "Small bands of African Bushmen face it; so do Amazon Indians and Greenland Eskimos. Peasants in China, Egypt, and Peru suffer from it; so do urban dwellers in Moscow, Paris, and New York. All of them, every day, wrestle with the basic economic problem of scarcity."[10] To be human thus means to be involved in the Sisyphean task of constantly striving for abundance in the context of inescapable scarcity. Regardless of how much wealth is attained or how it is distributed, the nagging desire for more never goes away. This version of Cornucopianism was systematized and popularized by the neoclassical economists, starting with the London School of Economics professor Lionel Robbins. "We have been turned out of Paradise," he began. "We have neither eternal life nor unlimited means of gratification. Everywhere we turn, if we choose one thing we must relinquish others." Robbins concluded: "Scarcity of means to satisfy ends of varying importance is an almost ubiquitous condition of human behavior."[11] It is one of history's many ironies that at the same time that the West enjoyed a golden age of unprecedented affluence (1945–1975), scarcity became the centerpiece of economic analysis.

In the twentieth century, fossil fuel–induced economic growth gathered further momentum as petroleum and natural gas facilitated the development of new technologies, from international air travel to synthetic fertilizer. The sustained boom after World War II led to an escalation of carbon emissions, increasing the level of atmospheric carbon dioxide from 311 parts per million (ppm) in 1950 to 331 ppm in 1975. Cheap energy ush-

ered in unprecedented affluence in the advanced economies of the world, but also set the planet on the path toward multiple tipping points. By the end of the twentieth century, the new, interdisciplinary field of earth system science illuminated the risks created by runaway growth to the stability of the system. The discovery of ozone depletion in the 1980s brought home to a stunned world how seemingly trivial forms of consumption could lead to planetary danger. Common household goods like refrigerator coolants and shaving cream posed a lethal threat to the safety of the biosphere. Around the same time, anthropogenic climate change entered into public awareness. More and more voices warned that the old dream of godlike power over nature had opened a Pandora's box of environmental horrors.

By the early twenty-first century, the dominant idea of Neoclassical Scarcity was on a collision course with a new understanding of the world: Planetary Scarcity, which we take up in Chapter 8. In 2000, the atmospheric chemist Paul Crutzen and the ecologist Eugene Stoermer coined the term Anthropocene to draw attention to the dramatic rupture in the history of the planet. Rapid economic growth based on fossil fuel use had forced the earth out of the Holocene and into a new geological epoch. From the beginning, the concept of the Anthropocene included a host of threats besides climate change. The Planetary Boundaries framework, devised by the environmental scientist Johan Rockström, described nine major tipping points that had the capacity to force the earth out of its Holocene state: climate change, biosphere integrity, land use change, freshwater use, biochemical flows, ocean acidification, atmospheric aerosol loading, stratospheric ozone deletion, and novel chemical entities. These nine boundaries revealed a tragic flaw in the Cornucopian conception of scarcity embraced in mainstream economics. Instead of seeing the natural world as a boundless stock of resources to control and command, earth system science models suggested that exponential economic growth was producing more pollution than the planet could absorb, risking major disruption to the safe functioning of the system.[12]

The growing threat to the global environment served up a frightening twist on the old fear of natural limits to growth, expanding the problem of finite *stock* to a scarcity of *sinks*. Energy and matter flow through the earth system between different reservoirs. When the flux of matter into a reservoir is greater than the outflow, the reservoir is defined as a



Planetary Boundaries, 2015. The Planetary Boundaries model defines the human economy as a subset of the global environment. Each of the nine boundaries suggests a quantitative measure for safe development. *Credit:* Stockholm Resilience Center.

sink. When coal, oil, and natural gas are burned, carbon dioxide is transferred from the ground to the atmosphere. Naturally occurring processes gradually remove carbon from the atmosphere and sequester it in sinks like the oceans, terrestrial vegetation, rocks, and soil, but the capacity of these sinks to store carbon dioxide is not unlimited. Beyond a certain threshold, excess carbon in the atmosphere will trigger a cascade of tipping points that undermine the safe functioning of the system.[13]

At the same time, earth system science also pointed to a second closely related planetary crisis of biodiversity. Rapid land use change and

climate change threatened to unleash a sixth mass extinction in the near future. Here, too, science challenged the idea of nature as a mere stock of resources for human use. By defining biodiversity as a nonrenewable and irreplaceable foundation for all life, ecologists insisted that there were sharp limits to human power over the earth. These warnings have only grown louder in recent years. The Finitarian concept of Planetary Scarcity captures this tension, acknowledging that the earth system itself can and will be overwhelmed by insatiable wants and endless growth.[14]

Under these manifold pressures, neoclassical economics came under attack from a variety of directions. Many of its most prominent advocates sought to address these critiques by revising the neoclassical doctrine. Just to mention a few, in the 1970s the Hungarian émigré Tibor Scitovsky and the American economist Richard Easterlin revised the more-is-better assumption.[15] Around the same moment, the Oxford-trained economist Fred Hirsch argued against the idea that economic growth necessarily contributes to the quality of life.[16] Harvard-economist Amartya Sen launched a new form of development economics centered on freedom and quality of life rather than the "narrower views" fixated on gross national product or industrialization.[17] More recently, the British economist Karen Raworth fused the Planetary Boundaries framework with a universal model of social and economic development. She, too, rejected the growth ethos of conventional economics in favor of satisfying all humans' basic needs within the ecological limits set by Planetary Boundaries. She accused the neoclassical economists of adopting a model of scarcity that neglected the moral ends and environmental constraints of actual economic life.[18] Finally, Cambridge economist Partha Dasgupta has developed a program for the economics of biodiversity, focusing on not just physical capital but also human capital and natural capital.[19] Many other efforts are currently underway within economics to address previous shortcomings. Yet the extent to which academic economists have reoriented their research agendas should not be overstated. Out of nearly nineteen thousand articles in the top five economics journals between 1957 and 2019, "climate change" and "global warming" appeared only twenty-six times in the titles and thirty-two times in the abstracts.[20] Moreover, most of the economics curriculum taught at universities around the world remains faithful to its traditional principles. As such, the conception of scarcity that informs how policy makers, journalists, and

business leaders approach the world is still very much grounded in the canonical version of neoclassical economics. To be absolutely clear, this book does not offer a critique of the usefulness or instrumentality of the neoclassical concept of scarcity—instead, the problem we highlight is that it has been *far too* successful. That is, by promoting the optimal use of resources and maximum economic growth, it has fostered a world in which the economy and nature are on a collision course. The primary aim of this book is therefore to expand our intellectual toolbox by drawing on how people in the past have understood the sources, meanings, and repercussions of scarcity, so that we can transcend the current hegemony of neoclassical economics.

The Power of Ideas

As intellectual historians, we believe that the manner in which people make sense of the world deeply shapes their actions. Each generation produces a world in the image of its ideas. The institutions we form, the policies we implement, the laws we pass, and the practices we pursue are undeniably structured by the prevailing worldview. As the great economist John Maynard Keynes declared:

> The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else.[21]

This is not to suggest that ideologies govern everything or that history unfolds according to a simple inherent logic, only that ideologies play a profoundly important role in shaping political agendas, legal changes, economic processes, and individual behavior. We reject deterministic models that see a one-to-one relationship between any particular society and its ideas; all societies are capable of producing an array of ideologies. While ideas always mirror the social structure, economic conditions, and political realities of their time, they also have the power to reshape these conditions to a significant degree.

The concept of ideology often has negative associations; it is seen as the opposite of the actual, the real, or the true. We employ the term differ-

ently here. For us, an ideology constitutes a worldview: a basic understanding of a society and how its constitutive parts fit together and acquire a discernable logic and purpose. An ideology offers a coherent perspective on a society that unifies its believers and creates a shared identity. Ideologies tend to be both rationalizing and legitimizing, in the sense that they provide "plausible explanations and justifications for social behavior which might otherwise be the object of criticism."[22] Ideologies can be said to be naturalizing, in the sense that they are often presented as natural, self-evident, and commonsensical. They are also frequently made to appear ahistorical, having no discernible beginning and thus no inevitable end. While ideologies pretend to be universal, applicable to everyone, they never achieve absolute dominance. Alternative ways of understanding the world are always available for those who seek them out.

Currently, the ideology of modern economics holds a powerful sway over the world. Neoclassical economists offer a coherent explanation of economic phenomena, and in so doing powerfully legitimize and encourage the maximization of efficiency, profits, utility, and growth. The theory also sets boundaries for what is considered real and common sense. Once students of economics accept the neoclassical notion of scarcity, only a particular understanding of the present and a limited set of future worlds become possible. Even though the actual conditions of modern capitalism do not look much like the models employed in modern economic theory, the theory nevertheless plays a critical role in structuring the modern understanding of capitalism. Thinking of nature as a storehouse of appropriable and tradeable material wealth alters how people interact with the earth system and all its elements. It makes it reasonable to conceive of the biosphere, first and foremost, as a standing reserve and a factor of economic growth.

If economists and politicians continue to use the modern neoclassical concept of scarcity to address the looming planetary crisis, they run the risk of generating solutions that only exacerbate the problems. They trap us in an intellectual framework that is unlikely to yield the kind of creative thinking we need. It certainly would be convenient if we were able to continue addressing our environmental problems with ever more economic growth—something humans have become very skilled at doing—but that is no longer an option. Yet the very idea of stepping off the infinite growth trajectory invokes multiple anxieties: we can no

longer be confident that each generation will be better off materially than the previous one, modern pension systems might not remain solvent, and we might not be able to generate enough jobs for everyone. Voluntarily extracting ourselves from the infinite growth paradigm will require a fundamental transformation in the way we think about and approach the world.

Because this book examines ideas that shaped capitalism and modernity, we focus our attention on the writers in the Western canon.[23] This means that we explore, for the most part, a narrow range of elite, white, male thinkers, who enjoyed the privilege to publish their ideas and had access to institutions of intellectual authority. Among them are philosophers, political, and social theorists, as well as economists, including Francis Bacon, David Hume, Adam Smith, Carl Menger, and Alfred Marshall. Some of these figures advanced ideas of infinite economic growth, in which we can identify the roots of today's Neoclassical Scarcity. Others, however, voiced oppositional discourses, among them Gerrard Winstanley, Jean-Jacques Rousseau, Dorothy Wordsworth, Karl Marx, and Hannah Arendt.

For some of our readers, this book contains too many intellectual figures already, whereas for others we have not included enough, omitting writers who perhaps deserve to be included. We have aimed, however, to select the thinkers who present each version of scarcity we want to highlight with the greatest lucidity. Had we tried to capture every nuance of this genealogy, our book would have been many thousand pages long. We have also aimed throughout the text to capture the ideas of those who first formulated them, not to elaborate on subsequent debates and interpretations by our fellow academics. For this reason, endnotes are kept to a minimum.

Resistance and opposition are, of course, not a monopoly of Western dissidents. We recognize that there have been many other oppositional voices, both within and outside the Western canon—voices that sang out as capitalism spread around the globe. We do not believe that the Western canon should be the only fountain of ideas from which to draw when thinking about the future, and we are strongly in favor of movements toward a new global intellectual history. But we also recognize that other scholars are better equipped to write this more expansive history of opposition to capitalism beyond the Western canon. Indeed, there is a rich and growing scholarly literature on conceptions of the relationship between

nature and economy in subaltern and non-Western ideologies. Our hope is that readers ultimately will consider our book within the context of this larger global discourse, as part of an urgent, collective search for new paths of flourishing on the planet.[24]

While this book largely examines the past, our ultimate aim is to foster discussion about how to conceptualize the relationship between nature and economy in the future. It is still possible to change human behavior in ways that will enable societies to stay clear of the worst effects of the looming climate and biodiversity crises. This will require, however, a decisive shift beyond the hegemonic neoclassical conception of scarcity. It is in this sense that we believe the ideologies explored in this book can bear productively on our current planetary crisis. First, only by examining the development of ideas over centuries can we come to appreciate fully when and why perceptions of the relationship between nature and the economy changed. Second, a broader understanding of past ideas about scarcity gives us a comparative framework within which to evaluate what is historically specific about each concept and therefore how they differ. Third, and perhaps most importantly, the historical record shows that many different versions of scarcity have existed over centuries. The modern neoclassical version was never inevitable, but just one of many ideas of scarcity. If it was created at some point in time, it can also have an end: there is no universal truth or permanence to it. Finally, the historical record also offers a reservoir of alternative ways of thinking about nature and economy. None of them, of course, can be fully retrieved and reinstated in their original form, and some indeed are best left in the past. Others, however, might inspire us to think creatively about our future. In fact, as explored in the Conclusion, ongoing responses to Planetary Scarcity already contain some echoes of oppositional discourses from centuries past. Ideas do not neatly come and go, but tend to linger. Although each chapter of this book describes the emergence of a new concept of scarcity, none of these worldviews completely replaced the preceding ones or was replaced by those that followed. At any given point, there are numerous competing worldviews, old and new, vying for attention. One or a few ideologies might gain ascendancy for some time, but their triumph is never absolute. Nestled in the social fabric, they reappear in the future in a slightly different guise, once again ready to shape the course of history.

No matter which intellectual traditions frame our imagination of the future, one thing is clear: all societies face the same universal emergency in the twin threats of anthropogenic climate change and mass extinction. For a problem of this magnitude, there are no simple technical fixes. While innovation in technology and infrastructure will no doubt be indispensable, the deeper challenge we confront is how to rethink the relation between economy and nature. Instead of seeing economic activity as an independent power that masters nature, those of us who live in capitalist societies need new ways to understand production as a joint endeavor between humanity and earthly forces, from the microcosm of soil bacteria to the carbon cycle of the earth system. Instead of thinking of creativity as a purely human phenomenon, we should recognize how the natural world makes possible and shapes human agency and well-being. We also need to reorient the public debate toward new normative aims. After so much thoughtless destruction and degradation, ecological repair and restoration must become central priorities. At the same time, the work of repair must go hand in hand with new ideals of justice that help us overcome long-standing inequalities, within and between nation-states and continents.[25]

As historians we do not claim to have a ready and easy solution to any of these problems. But we insist that the reconstruction of the economic imagination will require historical detective work. We can only hope to free ourselves from the force of destructive ideas by understanding their historical roots. By delving into the past, we begin to see scarcity as historically contingent and tied to peculiar social and political contexts. Such inquiries widen the scope of our creativity in this moment of planetary emergency, clearing a space for new thought and action.

3

ENLIGHTENED SCARCITY

In 1723, Bernard Mandeville was nervously pacing the streets of London, awaiting the verdict of the Middlesex Grand Jury. He stood accused of publishing ideas harmful to good morals and with a "direct Tendency to the Subversion of all Religion and Civil-Government."[1] The city he was walking through had recently been rebuilt after the Great Fire of 1666. The most illustrious construction to emerge from the ashes, St Paul's Cathedral, was now nearly complete; only a few minor details remained. Many other monumental buildings were erected around it, new wharfs were built along the Thames, and people of all classes flooded to the capital. London was brimming with prosperity. Vessels were daily unloading exotic goods from England's sprawling colonial empire and novel wares were arriving from workshops around Europe. A new kind of affluence was visible everywhere. Wealthy merchants flaunted their riches, enjoying the admiring gaze of strangers. What made this moment unique was that luxury goods—drams of rum, pouches of tobacco, cups of coffee—were now within most Londoners' reach. Many were even able to enjoy a few items of clothing made of silk or cotton, perhaps with some vivid colors made possible by new, imported dyes. The visual and culinary culture

of Europe would never be the same. The commercial exhilaration enticed many merchants to try their fortunes in London's financial markets. They speculated on future profits by buying and selling stocks, bonds, and options in Exchange Alley. Even Londoners who were less affluent could participate in the burgeoning world of high finance, as pubs and ale houses sold fractions of corporate stocks, appropriately named shares.

London's new consumer culture was infused with a novel ethic of self-interest. That Mandeville had recognized this, and revealed the uncomfortable truth that vanity, prodigality, and pride now fueled the city's unprecedented prosperity, was the reason he stood accused of crimes. The first edition of his *Fable of the Bees,* published in 1714 during a moment of prosperity and optimism, had received little attention from moral authorities. By the time the second edition appeared, the atmosphere had been radically changed by a watershed event in 1720: the burst of history's first stock market bubbles. The crashing share prices of the Mississippi Company in Paris and the South Sea Company in London sent shockwaves that reverberated throughout Europe. While historians still debate the extent to which these collapses triggered a significant downturn in the economy, there is little disagreement as to their impact on the period's economic culture and thinking.[2] Suddenly, the ideas of boundless consumption and infinite improvement began to be ridiculed in newsprint, philosophical essays, and ballads, as well as the period's newest literary genre, the novel.

The Cornucopian zeitgeist that had only recently taken hold was now scorned on all sides. Critics regarded the optimistic projections of alchemy and science as castle-building in the sky, dismissed the innovations introduced by the Financial Revolution as chimerical, and condemned the new culture of insatiable desires as a sure path to societal disintegration. In short, they rejected the whole notion of Cornucopian Scarcity as intertwined infinites. Yet, as Enlightenment philosophers and political economists set out to develop a new theoretical approach to scarcity, they found it difficult to jettison altogether the expectation of indefinite improvement. To create a separation between themselves and their predecessors, they made theoretical distinctions along three major lines. First, although they recognized that people were drawn to consumption, Enlightenment thinkers insisted that it was possible for people to temper their selfish desires over time. Second, while nature was capable of pro-

viding humanity with a great deal of wealth, the *philosophes* downplayed nature's capacity for the kind of spectacular economic growth envisioned by the previous generation. Third, while they believed that the economy could continue to grow for generations, they acknowledged the possibility that growth might not continue forever. Cornucopianism still provided the foundation for their thinking—only now, the riches flowing from the horn of plenty were no longer considered quite as extraordinary, and nor was "haughty *Chloe,*" to use Mandeville's name for the female consumer, thought to be quite as desirous. And appearing on the distant horizon was the possibility of a stationary state, which both David Hume and Adam Smith, the protagonists of this chapter, thought might be a rather happy state of human affairs. The resulting configuration of scarcity, which we call Enlightened Scarcity, was thus based on insatiable desires checked by internal mental restraints and a steady but gradual expansion of material wealth, at least for the foreseeable future.

A Critique of Cornucopian Scarcity

Pundits, novelists, and philosophers put the blame for the 1720 financial meltdown on the shoulders of people such as John Law in France and John Blunt in England for their respective roles in the rise and fall of the Mississippi Company and the South Sea Company. A great deal of culpability was also assigned to the general "spirit of the age" for enabling such excesses and exuberance. As part of this critique, both prongs of Cornucopian Scarcity came under attack: the belief that insatiable desires served as the engine of infinite economic growth, and the conviction that science, aided by credit, had the power to unlock nature's hidden treasures and thus produce an abundance of material wealth. We discuss these two critiques in reverse order.

In light of the fact that the 1720 crisis was triggered by the stock market crashes, it is not surprising that most of the vitriol was aimed at the recent financial innovations. The financial scheme engineered by John Law in France was the most elaborate of its kind, combining the supposedly abundant riches of France's North American colonial possessions with a set of sophisticated financial mechanisms. "Law's System" was advertised to the investing public as a philosopher's stone of sorts, capable of empowering the French state, stimulating the French economy, and

enriching French consumers. After investors initially embraced his sales pitch, however, share prices of the Mississippi Company plummeted in the spring of 1720, and Law went from being the most powerful man in France to the most reviled. He was now seen as the devil, Louisiana as hell on earth, and the alchemy of finance as nothing but black magic.[3] From across the channel, the already famous novelist and essayist Daniel Defoe ridiculed Law's scheme, leveling the charge that "you only screw'd up the adventurous Humour of the People by starting every Day new Surprizes, new Oceans for them to launch out into; so supporting one Chimera by another, building Infinite upon Infinite, which it was evident must sink all at last into infinite Confusion."[4] The mocking repetition of "infinite" is notable: while previously used to spark the imagination of unlimited progress, the term was now a target of ridicule.

The problems with credit, Defoe argued, was that it was poorly understood. Those who tried to describe the phenomenon of credit often ended up lost in a labyrinth of metaphors. "*Like the Soul* in the Body," Defoe himself had written, "it acts all Substance, yet is it self Immaterial; it gives Motion, yet it self cannot be said to Exist; it creates *Forms,* yet has it self *no Form;* it is neither Quantity or Quality; it has not *Whereness,* or *Whenness, Scite,* or *Habit.*"[5] When financiers like John Law launched projects without fully grasping the power inherent in credit, they were playing with fire. They failed to recognize the Daedalian quality of credit that Jonathan Swift, Defoe's rival for the title of most-celebrated Augustan author, described in his long poem on the South Sea Company debacle (c. 1720):

> On *Paper* Wings he takes his Flight,
> With *Wax* the *Father* bound them fast;
> The *Wax* is melted by the Height,
> And down the tow'ring Boy is cast.
> . . .
> His *Wings* are his *Paternal Rent,*
> He melts his *Wax* at ev'ry Flame;
> His Credit sunk, his Money spent,
> *In* Southern Seas *he leaves his Name.*[6]

Most critics of credit did not want to see credit abolished but reined in—controlled and regulated. Defoe, for example, insisted that credit could

be almost as solid as gold if it were limited to private contracts between honest people who made credible promises and always punctually honored them. Credit had the capacity to thrive as long as people exhibited self-control and honesty. The problem was that honesty, credibility, punctuality, and self-control did not come easy.

A Critique of Science

Along with the critique of credit, the other sources of the cornucopian growth ideal, alchemy and science, also came under scrutiny for promising impossible riches. The brave new world of abundance envisioned by seventeenth-century natural philosophers was vigorously challenged by, among others, Swift, in his iconic novel *Gulliver's Travels* (1726). Swift satirized Bacon's Solomon's House and the Royal Society, founded in 1660, comparing them to the fictional "Academy of Projectors" that Gulliver encountered on the island of Lagado. He described a sprawling campus with some five hundred separate laboratories, in which projectors, "violently bent upon . . . improvement," experimented with ways to refine agriculture, trades, buildings, and manufacturers.[7] As Gulliver toured the campus, it soon dawned on him that nothing the projectors worked on actually had any practical application. For example, he observed one man who had for eight years been engaged in a project to extract sunbeams out of cucumbers, and in the adjacent room he came upon another man trying to "reduce human Excrement to its original Food."[8] As he continued his visit, he witnessed another projector trying to develop a method for building houses starting with the roof and ending with the foundation. A fourth man was feeding colorful flies to spiders, hoping that they would spin a colorful web—a material that could then substitute for expensive silks colored with foreign dyes. Poking fun at the Hartlib Circle's initiative to create a universal language to enable the restoration of knowledge, Gulliver described an absurd project aimed at "entirely abolishing all Words."[9]

The seventeenth-century enthusiasm about the potential of science to facilitate extraordinary improvements may eventually have been vindicated by the march of progress, from the steam engine to electrification to nuclear energy to computers, but from the perspective of eighteenth-century natural philosophers, the vision of progress promoted by the Hartlib Circle was blown out of proportion. They did not

believe there was anything like a God-given source code that, once cracked, would enable humanity to unlock nature's infinite storehouse of riches, nor did they accept the idea that extraordinary breakthroughs would occur at a moment's notice. As practitioners of science moved away from hermetic and millenarian prognostications of an impending kingdom of heaven on earth, it was increasingly acknowledged that scientific progress would take time and require systematic work. Everything in nature had to be observed and properly investigated, with armies of scientists—professional, as well as amateurs—drawing up inventories, classifying and categorizing, conducting experiments, and formulating explanatory theories. All of these endeavors required a herculean effort and would bear fruit only gradually.

This shift in perspective on science was part of a broader transition toward a materialist and a mechanical worldview. The earlier search for universal knowledge had been based on the assumption that nature was infused with various spiritual forces. Some natural philosophers believed that inanimate, as well as animate, objects had souls, while others, unwilling to go that far, still allowed that nonliving entities might possess some kind of energy or force. Alchemists, for example, as discussed in Chapter 2, understood the cosmos as consisting of a series of unobservable correspondences between the microcosm and the macrocosm. Any adept seeking to operate on metals therefore had to worry not only about the heat of the kiln but also about the alignment of the stars. The new materialist and mechanical worldview, by contrast, understood the universe as composed of dead matter organized within a rational, machinelike order. Devoid of any inherent powers of their own, the inert particles, or atoms, relied on external force for movement or change. Everything in this world happened not because of sympathies, antipathies, occult powers, or spontaneity, but as a result of regular, predictable laws.[10] The creator of this grand machine, God, was referred to as the great engineer, architect, or watchmaker. The laws of this system were not immediately observable to the human eye, nor were its ultimate causes susceptible to human knowledge, but both were ascertainable through observation, experiment, and calculation. Equipped with these tools, chemists, botanists, physicists, and others set out to investigate all of nature's inert particles, with the ultimate aim of finding out how they all fit together as part of the natural order. Using the machine, not a living organism, as the conceptual framework for studying

nature, made it easier to imagine replicating or substituting nature with mechanical devices.

In the middle of the eighteenth century, the mechanical worldview started to encounter some pushback. The impulse to ground explanations of nature solely in formal mathematics and reduce all of nature's operations to simple principles lost some of its momentum. David Hume, for example, challenged humanity's capacity to understand causal factors at work in nature. A variety of other philosophers, scientists, and novelists popularized the notion that moral sentiments were necessary to grasp nature's secrets. As philosophers questioned the capacity of instrumental reasoning to serve as the dominant source of knowledge, sensibility became part of scientific inquiry, creating an intimate correspondence between the natural and the moral sciences. Nature was envisioned as teeming with "active forces vitalizing matter, revolving around each other in a developmental dance."[11] Instead of a sharp contrast between human agency and nature's passivity, these Enlightenment vitalists saw a partnership between humanity and nature, based on a sense of shared creativity. By imitating and harnessing nature, they believed, people could reach further than if they strove for the domination of nature. We see manifestations of this approach in the work of many influential eighteenth-century natural philosophers, including Carl Linnaeus, Comte de Buffon, and Alexander von Humboldt. It also constituted a major inspiration for Romanticism, explored in Chapter 4.

For science to serve as a catalyst for wealth creation, society had to dedicate resources to its pursuit. Realizing that science yielded important medical, architectural, military, agricultural, and economic benefits, national and local governments took active roles in setting up infrastructure, financing scientific laboratories and gardens, sponsoring journeys of scientists abroad, promoting publications, and rewarding scientific innovations with honors and prizes. Many scientists also actively recruited members of the broader public to participate in the investigation of nature. Every spring, for example, Linnaeus organized botanical excursions on Saturday mornings, called *Herbationes Upsalienses*. These outings were famous throughout Sweden and Europe, attracting as many as three hundred students, villagers, and visitors at a time. Accompanied by horns, drums, and banners, the crowd followed its charismatic teacher across fens and fields, through beech and spruce forests, eagerly

awaiting his instructions. Participants were encouraged to keep careful notes to learn the basics of his classificatory system. Linnaeus hoped that his excursions would inspire amateur scientists to contribute to his ambitious project of classifying the nation's flora and fauna in their entirety.

The more knowledge that was accumulated about nature, the more people were able to turn nature into useful wealth. Everything, Linnaeus insisted, "whereby humans are nourished, clothed, and adorned, supplied and . . . yes, all things that fall into the categories of clothes, luxury, wealth, amusements, and necessities, have their beginnings and origins in nature's kingdom."[12] Scientific and economic knowledge were, from this point, joined at the hip. Future prosperity was fundamentally based on commerce and industriousness—hard work in the fields, mines, and factories, as well as in the laboratories, mechanical workshops, and botanical gardens. Together, commerce and industriousness had the power to keep pushing the limits of nature and generating standard-of-living improvements for the bulk of the population. The idea of a more sensible and measured cornucopianism was taking root in the intellectual discourse of most European nations.[13]

A Critique of Insatiable Desires

Jonathan Swift (1667–1745) not only had much to say about the false promises of abundance by scientists; in *Gulliver's Travels,* he also delivered one of the most memorable critiques of the modern, insatiable consumer. Swift viewed the limitless appetite for bodily pleasure and the endless drive to accumulate as odious qualities of modern people. If five *Yahoos,* as he called them, were given food sufficient for fifty, they would not peacefully eat just what their stomachs required. Instead, each individual would be "impatient to *have all to itself.*"[14] Even more unappealing was their "undistinguishing Appetite to devour everything that came their way, whether Herbs, Roots, Berries, the corrupted Flesh of Animals." They also coveted food that could only be acquired by "Rapine or Stealth at a great distance" rather than the much healthier and tastier local alternatives.[15] The *Yahoos* were also "violently fond" of gold and silver.[16] They would dig with their claws for days to find nuggets in the ground and, if successful, hide them carefully and guard them with their lives. Gulliver was told by his host that on the fields where the shining stones were found, "the

fiercest and most frequent Battles are fought."[17] As part of their insatiable desires, the *Yahoos* were overly libidinous and lacked any sense of restraint. Gulliver offered an account of a frightening moment when he, while swimming in a river, was sexually assaulted by a female *Yahoo*.[18] Having encountered a wide assortment of creatures during his wayward travels, Gulliver found the *Yahoo* to be the most "indocible, mischievous and malicious," as well as the "most filthy, noisome, and deformed Animal which Nature ever produced."[19]

The seemingly irrepressible pleasure-seeking common to commercial societies also preoccupied Daniel Defoe. Two of his most iconic title characters, Robinson Crusoe and Moll Flanders, served as examples of people who fell victim to their own boundless ambitions and insatiable appetites. Defying his father's advice to be satisfied with moderate success, Robinson engaged in risky endeavors to "pursue a rash and immoderate desire for rising faster than the nature of the thing admitted."[20] Lured by the storied profits available in the Atlantic slave trade, Robinson set sail on the voyage that would soon end in a storm and leave him stranded on a deserted island for twenty-eight years. Moll Flanders, born into poverty and criminality, spent her entire life pursuing wealth and higher standing. Seduction, marriage, prostitution, theft, deceit, counterfeiting, impersonation, and child abandonment were among the many strategies she pursued to satisfy her inextinguishable appetite for riches. It was only when Moll arrived in the American colonies, and realized her avarice was the source of her hardships, that she turned her life around. Committing herself to industry, honesty, and frugality, she not only lived happily for the first time in her life, but also acquired considerable riches.[21]

Similar to Moll, Robinson was only truly able to remove himself from the "wickedness of the world" once he freed himself from the false pursuit of happiness through pleasure and accumulation.[22] He noted that even the "most covetous griping miser in the world would have been cured of the vice of covetousness, if he had been in my case; for I possessed infinitely more than I knew what to do with."[23] Realizing that the gold and silver he had rescued from the shipwreck was useless to him on the island, he was free to discover what his true needs were, and how to satisfy them. He found that he was surrounded by bountiful nature and that, as long as he worked diligently, used his ingenuity to construct tools and equipment,

properly cultivated his enclosed land, and carefully harvested and stored the produce, he would live in relative abundance. Committing himself to a life of systematic industry, he conducted empirical observations, kept careful inventories and journals, prepared a balance sheet of his state of affairs, patiently experimented with different materials, meticulously recorded days, weeks, months, and years, kept track of the weather and seasons, and constantly busied his mind with studying his surroundings. By investigating nature inductively and empirically, he amassed considerable data from which he was able to infer patterns in nature that he could then exploit. He learned numerous lessons from simple trial and error, even leaving one of his failed canoe constructions next to camp as "a *memorandum* to teach me to be wiser next time."[24] In short, he systematically used science to transform nature in ways that enabled him to satisfy his authentic needs and steadily, albeit slowly, amass a small fortune, including both a country house and a seaside house.

The Robinson who left the island after nearly three decades in many ways embodied the characteristics of an ideal member of the commercial middle classes. He was ingenious, industrious, and innovative. He was also well aware of the extent of his own needs, which he was able to meet with a mix of industry and frugality. His moderation did not entirely extinguish his appreciation of "things," or make him wholly uninterested in aesthetics and beauty. For example, after giving an account of the functionality of his cap, waistcoat, and breeches that he had made from animal skins, he noted that "I must not omit to acknowledge" that they were "wretchedly made."[25] He described in detail the style of his "high shapeless cap," his short jacket of goatskin, his fashionable open-kneed breeches, and his chic umbrella, his favorite accessory. Yet, he concluded with a palpable sadness, "I had so few to observe me, that it was of no manner of consequence; so I say no more to that part."[26]

Defoe's characters, Moll and Robinson, successfully managed to transform their moral psychologies. By transcending their Mandevillian selfishness, which had caused them so much suffering, they enjoyed not only greater material fortunes but also honest friendship, conviviality, and social virtues. A gradual increase in wealth and a sensible moderation of desires constituted the ideal relationship between nature and economy. Scarcity was thus regarded as a constrained cornucopianism and a measured epicureanism.

Softening people's self-love was a central aim for many eighteenth-century philosophers. They were interested in finding the ideal balance between self-interest, regarded as the engine of economic growth, and self-restraint, seen as the foundation of social virtues. The importance of reining in self-interest had been emphasized before—recall the ideas of Martin Luther and Thomas More in Chapter 1—but in the past, the focus had mostly been on restraints imposed externally, by religion or law. Eighteenth-century philosophers looked instead for a mechanism internal to the human mind, a way to change people's psychological disposition so that they willingly checked their own self-interest. If this were achieved, humanity's expansive yet calibrated desires could be brought into balance with nature's gradually expandable abundance.

Anthony Ashley-Cooper, the Earl of Shaftesbury, well known for his writings and association with John Locke, argued that all humans possessed a moral sense, as a faculty of the mind or a general psychological disposition.[27] This sense instilled a motive in people to look beyond their own narrow self-interest and be mindful of other's well-being. Aided by education and refinement, people's moral sense had the capacity, he argued, to promote changes in manners and customs, and thus to foster a culture of politeness—an etiquette of gentle and respectful public conduct. The eminent moral philosopher Francis Hutcheson further developed Shaftesbury's notion of a congenital moral sense.[28] He argued that, in the same way that humans have a built-in aesthetic sense that allowed them to distinguish between beauty and deformity, they also had a congenital capacity to discern right from wrong. While stronger in some than in others, this moral sense moderated people's selfish desires and provided their minds with motives for other-regarding actions.

The English bishop Joseph Butler acknowledged in one of his sermons that self-love was a powerful motive, but argued that humans were also endowed with a conscience and capacity for reflection, and "this faculty tends to restrain men from doing mischief to each other and leads them to do good."[29] The fact that people remained constantly mindful of their own reputations also kept them from solely pursing their own narrow self-interests. Conscience and reputation thus helped people check, but not eliminate, their selfish desires. This meant that people could still be driven by a desire to consume, but it would never be their sole motivation. They also cared about the well-being of others. Finally, some philosophers,

including René Descartes and James Harrington, considered reason a viable counterweight to the selfish passions, to the extent it provided the individual with an ethical roadmap. Because reason followed a certain set of rules, they argued, it was epistemologically more robust than moral sense and therefore offered more legitimate instructions to the mind. Whether the corrective force was moral sense, conscience, reflection, or reason, the task was similar: not to drive out all self-interest, but to curtail it enough so that people were able to moderate their desires for pleasure and accumulation. These ideas would play an important role in both Hume's and Smith's efforts to chart a middle course between Neo-Aristotelian Scarcity and Cornucopian Scarcity.

David Hume's Enlightened Scarcity

David Hume (1711–1776), the most celebrated philosopher of the Scottish Enlightenment, was the first thinker to use the term *scarcity* as the starting point of his social, economic, and political analysis.[30] In his ambitious efforts to bring Newton's scientific method to bear on what Hume called the "science of man," he assumed two conditions: that nearly all people, in all historical ages, shared the quality of "selfishness" or at least "limited generosity" toward others; and that the realm of goods was always characterized by "their scarcity in comparison of the wants and desires of men." The tension following from these two assumptions shaped every human society.[31] To affirm his point, Hume considered two hypothetical scenarios in which scarcity was absent: when nature gave rise to "extreme abundance" and when the human mind exhibited "perfect moderation."[32] In the first case, because the "unlimited abundance" of nature would be sufficient to satisfy even the "most voracious appetites" and "luxurious imagination," there would always be enough food and shelter for everyone.[33] In the second case, because people's minds were filled with boundless generosity and they had as much "tenderness" for others as they had for themselves, there would be no competition for resources or goods, and humanity would "form only one family."[34] Unfortunately, Hume lamented, "the common situation of society is a medium amidst all these extremes," in which we are "naturally partial to ourselves" and "few enjoyments are given us from the open and liberal hand of nature." Thus, humanity has never escaped, nor will it ever escape, the condition of scarcity.[35]

While Hume did not believe that humanity could ever transcend the condition of scarcity, he argued that capitalism had the capacity to alleviate it. By simultaneously moderating people's selfish desires and expanding the availability of material wealth, the grip that scarcity held on the population could over time be loosened. Hume offered an elaborate argument, the contours of which we sketch below, for how capitalism could reduce the tension between desire for and availability of material wealth.

The first question Hume investigated was how to keep society intact in a world of selfishness and scarcity. While Hume was more sanguine about humanity than, for example, Jonathan Swift in his portrayal of the *Yahoos,* he did not believe that people were born with a ready-made capacity for sociability, nor did he think that their moral sense was strong enough to check their desires. Instead, he argued, the only way for inherently self-interested people to become more sociable was to shift their focus from the short-term to the long-term. In the long term, every individual was best served by being part of a society in which everyone lived in greater affluence—which for Hume meant a society in which people had the right to own property, trade goods in markets, and use money as a store of value. Once people realized the benefits that accrued from these three conventions, they would honor other people's property, uphold exchange agreements, and maintain the trust upon which money was based. Altruism would not be required for people to restrain their immediate self-interest to a sufficient degree. Taking a longer view, they would recognize it was more beneficial to them to act in ways that kept these conventions intact.

Hume's experience of living in three of Europe's most vibrant metropoles—Edinburgh, London, and Paris—made him a great champion of commercial society. Never offered a university position, he had to make his life outside the ivory towers, among what he called "men of action." Gregarious and curious by nature, Hume spent much of his time in the company of ambitious members of the middling sorts. Hume expressed his admiration for them, in particular for the merchants, whom he called "one of the most useful races of men."[36] It was their ingenuity, industriousness, and risk-taking that laid the foundation for what Hume regarded as a new era of progress.

The thriving consumer culture discussed in Chapter 2 intensified in the eighteenth century, forging a truly cosmopolitan economy. As demand

soared for coffee, sugar, tobacco, and chocolate, a complex system of mass production, mass enslavement, mass transportation, and mass marketing emerged. The imperial nexus was epitomized by the popular image of an English merchant entering one of London's many coffee shops, presenting a silver coin from Zacatecas to be served sweetened coffee from the Caribbean in a Chinese porcelain cup, and enjoying it with some Chesapeake tobacco.

In addition to the consumption of new stimulants, the global economy was shaped by a new sartorial culture. Hume fully embraced this new middle-class aesthetic. As captured by the renowned portrait artist Allan Ramsay, the Scottish philosopher favored the *habit à la française,* wearing a coat over a waistcoat and breeches. This fashion also called for a pair of silk stockings, a jabot, a linen or cotton shirt with decorative cuffs, and a cravat. Hume's coat was made of brushed cotton, imported most likely from India, and its bright red color came from a dye derived from cochineal insects in Mexico. It was embellished with a metal brocade, intended to look like gold. His jabot and cuffs were decorated with linen lace made in France.

Cotton cloth from India and China was in high demand in European cities, with certain kinds of muslins and printed calicoes especially coveted. Asian silks were also in vogue, not only for clothing but for upholstery and wallpaper; so-called Chinoiserie adorned many of the new Georgian townhouses in London, Edinburgh, and elsewhere. The dyes used to give these textiles their rich colors—including brazilwood, fustic, turmeric, cochineal, woad, indigo, logwood, and sumac—were also imported. Domestic manufacturers, seeing that consumers could not get enough of the new styles, set out to imitate the desirable foreign goods. Aided by import-substitution policies, European manufacturers produced knockoff shirts, cravats, skirts, and blouses. But instead of simply copying the technology used in Asia, they employed their own technologies in ways that would eventually pave the way for the Industrial Revolution.[37]

As a jovial and social *bon vivant,* Hume took great delight in all kinds of luxuries—fine garments, sumptuous food, and spacious living quarters—earning him the nickname of *Le Bon David* in the Parisian salons. He saw nothing wrong with indulging responsibly in luxury consumption, unlike some of his contemporaries. The famous critic of consumerism John Brown, for example, argued in 1758 that giving too much rein to the imag-

Allan Ramsay, *David Hume,* 1766. Hume insisted that continuous economic growth would not only improve standards of living, but also promote cultural, intellectual, and moral refinement. *Credit:* National Galleries Scotland. Bequeathed by Mrs. Macdonald Hume to the National Gallery and transferred.

ination, which "admits of no Satiety," would make people vain and effeminate. This would spell disaster for England, Brown predicted, as it vied for global hegemony with France—a nation that the English never tired of slandering for being effeminate—in the ongoing conflict later named the Seven Years' War. Hume, however, remained unconvinced by the arguments Brown and others put forth. For him, as long as people did not bankrupt themselves, become entirely obsessed with consumption, or turn into lazy profligates, there was nothing destructive about their consumption. Moreover, because luxuries motivated people to engage in industry, commerce, and the advancements of the arts and sciences, they played a critical role in generating both economic growth and moral refinement.

While it is not difficult to see that the revolutions in commerce, science, and industry contributed to material prosperity, Hume was making a more subtle point: These revolutions, by causing people to become more virtuous and their tastes to become more refined, also contributed to the refinement of morals.[38] Industry contributed to moral improvement by giving people a sense of purpose, instilling discipline, and creating a regularity of conduct. Conscientiously pursuing a profession could be a form of "habit" formation, which Hume described as a "powerful means of reforming the mind, and implementing in it good dispositions and inclinations."[39] Hume further argued that when a person is engaged in "honest industry," his or her "mind acquires new vigour; enlarges its powers and faculties."[40] Industrious people are not only better at their jobs, they also acquire the capacity for more refined thinking, which included moral reasoning. Hume's views on the virtue-inducing qualities of diligent work are so similar to Defoe's that one might suspect he had Robinson Crusoe in mind as he wrote.

Commerce also contributed to the refinement of people's minds. To be a successful merchant, as Hume knew firsthand from his short stint as a merchant clerk in the commercial hub of Bristol in 1734, it was necessary to develop an array of worldly knowledge. Merchants needed to be well trained in writing, arithmetic, accounting, measuring technologies, and the assaying of gold and silver. They also needed to know the law, customs, and financial systems in all the places they traded. This, in turn, required language skills. Learned in many different fields, the merchant became the new *renaissance man.* Serving as the catalyst for globalization, the merchants were also responsible for connecting people from different nations, cultures, and religions. As citizens of the world they would "flock into cities; love to receive and communicate knowledge; to show their wit or their breeding; their taste in conversation or living, in clothes or furniture."[41]

The middling sorts also advanced the refinement of the arts and sciences. Without specifying the exact links, Hume argued that the "same age which produces great philosophers and politicians, renowned generals and poets, usually abounds with skillful weavers, and ship-carpenters."[42] Once the "minds of men" become energized, they "carry improvements into every art and science." This creates a culture in which "profound ignorance is totally banished, and men enjoy the privilege of rational crea-

tures, to think as well as to act, to cultivate the pleasures of the mind as well as those of the body."[43]

The pursuit of the liberal arts was particularly instrumental to people's moral refinement, as it promoted a "delicacy of taste." Hume noted that, among the segments of the population, those "in the middle station" between the great and the poor made up "the most numerous Rank of Men, that can be suppos'd susceptible of philosophy."[44] They had enough leisure to engage with what he elsewhere called "the beauties, either of poetry, eloquence, music, or painting" that "draw off the mind from the hurry of business and interest; cherish reflection; dispose to tranquility; and produce an agreeable melancholy."[45] He believed strongly that "cultivating a relish in the liberal arts" strengthened people's judgment and thus put them on a path to virtue. It was not so much the specific content of any one philosophical, historical, or literary text that promoted moral refinement, but rather the practice of grappling with serious and complex ideas.[46]

Unlike philosophical predecessors who emphasized politeness, moral sense, and reason, or his best friend, Adam Smith, who focused on prudence and self-command, Hume argued that virtue was also shaped by one's social standing. Those situated in the middle of the social hierarchy (including lawyers, physicians, and others active in everyday commercial life) had more leisure than the poor but more motivation to be industrious and learn than the rich. Thus, they could exercise not just the humble virtues of the former or the generous virtues of the latter but "every moral Quality, which the human Soul is susceptible of."[47] As such, they avoided destructive excesses of consumption, knowing that "feverish, empty amusements of luxury and expense" could never compete with the "unbought satisfaction of conversation, society, study, even health and the common beauties of nature." Hence, as Hume observed elsewhere, "industry, knowledge, and humanity, are linked together by an indissoluble chain."[48] They could avoid destructive excesses of consumption, knowing that "feverish, empty amusements of luxury and expense" could never compete with the "unbought satisfaction of conversation, society, study, even health and the common beauties of nature."[49]

Capitalism, for Hume, thus had a tendency to ease the tension between economy and nature. By producing greater economic abundance while simultaneously enhancing people's tastes and morality, it promised to make the experience of scarcity less severe over time. It did not condemn

a society to ever-escalating levels of production and consumption, but allowed for growth to tail off in the future as people embraced new priorities, shifting their focus to the pursuit of higher pleasures. The notion that capitalism might produce more refined citizens, with elevated preferences, became a common theme in the centuries that followed. Later thinkers, including John Stuart Mill, Alfred Marshall, and John Maynard Keynes, articulated similarly hopeful ideas about economic growth and refined sentiments progressing together. It is far from improbable that they were directly inspired by Hume.

Adam Smith's Enlightened Scarcity

In one of the first letters that survives from Adam Smith's pen, written in late October 1741 when Smith was eighteen years old, he asked his mother to send him "some stockings . . . the sooner the better."[50] Smith had just begun a six-year term as a Snell exhibition scholar at Oxford University with an annual income of forty pounds. Rather than buy stockings in town, he asked his mother to send them from Scotland. Stockings were both a "necessary and conveniency" in eighteenth-century parlance—essential to protecting oneself in a cold climate but also a source of comfort and status. In later life, when Smith took up the position of customs commissioner in Edinburgh, he favored white silk stockings to go with his linen coat, knee breeches, buckle shoes, and beaver hat. By that point, Smith's attire, while not quite as elegant as Hume's, was considered sartorially refined. But in 1741, he was surviving on scholarship money and whatever his mother could spare. The previous two winters had been severe; across Europe, persistently low temperatures had led to bad harvests, high grain prices, and increased mortality rates. Smith himself described 1740 as a year of "extraordinary scarcity." He probably worried that the winter of 1741 would be as harsh as the last one.[51]

Smith's letter to his mother anticipated many of his enduring interests in political economy. For Smith, the benefit of labor and exchange lay above all in the production of material goods that satisfied basic needs and comforts like wheat, wool, and timber. Food, clothing, and lodging were the "great wants of mankind." For this reason, the cycles of the natural world were never far from his mind. While he celebrated the productive potential of the division of labor, his view of industry was rooted

more in agriculture and skilled manual labor than in large-scale factory work or power sources like water and coal. It was not until Charles Babbage published *On the Economy of Machinery and Manufactures* (1832) that the factory system truly entered political economy. For Smith, the origin of wealth still lay in agriculture. For him, the surplus of the land fostered the growth of towns, new trades, and new manufactures. From humble origins like the knitting of stockings, capital began to accumulate thanks to the interplay of agricultural improvement with urban industry. While Smith left his readers with plenty of reasons to be optimistic about future economic growth, he never let them forget that human economies were always nestled within the limits set by the natural world.[52]

Smith differed from Hume in ascribing a larger role to nature in determining a nation's wealth. Smith wrote: "The land constitutes by far the greatest, the most important, and the most durable part of the wealth of every extensive country."[53] Without fertile soil, a nation could not feed its population of laborers. In English history, agricultural improvement had gathered momentum for more than a century, but in Scotland a much more recent change was playing out over Smith's own lifetime. In the middle decades of the eighteenth century, Scottish farmers achieved massive increases in agricultural productivity, expanding cereal yields by as much as a factor of three. Smith was very much aware of these changes. Around the same time that he began sketching a preliminary draft of *The Wealth of Nations,* Smith left his university position to become the private tutor of the future Duke of Buccleuch, a member of one of Scotland's wealthiest landowning families. While this new line of work took Smith on his first trip to the continent, where he met luminaries of the French Enlightenment, the position with Buccleuch also gave him an opportunity to experience firsthand the reorganization of a great estate in the Scottish Lowlands.

Nature was a gift to humanity that kept on giving. While labor and science augmented the productivity of the land, nature's myriad processes never stopped working in ways that benefited humanity. Wealth, for Smith, began with soil fertility: "In agriculture . . . nature labors along with man; and though her labor costs no expense, its produce has its value, as well as that of the most expensive workmen."[54] This "free" gift of nature was the source of a continuous surplus that made agriculture fundamentally

different from manufacturing production: "It is the work of nature which remains after deducting . . . everything which can be regarded as the work of man. It is seldom less than a fourth, and frequently more than a third of the whole produce. No equal quantity of productive labor employed in manufactures can ever occasion so great a reproduction. In them nature does nothing; man does all."[55]

Much of the inspiration for Smith's view of nature came from the French school of political economy known as the *physiocrats* (from the French word for nature's government). This movement emerged in response to a century of frustration with the French state's perceived prioritization of manufacturing over agriculture, cities over countryside, and merchants and manufacturers over nobles and farmers. In *Telemachus,* the epic fictional account of France noted in Chapter 2, François Fénelon lodged the complaint that Colbertism, the set of policies put in place by the powerful French minister Jean Baptiste Colbert, was wreaking havoc on the social order and undermined the nation's strength. Fénelon claimed that nobles and farmers lived in a sorry state of impoverishment, while city-dwellers reveled in luxuries. As wealth flowed into the cities and people became enslaved to false passions, traditional virtues were eroded and manners corrupted. Credit exacerbated the problem by allowing status-hungry individuals to finance their luxury consumption, only to end up in debt and misery. While there were many French thinkers, Voltaire and Melon included, who drew inspiration from Barbon and Mandeville and defended the new culture of luxury, the negative sentiments expressed by Fénelon lingered and eventually provided the moral foundation for the physiocratic program, headlined by Francois Quesnay, Victor Riqueti de Mirabeau, and Anne Robert Jacques Turgot.

The physiocrats put forth a theory that proclaimed that nature was the only resource capable of creating new wealth. In the spirit of vitalism, they saw nature as a vast number of benign processes spawning soils, mosses, grasses, plants, flowers, trees, fruits, berries, vegetables, and all the animals of the oceans, the air, and above and below the ground. This was anything but a mechanical operation that could be understood as a rational system; it was an organic world beyond human comprehension.[56] Instead of working to subdue or control nature, the physiocrats said, humanity should cooperate and enable it. This partnership would in turn bring prosperity to human society.

In value terms, land—the physiocrats' shorthand for nature—was the original source of all wealth. It provided for the subsistence of the laborers, yielded remuneration to the landowners, and produced a surplus, the so-called *produit net.* This surplus could be spent on manufactured goods or reinvested into agriculture. The proportions distributed to these two categories greatly mattered.[57] Because manufacturing did not add any new value—it was in their parlance "sterile"—it was essential that enough of the surplus was put back into agriculture. According to Quesnay's famous *Tableau Economique,* at least half of the surplus ought to go to the land. If the landowners failed to reinvest at this level, Mirabeau warned, "the death and extinction of Society and the human species" would ensue.[58]

To facilitate the flow of capital into agriculture, the physiocrats promoted the liberalization of the grain trade and the implementation of a single tax. They believed that free markets would prop up the price on agricultural goods and therefore make it more attractive for investors to commit their money to land improvements. A single tax on the *produit net* would simplify the tax-gathering process and free landowners and farmers from the myriad taxes and fees they now faced. By shifting the flow of wealth from manufacturing and commerce to the cultivation of the land, overgrown cities would retreat, while rural areas would once again flourish. This would put a stop to the rampant vice ignited by the quest for luxuries and restore the natural virtues associated with rural life. The physiocrats thus proposed their own form of Enlightened Scarcity: If enough resources were allocated to agriculture, the nation would not only enjoy the fullest benefits of nature's inherent bounty, but also see a reduction in people's preoccupation with excess luxuries. The tension between wants and wealth would be eased.

Smith agreed with the physiocrats that nature was a crucial source of value for the commercial economy, but he rejected their critique of manufacturing as a sterile form of production. It is telling that he chose to open *The Wealth of Nations* with a glowing paean to the productive potential of specialization and machinery, leaving his analysis of the foundational role of agriculture to much later in the treatise. Only in the third part of the book did Smith explain that the key to growth was the interplay between agricultural improvement and town manufactures. A fertile soil under cultivation produced the initial surplus that encouraged a population of workmen to develop and settle in towns. Over time, such urban

growth and agricultural improvement became locked in a virtuous circle of mutually advantageous trade. For Smith and his friends, this synergy of town and country was a way of life, not just an abstract model. In the learned Edinburgh clubs Smith frequented, he befriended both scientists and agricultural improvers. Among Smith and Hume's friends were the geologist James Hutton, the judge Lord Kames, the chemist Joseph Black, and the physician William Cullen: all of them were involved in agricultural improvement schemes. No doubt Smith would have heard more than his share of talk about dung and turnips.[59]

If soil fertility provided one pole in Smith's conception of Enlightened Scarcity, human desire offered another central topic of investigation. Much like Barbon and Hume, Smith saw consumer demand as endlessly malleable. While the needs of the stomach were limited, "the desire of the conveniencies and ornaments of building, dress, equipage, and household furniture seems to have no limit or certain boundary."[60] Nowhere was this stated more explicitly than in his parable about utility and desire in *The Theory of Moral Sentiments* (1759) concerning a poor man's son who succumbed to excessive ambition. Although Smith was hardly a literary stylist, in this passage he presented a kind of miniature novel, in the spirit of Defoe's *Moll Flanders* or *Robinson Crusoe*. Enamored with the affluent lives of the highest social classes, the son imagined that riches would bring him tranquility and happiness. To improve his position, he threw himself into the task of social climbing, ingratiating himself with his superiors and patrons. In the process, however, the son ruined his bodily constitution and mental state. Smith observed that what the social climber desired most was actually available to him from the beginning. He had sacrificed the "real tranquility that is at all times in his power" for an "idea of a certain artificial and elegant repose" that was completely out of reach. Wealth and power, Smith observed, were "enormous and operose machines" that produced "trifling conveniencies."[61] They offered scant protection from the genuine frailties and needs of human existence. "They keep off the summer shower, not the winter storm, but leave him always as much, and sometimes more exposed than before, to anxiety, to fear, and to sorrow; to diseases, to danger, and to death."[62] From this, Smith drew a radical lesson. He suggested that all classes could enjoy the same "ease of body and peace of mind," regardless of rank. A beggar could find as much security in life as the great landlord. The key problem was to master fear

and ambition. Smith here came close to the ancient Stoic ideal of *apatheia;* mental composure and freedom from passions ensured the best state of mind.[63]

For all his cynicism about the empty fulfillment of material riches, Smith also defended the desire to imitate the wealthy because he recognized that such emulation produced advantageous consequences for society as a whole. A total abnegation of desires and passions might please the ascetic, but if everyone embraced this kind of virtue, their conduct would reduce the overall wealth of the nation. Smith agreed with Hume that vanity and ambition goaded mankind toward advances in the arts and sciences and greater conquest of the natural world. Providence dictated that the fortune of the few directly served the welfare of the many by producing a surplus far greater than the elite could enjoy. Here, much in the spirit of John Locke, Smith conjured up an image of a large estate, where a landlord commanded his tenants to produce an abundant harvest. But the lord could only consume so much of the product: "The capacity of his stomach bears no proportion to the immensity of his desires."[64] From this "oeconomy of greatness" flowed a surplus that provided "necessaries of life" for thousands.[65] Thanks to the operation of this "invisible hand," the elite served the interests of society "without intending it" or even knowing it.[66]

Smith balanced this critique of the rich with a more sympathetic account of prudence and work among the common people. The "desire of bettering our condition," he observed, "comes with us from the womb, and never leaves us till we go into the grave."[67] All humans shared an impulse to work assiduously and to "save and accumulate" the fruits of their labor. In a liberal country with secure property and free enterprise, this impulse found ample reward. For "the greater part of men," the virtue of "frugality seems not only to predominate, but to predominate very greatly."[68] Fear rather than vanity was the motivating force for prudent people. They viewed bankruptcy as "the greatest and most humiliating calamity" that could "befal an innocent man."[69] This cautious approach also inspired a distinctive pattern of consumption. Prudent people purchased "durable commodities" of good quality and lasting value, buying land, buildings, and furniture, instead of spending on the wasteful and shortsighted consumption he associated with the elite.[70] Smith thus differed from Mandeville and Hume, for whom any kind of consumption benefited the

economy by putting the wheels of commerce in motion. The cumulative effects of the spirit of accumulation and prudent consumption could be seen everywhere in England. Over the last hundred years, the "private frugality and good conduct of individuals" had produced a growing capital to cultivate the land, expand manufactures, and maintain an increasing population. Prudential accumulation and consumption thus went hand in hand with the improvement of the natural world. For Smith, it was this "universal, continual and uninterrupted effort" that laid the true foundation of national wealth.[71] Smith's version of Enlightened Scarcity thus viewed nature and the economy, not as opposites locked into an adversarial relationship, but rather as partners in a process of improvement. Scarcity would not be eradicated, but both nature and economy would develop in such ways that human life would become more tolerable, across the social hierarchy.

Here we come full circle back to agriculture. Smith's optimism about human striving ultimately flowed from his view of the natural world. In difficult times, the poor had to act with foresight and temperance to withstand temporary shortages—rationing what little grain they had left and tightening their belts. But according to Smith, nature was never at fault when the perpetual condition of scarcity turned into serious hardship. The real cause of human suffering lay in politics rather than nature. Smith's views on dearth and famine reflected the fortunate circumstances of the English economy in the eighteenth century. Apart from some remote pockets, England had not experienced a widespread famine since the sixteenth century. Lowland Scotland too had escaped famine after the 1690s. However, a pattern of recurring famine persisted elsewhere in Europe and in the British colonies. Ireland saw pervasive excess mortality after the bitter winter of 1740. To explain these variations, Smith drew a strong distinction between natural dearth and man-made famine. Dearth should be expected, he insisted, in all countries in the temperate, grain-producing climate zone. It was a recurring and eternal part of the natural order. But famine was a different matter. Smith categorically denied that harvest failure might cause a famine in the wheat-growing regions of Europe under conditions of free trade with a good transportation system. If all countries joined together into a free-trading union with easy communications by land or water, then "the scarcity of any one country" could always be remedied through imports from another part of the continent. Dearth be-

came famine only when governments meddled with free trade in grain: "famine has never arisen from any other cause but the violence of government attempting . . . to remedy the inconveniencies of a dearth."[72]

This Enlightenment faith in the providential bounty of the natural world and the wisdom of the market also profoundly colored Smith's conception of the future. Since land was the most fundamental form of wealth, Smith reserved his greatest hopes for the British colonies in North America. There, land was plentiful and labor scarce. Consequently wages were high and couples married young. Population doubled every "twenty or five-and-twenty years."[73] The colonists also enjoyed secure property rights and light taxes. Smith had very little to say about the place of slavery in this order or the eradication of indigenous peoples by settlers. Extrapolating from these factors, Smith proposed that the American future was so bright that the New World would one day eclipse the power of Great Britain, a sentiment with which Hume also agreed. Political gravity within the British Empire would shift to the New World in "little more than a century."[74] As it turns out, Smith was not far off the mark with his prediction. But why was he so certain that Great Britain must decline in comparison with North America? The answer lies once again in his appeal to land as the ultimate foundation of wealth. In the Old World, where nations had long been settled with dense populations, the opportunities for growth were limited and the future tended toward a "stationary" condition. This occurred when a nation had "acquired that full complement of riches which the nature of its soil and climate . . . and its situation with respect to other countries allowed it to acquire." As a nation approached the limits to investment set by its soil and the climate, "the wages of labor and the profits of stock would probably be very low." Here, we glimpse again the agricultural foundation of Enlightened Scarcity in Adam Smith. The interplay of desire and markets ultimately depended on the fertility of land for the prospects of growth.[75]

Conclusion

At the end of the eighteenth century, a series of seismic shifts shook the social world that had shaped Hume and Smith's thought. The old regime teetered in France, giving way to constitutional democracy and then a radical republic. In Britain, the traditional order persisted, although

in a climate of sharpening polarization. Edmund Burke denounced the French revolutionaries in a 1790 polemic that helped give birth to modern conservative ideology. Thomas Paine counterattacked with a defense of universal suffrage in *The Rights of Man*. At the same time, Mary Wollstonecraft explored the possibility of new spaces and roles for women in *Vindication of the Rights of Woman* (1792).

In the pressure cooker of radical politics, the Enlightened idea of scarcity found a new expression in the work of the philosopher William Godwin (1756–1836). Educated at the Hoxton Academy, one of the so-called Dissenting academies established for Protestants unwilling to subscribe to the articles of the Anglican Church, Godwin arrived at a political position profoundly hostile to the traditional order. He viewed the growing inequality of British society with horror and embraced a vision of a fundamentally egalitarian future society. Like Hume and Smith before him, he saw incremental improvement as the proper goal of political economy. He also agreed that the moral striving of the individual could shape and refine desire. Indeed, Godwin was even more ambitious in his vision for human improvement than Hume and Smith had been. Godwin's aim was nothing less than the creation of a new kind of society, where the desire for material refinement and social distinction would come to an end.

As Godwin carried forward the legacy of Hume and Smith, he reformulated it in a number of distinctive ways. For Godwin, human needs were limited in scope, confined to "food, clothing and shelter."[76] Simple food was the key to well-being: "A frugal diet will contribute infinitely more to health, to a clear understanding, to chearful spirits, and even to the gratification of the appetites."[77] Hence, simplicity and frugality were inherently pleasant and attractive in accordance with human nature. The multiplication of wants in commercial society merely distracted from genuine welfare. Where Smith had praised the division of labor as a spur to industry and wealth, Godwin thought it would be better to simplify society, rejecting "unnecessary employments" and abolishing the "manufacture of trinkets and luxuries."[78] "Our only true felicity," Godwin insisted, lay in the "expansion of our intellectual powers, the knowledge of truth and the practice of virtue."[79] If the incessant pursuit of accumulation could be abolished, people would acquire the leisure to focus on the true source of happiness: the perpetual improvement of the mind. This new stage also marked the beginning of genuine sympathy with all other human beings.

Curiously, Godwin thought the perpetual improvement of the mind might eventually lead to the discovery of earthly immortality.

Godwin's hopes for a just society rested on what he called the "equalization of property."[80] No person should accumulate more than necessary to fulfill the basic needs of food, clothing and shelter. If people by chance fell short of this minimum, they had the right to expect help from their peers. In a state of equal property, humans would become accustomed to share their surplus freely "to supply the wants of their neighbor."[81] This interpretation of social harmony was underwritten by the abundance of the natural world. Godwin argued that inequality and monopoly had led to a gross neglect of agricultural potential. If the land was properly cultivated, Europe might maintain "five times her present number of inhabitants."[82] At the same time, the amount of labor needed to cultivate the land was far smaller than commonly assumed: "not more than one twentieth of the inhabitants of England are employed seriously and substantially in the labors of agriculture."[83] Echoing Thomas More's concept of Utopian Scarcity from the sixteenth century, Godwin argued that once work was apportioned equitably among all people, each individual would have to labor only thirty minutes per day to supply "the whole with necessaries."[84] This was a full five-and-a-half hours less than the workload of More's Utopians.

According to Godwin, this new social order would emerge spontaneously through rational deliberation and voluntary acceptance. Borrowing Smith's term, Godwin thought people would develop a sense of conscience, an "impartial spectator," by which to assess the moral significance of their actions. Such an inner compass would awaken them to the frivolity of luxury and the need to apportion wealth according to need rather than want. For this reason, Godwin opposed the path of violent revolution and state coercion so prevalent at the time in France: true justice could not be imposed from the top down.[85]

With Godwin, we reach the outer limits of the Enlightenment conception of scarcity. While both Hume and Smith believed in the progress of the sentiments, Godwin insisted that people's minds were capable of such extreme advancement that they would simply transcend the impulse to consume beyond need. In combination with nature's fecundity, a humanity cured of its false desires would be able to live in blissful sufficiency. Godwin's vision of the future relationship between the economy

and nature brushed up against radical new possibilities. Where Hume and Smith placed the prospects for improvement within the practical constraints of commercial society and its agrarian foundation, Godwin reformulated Enlightenment improvement to embrace a world utterly different from his own. In the next three chapters we will explore three major Finitarian responses to the Enlightenment version of scarcity in Romanticism, Malthusianism, and Socialism.

4

ROMANTIC SCARCITY

In December 1799, Dorothy Wordsworth (1771–1855) and William Wordsworth (1770–1850) moved into a modest house in the village of Grasmere at the heart of the English Lake District. Their move coincided with the first great age of tourism in the region. Well-to-do British travelers came in flocks to enjoy the dramatic scenery of the mountains and lakes. The Wordsworths shared this aesthetic impulse, but turned it toward lofty new goals. Dorothy and William had been born in the nearby market town of Cockermouth. They were the children of John Wordsworth, solicitor to the grandee James Lowther, first Earl of Lonsdale. Not quite locals but also certainly not tourists, the Wordsworths embraced the rural life in Grasmere as a source of inner renewal and spiritual transformation. By immersing themselves in the social life and natural world of this small place, they hoped to achieve a profound connection with the earth itself.

Their time in the village was lovingly recorded in Dorothy's journals. Weaving together high and low, she wrote of friendship and toothaches, gardening and insomnia, the work of the villagers and the cycles of the seasons. For Dorothy, journal keeping, no less than romantic poetry, made possible a new way of being in the world. Out of the daily routine of

household chores, nature walks, and conversations with neighbors and friends, she fashioned a life devoted to material simplicity and poetic experience. Consider, for example, the entry for June 20, 1802. After spending their late Sunday morning in the orchard, the siblings followed a favorite path out of the village while discussing household finances. Soon economic concerns were set aside. "We lay down upon the sloping turf. Earth & sky were so lovely that they melted our very hearts. The sky to the north was of a chastened yet rich yellow fading into pale blue & streaked & scattered over with steady islands of purple melting away into shades of pink."[1] For Dorothy, such encounters with the natural world had a restorative effect on the spirit, charging everyday life with poetic beauty and intense joy. Nature had the power to reorient the desires, away from the consumption of material goods and the striving for social distinction. Nature was not merely a source of resources to extract but a home, shared with many other species of animals and plants, to respect and cherish. By training the senses and the mind on the physical world, the observer could transcend the ordinary self, treading a path first opened by ancient mystics and philosophers. Dorothy wrote of the moment on the hillside: "It made my heart feel almost like a vision."[2]

On full display in Dorothy's journal and William's poetry is a romantic understanding of the relation between nature and economy. Not by accident, Dorothy wrote again and again in her journal of the comfort of circumscribed spaces. The vale of Grasmere was a sheltered microcosm, protected from the outside world. William, too, expressed this sentiment in his poetry: "Embrace me then, ye Hills, and close me in."[3] Mountains had become objects of beauty to the educated public during the Enlightenment. Crucially, the Wordsworth siblings went beyond mere aesthetic appreciation to celebrate the people and economy of the uplands. The mountains and marginal soils of the Lake District bred a special kind of virtue. For William, the landscape molded the psychology and morals of the inhabitants. While David Hume saw moral sentiment emerging in the commercial hustle and bustle of the city, the Wordsworths found virtue in humanity's engagement with nature. In the poem "Michael," William Wordsworth depicted the self-reliance and perseverance of a local shepherd as traits implanted by the difficult environment: "The common air, the hills . . . impress'd so many incidents upon his mind, of hardship, skill, or courage, joy or fear."[4] Lakelanders grew accustomed to a life of

material simplicity and independence, far away from urban society and aristocratic fashion. Dorothy admired the self-sufficiency and small scale of village life. Even the pages of her journal were recycled, with the price of paper so dear.[5]

The Charms of the Countryside

This embrace of village life was part of a broader revolution in sensibility that swept Europe's middling sorts in the late eighteenth century. Instead of understanding scarcity as an incentive to improvement and commerce, a new generation of poets and philosophers believed that scarcity demanded material simplicity. Instead of validating desires and consumption as pathways to human happiness, they prioritized living within the limits of nature as the necessary foundation of virtue and true community. Although this Romantic notion of scarcity celebrated traditional notions of

James Baker Pyne, *Grasmere from Loughrigg,* 1859. By the middle of the nineteenth century, Wordsworth's romantic experiment in simple living had become an object of middle-class tourism. *Credit:* Hanna Holborn Gray Special Collections Research Center, The University of Chicago.

restraint and limits, it departed from the Neo-Aristotelian and Utopian ideals by jettisoning conventional Christian morality in favor of a novel spirituality of nature. Inspiration for this alternative conception of scarcity came in great part from the philosophical writings of Jean-Jacques Rousseau (1712–1778).

Of all the eminent thinkers of the Enlightenment, Rousseau was possibly the most contrarian figure. A Genevan citizen by birth, from a modest background, Rousseau dazzled Europe with his learning even though he never received a formal education. He made contributions to political economy, political theory, and pedagogy while also penning two autobiographies. Like Adam Smith, he was enamored with natural history and promoted the botanical method of Carl Linnaeus. Though Rousseau lived in the public eye and became friendly with luminaries including Denis Diderot and David Hume, he remained deeply troubled by his own celebrity and longed all his life for solitude and an escape from commercial society.

In the 1750s, Rousseau shocked his Enlightenment contemporaries by mounting a frontal assault on the conventional understanding of civilization and progress. Life in the natural state, he argued in *The Discourse on the Origin and Foundations of Inequality Among Men* (1755), was the best possible condition for all people. The key to the good life was self-sufficiency: "So long as they applied themselves only to tasks a single individual could perform, and to arts that did not require the collaboration of several hands, they lived free, healthy, good and happy as far as they could by their Nature be."[6] In the absence of a division of labor and the institution of private property, contentment was within easy reach. Desires did not "exceed . . . Physical needs." For Rousseau, the faculty of human understanding was inextricably bound up with the state of the passions and the imagination. Since natural man had no knowledge of the world or the future, he had no reason to yearn for new things: "His imagination depicts nothing to him." The condition of humans in the natural state was insular and self-sufficient.[7]

Yet such harmony could not last. The drive for self-preservation among humans led them gradually toward a new state of being. Natural forces of different kinds—from small obstacles to wholesale disasters—provoked creativity and consciousness. By responding to external pressures of various kinds, natural men learned how to master nature, little

by little. This new sense of control in turn "aroused the first movement of pride."[8] Early people formed families, learned how to use tools and build huts, introducing the earliest "sort of property."[9] According to Rousseau, natural men acquired "several sorts of conveniences unknown to their Fathers."[10] Soon, these desires became habitual and "degenerated into true needs."[11] From the proliferation of artificial needs followed discord and vanity. "Everyone began to look at everyone else and to wish to be looked at himself."[12] In this way, the march of progress led further and further away from the original equality. Rousseau argued: "iron and wheat . . . civilized men, and ruined Mankind."[13] Not only did improvement increase inequality, it also obscured the true origin of freedom. Civilized men, like domesticated horses, had come to love the shackles of their captivity: "They call the most miserable servitude peace," much like the barbarians who had given up their freedom in exchange for Roman baths and granaries.[14]

Rousseau staunchly opposed the notion, embraced by Hobbes, Barbon, and others, that the human mind was, first and foremost, governed by self-love. He argued that his fellow philosophers had made a cardinal mistake by failing to recognize that the selfishness of modern man was a product of particular social arrangements. When philosophers limited their inquiries to the social world wrought by private property, money, and commerce, they ended up with a blinkered view of human potential. To discover the actual tendencies of human nature, one had to strip it of all the trappings of modern life. This was the purpose of Rousseau's conjectural history of the "savage" stage.[15]

Natural man, Rousseau insisted, was indeed defined by self-love, but of a kind very different from that assumed by earlier philosophers. The object of what he called *amour de soi* was "our preservation and our well-being."[16] *Amour de soi* was "contented when our true needs are satisfied." Such needs were always limited in numbers and scope; they remained concrete and specific.[17] Self-love as Rousseau defined it was accompanied by another natural sentiment; pity operated in every individual by moderating self-love and, as such, provided the foundation for all the social virtues. "Indeed," Rousseau asked rhetorically, "what are generosity, Clemency, Humanity, if not Pity?" Even "benevolence and friendship" were grounded in pity.[18] Together, *amour de soi* and pity produced harmonious relations between people and between humanity and nature. Once

humanity embarked on its ceaseless quest for ever more property, and it became important to people to display their riches, the "gentle voice" of *amour de soi* was drowned out by a different, louder, and more aggressive self-love which Rousseau termed *amour propre*.[19] Not unlike Nicholas Barbon's infinite "wants of the mind," this was a pleasure that came from feeling superior to others. In Rousseau's words, "the ardent desire to raise one's relative fortune less out of genuine need than in order to place oneself above others, instills in all men a dark inclination to harm one another, a secret jealousy." The result was "always the hidden desire to profit at another's expense."[20] The ability to feel pity and sympathize with other people had now been transformed into *identification,* the act of seeing oneself through the eyes of others.[21]

Modern man's psychological disposition sparked a new condition of scarcity. Whereas for natural man "desires do not exceed his Physical needs," people living in commercial societies were oppressed by a "multitude of new needs."[22] Their constant striving for more material riches made them lose touch with their inner self and corrupted their relationship to both nature and humanity. Rousseau summed up the alternatives: "What makes man essentially good is to have few needs and to compare himself little to others; what makes him essentially wicked is to have many needs and to depend very much on opinion."[23] Once people fell under the spell of *amour propre,* they lost the capacity to see beyond or to check their "greedy, ambitious, and wicked" self-interest.[24] Instead, they internalized a desire for ever more consumption and embraced the fact that their lives would be defined by endless toil. They became like a trained horse, who "patiently suffers whip and spur," while their former selves would have been more like the untamed steed, who "bristles its mane, stamps the ground with its hoof, and struggles impetuously at the very sight of the bit."[25] This version of scarcity was not class-based, as it had been for Gerrard Winstanley, leader of the seventeenth-century Digger movement. In Rousseau's world, all people were trapped in a vice that kept on tightening as human wants expanded.

Rousseau's critique of civilization took the history of stages and progress so central to the Scottish Enlightenment and turned it upside-down: the greater the complexity and sophistication of social and economic development, the more humans sank into corruption and depravity. Still, even after the rise of the institution of property and the end of what

Rousseau called the savage state, he saw ways of avoiding moral failure. When Rousseau considered positive prescriptions for political reform, he tended to favor societies with a simple division of labor. If mankind was "made up exclusively of husbandmen, soldiers, hunters and shepherds," it would be "infinitely more beautiful than" a society "made up of Cooks, Poets, Printers, Silversmiths, Painters, and Musicians."[26] Nature had endowed people with the instincts "to feed, to perpetuate, and to defend" themselves.[27] Men could turn these simple instincts into virtues by guiding them with reason and managing them wisely. "The ancient Republics of Greece" had prohibited all occupations of a "quiet and sedentary" sort that corrupted the body and enervated the "vigor of the soul."[28] In Greece, the state "where virtue was purest and lasted the longest" was Sparta, the nation without philosophers.[29]

In modern times, remnants of such virtues still persisted in republican states and rural societies on the periphery of commercial civilization. Rousseau often praised the simple communities of the Swiss Alps, where he had spent his youth. The mountainous country near Neuchâtel was dotted by small farms, "each one of which constitutes the center of the lands which belong to it," and their inhabitants enjoyed "both the tranquility of a retreat and the sweetness of Society."[30] Every farmstead functioned as a self-contained unit: "each is everything for himself, no one is anything for another." The peasants were free, lived in comfort, and, unlike their French counterparts, were not subject to excessive taxes or forced labor. Swiss people exhibited "an amazing combination of delicacy and simplicity" that Rousseau had "never since observed elsewhere."[31]

For Rousseau, the self-sufficient habits and values of the Swiss served as an inspiration to imagine an alternative path of human flourishing—the condition we call Romantic Scarcity. In his sketches for the constitutions of Corsica (1764–1765) and Poland (1771–1772) he set out to explain how a nation might avoid the pitfalls of commercial society. In the Polish case, perhaps the greatest challenge to achieving this ideal was the sheer size of the country. For true patriotism and democracy to flourish, citizens must feel they are constantly in the public eye. "Almost all small States, republics and monarchies alike," Rousseau noted, "prosper by the sole fact that they are small, since all the citizens in them know each other and watch each other, since the leaders can see by themselves the evil that is done, the good they have to do; and since their orders are executed under

their eyes."[32] A second critical factor was to limit the influence of money. By converting the army into a national militia along Swiss lines, the Polish government could avoid a huge financial expense. In this way, Rousseau hoped to resist not just the logic of capital accumulation but also the growth model embodied by military states funded by public debt and heavy taxes.

In the case of Corsica, Rousseau argued that geographic insularity and social simplicity would allow the country to follow the Swiss path. Mountains, islands, and a largely rural population helped insolate society from moral corruption. In the plan for a Corsican constitution, Rousseau resisted the use of money and long-distance trade. Taxes should be paid in kind and the size of administration kept to a minimum. Agricultural labor was the best occupation for the people, encouraging physical vigor and peace of mind. Whereas commercial polities like France and Britain inflamed the passions of their populations with objects of consumption that stirred up envy and competition, Rousseau's constitution would channel the desires of Corsica's citizens toward simple needs and relative equality in the austere spirit of Sparta or republican Rome. Farmers who cultivated the land were by nature more attached to the nation than cosmopolitan city-dwellers were. Since the demanding and diverse character of agricultural labor required "constant attention," it prevented rural people from developing the vices associated with leisure. Farming work made them "patient" and "robust" in spirit.[33]

Proper pedagogy provided another key to moral probity. Rousseau hoped to instill in Corsica's children the right norms and habits. Here he followed closely the precept laid out in his treatise *Émile* (1762): "observe nature and follow the path it maps out for you."[34] Rural people should be guided by the moral authority inscribed in the natural order. Agricultural work was the most "decent, the most useful, and consequently the most noble," though the artisanal trades, such as ironworking and woodworking, were also respectable and salubrious.[35] Manual labor generally brought the workers "closest to the state of nature."[36] Rousseau welcomed refinements in the arts or improvements in technology, not as a means to control the natural world in the sense of Bacon or Hartlib, but rather as a way to fulfill truly essential needs. Yet the defense of this constitution contained a fatal weakness: the internal harmony of Corsica required an agrarian economy too small and simple to protect the nation from any ex-

ternal aggression by richer neighbors. Rousseau never explained how his austere virtues could safeguard the independence of his new republic in an age of commercial warfare and imperial rivalries.[37]

While Rousseau's political visions failed to bear fruit, his ideal of Romantic Scarcity was easier to embrace in private life. Rousseau himself made clear in his autobiography that the peace and tranquility of the simple life was not reserved for local farmers but could also be experienced by educated people. In 1765, Rousseau spent two months on the island of St. Pierre in Lake Bienne, near Bern. He described the pleasure of solitude in ecstatic terms. On the island, he felt entirely "self-sufficient, like God."[38] Such autonomy was accompanied by a profound change in his perception of time. During his stay on the island, Rousseau felt no need to "recall the past or encroach upon the future." Instead, his sense of the present ran on without a sense of duration, indefinitely.[39] This experience closely resembled Rousseau's idea of early human life. For prehistoric people, the experience of time was closely tied with sharply bounded desires: "His modest needs are so ready to hand . . . that he can have neither foresight nor curiosity. . . . His soul, which nothing stirs, yields itself to the sole sentiment of its present existence, with no idea of the future, however near it may be, and his projects, as limited as his views, hardly extend to the close of day."[40]

The Simple Life

In the late Enlightenment, the dream of the simple life found a popular audience through works of fiction and poetry. Rousseau himself paved the way here with his novel *Julie, or the New Heloise* (1761). This was the story of the doomed romance between a young noblewoman and her middle-class tutor, told through a tempestuous exchange of letters. Although Julie acquiesced to an arranged marriage, the novel ended happily with husband, wife, and lover reunited in domestic harmony on Julie's estate in the Alps. Here they could follow the precepts of nature in a sheltered microcosm far from city life. Rousseau's book became wildly popular with eighteenth-century readers. Rustic manners and mountain scenery also added to the broad appeal of the narrative. Indeed, Rousseau defended the merits of his novel as a rare and singular work of literature that would induce virtue, as long as it was read at a great distance from Parisian high society. A generation later, Rousseau's student and friend Jacques-Henri

Bernardin de Saint-Pierre (1737–1814) reworked many of these themes in his bestselling 1788 novel, *Paul et Virginie*.[41] The protagonists of the title were two shipwrecked children growing up in Arcadian innocence on the island of Mauritius. Where their predecessor Robinson Crusoe had used his island solitude to remake himself into an agent of bourgeois industry, Paul and Virginie embraced a self-sufficient household economy that kept them safe from the artificial and vicious desires of urban society. They knew nothing of the past or the future beyond the bounds of their mountain: "Solitude, so far from making them savages, had made them more thoroughly civilized. If the scandal of society gave them nothing to talk about, nature was at hand to fill them with delight."[42] *Paul et Virginie* enjoyed popular success into the nineteenth century, though curiously its readership shifted from adults to children over time. Dorothy and William Wordsworth were both avid readers of Bernardin de Saint-Pierre. We can understand their move to Grasmere in December 1799 in part as an attempt to emulate the virtues and sentiments of *Paul et Virginie*. Here was a northern counterpart to the secluded island home in the novel. Dorothy and William were self-consciously embracing a simple, self-sufficient existence, purged of artificial desires, what Dorothy called "plain living but high thinking."[43]

The house at Grasmere had until recently served as a coaching inn, called The Dove and Olive Bough, on the main road between Ambleside and Keswick. There were four small rooms to each floor. Downstairs was a living room with dark wall panels, stone floors, and a cooking range. In the back was a buttery cooled by an underground streamlet. Upstairs, Dorothy papered the walls of the bedroom with newspapers to keep out the cold. The rooms were furnished comfortably but without ostentation. As a working household, it was also a simple operation. Dorothy had the help of a neighbor who did the cooking and washing. From the beginning, she and William saw their new home as a "cottage." This word had acquired a new, special ring in the eighteenth century. Improvers encouraged the building of functional cottages to house tenants on estates. Architects were also beginning to design genteel cottages for the wealthy as fashionable spaces of retreat from the city.[44] Dorothy made the idea her own by associating it with sibling love and the charms of a modest home. After the death of their parents, she had lived apart from William among relatives in different places. In a letter to a friend written in 1793, she imagined

cottage life as a kind of earthly paradise: "I am alone; why are not you seated with me? And my dear William why is not he here also? . . . I have chosen a bank where I have room to spare for a resting place for each of you. I hear you point out a spot where, if we could erect a little cottage and call it *our own* we should be the happiest of human beings."[45] When Dorothy and William signed the lease for the house and renamed it "Dove Cottage," they were fulfilling Dorothy's dream of a safe haven and also beginning a self-conscious experiment in simple living, inspired by Rousseau and Bernardin de Saint-Pierre.

Life in Grasmere had a strongly communal dimension. Unlike Paul and Virginie, the Wordsworths had plenty of neighbors. Dorothy and William were both fascinated with the rugged character of local shepherds and farmers. William believed that the difficult terrain of the region expanded and elevated the mind by instilling virtues of endurance and self-sufficiency. Sheep farms were not idylls of pastoral repose but places of relentless and solitary labor. In the poem "Michael," Wordsworth told the story of an aging shepherd who sent his son away to pay off a debt to secure the patrimony of the farm. But he lost both farm and heir when the son fell in with bad company in the city. For Wordsworth. Michael's only error was that he loved the farm "even more than his own Blood."[46] This was not simply a matter of poetic sentiment to Wordsworth but a political observation of great significance. Wordsworth believed that the small farmers of the Lake District, known locally as "statesmen," presented a bulwark for British liberties against radicalism. Writing in a time of economic dearth and revolutionary turmoil, Wordsworth suggested that the independence and modest needs of his shepherd-farmers offered a moral example for poor people everywhere. This was the best remedy against servile dependence on "workhouses . . . and Soupshops."[47]

Amour propre in Rousseau's sense held little sway in Wordsworth's social order. In the poem "Michael," the shepherd and his wife live a simple life of few wants. Their diet consists of "pottage and skimm'd milk . . . with oaten cakes and . . . plain homemade cheese."[48] Despite this meager existence, Michael and Isabel are entirely content. "We have enough," the shepherd tells his wife.[49] Among their few possessions is an old lamp—"an aged utensil"—which shines in the window of their cottage every night, a sign of simple constancy.[50] There was no place in Wordsworth's poem for Nicholas Barbon's restless version of human psychology—perpetual

longing spurred by the desire for absent objects. Michael's only regret is the loss of his son. The bonds of family and community form the true sources of satisfaction.[51]

A shadow of doubt has long lingered over Wordsworth's pronouncements about the Lakeland peasantry. Although his poetry has been immensely influential, its social vision remains contested. Skeptical observers see Wordsworth's notion of the statesman-farmer as the brainchild of a certain kind of conservative idealism. Such skepticism finds support in the social circumstances surrounding his work as a poet. For all of Wordsworth's sympathies with shepherds and farmers, he lived apart from them, a Cambridge-educated, middle-class man who found national fame and eventually became poet laureate of Great Britain. Though he was a passionate advocate of hill farming, he never fully grasped its meaning or nature. When the clergyman Hardwicke Rawnsley collected testimony about Wordsworth's life and reputation a generation after his death, he found that local people had few kind words for the poet. They remembered him as an aloof outsider and even disparaged his talents as a poet. To gain a better sense of the experience of rural life in the period, we might turn instead to Wordsworth's near contemporary, the Northamptonshire poet John Clare (1793–1864).[52]

Neglected by critics and readers until the twentieth century, Clare is now recognized as a leading figure in romantic literature. In his lifetime, Clare struggled to find recognition. In contrast with Wordsworth's origins, his were unequivocally plebeian. His father, Parker Clare, was a farm laborer and the illegitimate son of a schoolteacher. Lacking connections and patronage, John Clare received a brief and uneven education in the local school. At the age of thirteen he came by a copy of James Thomson's poem "The Seasons" that inspired him to try his own hand at poetry. In 1819 a local bookseller put him in touch with a London publisher, opening the door to his brief literary success as a "peasant poet." But his later writings met with public indifference. In his forties, Clare succumbed to mental illness. The contrast between Clare and Wordsworth is sharp. After the lean years in Dove Cottage, Wordsworth was able to move to the far larger establishment of Rydal Mount. Profiting from his fame and connections, he secured a lucrative post as Distributor of Stamps for Westmoreland in 1812. By the time Wordsworth became poet laureate in the 1840s, Clare was locked up in Northampton General Lunatic Asylum, where he spent the final twenty-three years of his life.

Clare's poetry was shaped above all by the social experience of enclosure. An Act of Parliament enclosed his native parish of Helpstone in 1807, setting off the kind of hardship and dislocation that Winstanley had captured almost two hundred years earlier. The old landscape of open fields and commons was destroyed. Villagers could no longer claim customary use rights to gather firewood and graze livestock on common land. Clare's poetry describes in vivid detail the social and environmental devastation wrought by the new regime of property rights. In poems like "Helpstone," "The Mores," and "Remembrances," he bore testimony to the lost world of his childhood when the land was still held in common. This, Clare insisted, had been an age of "Peace and Plenty . . . known to all."[53] The landscape before enclosure was a patchwork of woodlands, heaths, greens, and other forms of "waste"—rich with resources accessible to the entire local community. In his poetry, Clare resurrected this landscape, reminding the reader of its complex geography and social meaning. If you could name all these things and places, you could also make a claim to possess the landscape. In "Remembrances," Clare hinted at the myriad ways in which the child learned about the uses of common land through play and work. "When jumping time away on old cross berry way / And eating awes like sugar plumbs ere they had lost the may." Like More and Winstanley before him, Clare was an eyewitness to the ravages of agrarian capitalism and the cruel logic of Enclosure Scarcity. But Clare's poetic sensibility also set him apart. He distilled from the experience of enclosure a romantic vision of community and the natural world quite different from that of More and Winstanley.[54]

The disaster of enclosure had leveled Clare's childhood world and turned it into a "desert by the never weary plough."[55] A multifaceted landscape rich in material uses and social meaning had been denuded and simplified to make way for widespread improvement.

> The bawks and Eddings are no more
> The pastures too are gone
> The greens the Meadows and the moors
> Are all cut up and done
> There's scarce a greensward spot remains
> And scarce a single tree
> All naked are thy plains
> And yet they're dear to thee.[56]

In the poem "Helpstone," Clare contrasted true and false abundance. The "Peace and Plenty" of the commons benefited the whole community whereas the "accursed Wealth" of enclosure was the property only of a "few."[57] This judgment rested not just on the value of equality but also on an economy of sufficiency. For Clare, a cottage home represented stability, shelter and the comforts of the hearth. One of the few modest triumphs of his difficult life was the offer from Lord Milton in 1832 of a "most comfortable cottage" with "an acre of orchard and garden, inclusive of a common for two cows, with a meadow sufficient to produce fodder for the winter."[58] Yet in Clare's poetry, the economy of the household could not be separated from the commons. This was a plebeian version of Romantic Scarcity, defending the needs and livelihood of the common people. Over and over again in his writings, freedom and value emerged from the love of simple pleasures associated with communal life and the natural world. The social historian Jeanette Neeson confirms that common land conferred invisible earnings outside the market system. But she also observes that the abundance of the commons presupposed a particular conception of desire: "Commoners had little but they also wanted less."[59]

The act of enclosure produced physical hardship for peasant occupiers by destroying woodlands and pasture. Clare turned to the animal world to convey his sense of horror. Farmers and gamekeepers would string up moles and other vermin on their fences as a warning to all pests and other trespassers. Such policy brought to mind the systematic terror and destruction wrought by Napoleon's reign on its conquered subjects.

> Inclosure like a Buonaparte let not a thing remain
> It leveled every bush and tree and leveled every hill
> And hung the moles for traitors—though the brook is running
> still
> It runs a naked brook cold and chill.[60]

We see here how deeply the social and the natural world grew intertwined in Clare's mind. The defense of village communities went hand in hand with a keen appreciation of the rural landscape before enclosure. In this way, social criticism became a bridge toward an extended sense of community beyond the human realm. Moles were people, too.

Once Clare started to think this way about wild things, his poetry took an unexpected direction. In a series of astonishing poems about the birds of the local landscape, Clare began to imagine what the human community looked like from the *outside*. Snipes, sand martins, fern owls, thrushes, and nightingales all made their homes in the woods around Clare's native village. They, too, formed communities in distinct landscapes (the concept of the habitat came into use around this time). Their nests were miniature dwellings, built to offer comfort and security. But their lives were shaded by constant fear of outside threats—above all, human trespassers. Clare knew intimately the destruction wrought by hunters and collectors. He had grown up climbing trees and plundering nests for pleasure.

Such a bird's-eye view, looking down at people from the treetops, collapsed all distinctions of property and class, showing humans only as an undifferentiated and predatory mass. The same shift in perspective also revealed the intrinsic value of the natural world beyond economic use. In the woodlands, Clare found a sense of peace and refuge from the strains of village life and literary ambitions. Birds were free from "meddling toil" and "artificial toys" and "mercenary spirit."[61] This joyful encounter with the wild went hand in hand with an ethos of restraint. Clare no longer plundered nests but was content to observe and record. His eyes opened to the value of natural obstacles to exploitation. Wetlands offered safety from nearby human population. "Boys thread the woods / To their remotest shades / But in these marshy flats these stagnant floods / Security pervades."[62] Here was an ecological reason to resist enclosure, distinct from the defense of common use rights. A landscape that had not yet been drained and cultivated could serve as a sanctuary for wild things. More than a generation before the first move toward systematic conservation in Britain—the 1869 Act for the Preservation of Sea-Birds—Clare's defense of the traditional landscape nudged him toward a deep and radical sympathy with the diversity of nonhuman life forms.

The Stationary State

Clare was not alone in turning to the natural world for solace and pleasure. John Stuart Mill (1806–1873), for example, is someone now remembered principally as a philosopher and political economist, but he was also a

lifelong plant hunter and amateur botanist. The young Mill, driven to nervous breakdown by his father's harsh pedagogical regime, looked to the natural world for escape and distraction. One of his proudest achievements was the survey he made of the flora in his native Surrey—incidentally, also home to St George's Hill, where Winstanley and his Diggers protested the enclosures. Mill's private passion for plants also influenced his social and political vision. In later life, he became a defender of common access to landscapes of outstanding natural beauty. He founded the Common Preservations Society and the Land Tenure Reform Association. Like Clare, Mill came to see human activities as a threat to the natural world. When the Royal Horticultural Society introduced a prize contest for the best herbaria in Britain, Mill sounded the alarm in a letter to *The Gardener's Chronicle and Agricultural Gazette* that such a competition might trigger a scramble of amateur collectors, with devastating ecological consequences. "Already our rare plants are becoming scarcer every year," he warned. "You are, no doubt, aware how rapidly, for example, the rare Kentish Orchids are disappearing." The herbarium contest might encourage ignorant "dabblers" to uproot and destroy native flora across the country so that "the present year 1864 will be marked in our botanical annals as the date of the extinction of nearly all the rare species in our already so scanty flora."[63] Like Clare, Mill worried that human activities, even in the form of well-intentioned scientific efforts of inventory, was diminishing the diversity of wildlife. He compared the present threat to the native flora to the outright extermination campaigns carried out against predators in the past, which had brought the wolf, bear, and beaver to extinction in the nation. Together with Charles Darwin, Mill helped organize a petition to the Royal Horticultural Society to alter the rules of the contest. They emphasized that botanical extirpation was a direct consequence of agricultural improvement. Because of high land values and intensifying productivity, "many wild plants" had reached the point of being confined to a few or even to single localities, often of small extent."[64]

Viewing Mill's work through a botanical lens, we gain a new perspective on one of the most puzzling and famous aspects of his work: his discussion of the stationary state in *The Principles of Political Economy* (1848). In this short chapter toward the end of the book, which was heavily influenced by his long-term partner, Harriet Taylor, Mill warned that the "richest and most prosperous countries would very soon attain the stationary state"

unless "improvements were made in the productive arts" and capital was poured into "the uncultivated or ill-cultivated regions of the earth." Like the political economist Thomas Robert Malthus (to be discussed in Chapter 5), Mill feared that the speed and scale of modern growth was carrying the advanced economies toward a permanent ceiling beyond which they could not pass: "all progress in wealth is but a postponement of this . . . each step in advance is an approach to it." The prospect of stagnation was no longer distant but "near enough to be fully in view . . . we are always on the verge of it."[65] For Mill, this crisis also threatened the diversity and wilderness of the natural world, with "every rood of land brought into cultivation . . . all quadrupeds or birds which are not domesticated for man's use exterminated as his rivals for food . . . and scarcely a place left where a wild shrub or flower could grow without being eradicated as a weed." A crowded, domesticated world without wild spaces would harm the human mind irreparably, since "solitude, in the sense of being often alone, is essential to any depth of meditation or of character." Embracing a position that anticipated the conservationists of the late nineteenth century, such as John Muir, Mill observed that "solitude in the presence of natural beauty and grandeur, is the cradle of thoughts and aspirations, which are not only good for the individual, but which society could ill do without."[66]

Yet, the moral lesson of this forecast also made possible an alternative ending to the history of capitalism. In Mill's version of Romantic Scarcity, humanity could embrace the possibility of the stationary state "long before" the physical limits on growth became pressing and severe.[67] Such a choice would permit people to transcend the brutality and ugliness of industrial society. "I am not charmed," Mill noted wryly, "with the ideal of life held out by those who think that the normal state of human beings is that of struggling to get on; that the trampling, crushing, elbowing, and treading on each other's heels, which form the existing type of social life, are the most desirable lot of human kind."[68] In reality, the industrial age was merely a passing phase—a necessary stage in civilization, to be sure, but not the crowning glory of human society. This stationary society would be free to redirect its fundamental creative urges in new directions: "There would be as much scope as ever for all kinds of mental culture, and moral and social progress; as much room for improving the Art of Living, and much more likelihood of its being improved, when minds ceased to be

engrossed by the art of getting on."[69] Throughout the chapter, Mill characterized the problem as a universal choice of the "species" rather than the path of a single class or a nation. He also framed the value of the stationary state in terms of stewardship and the preservation of wildlife: "It is not good for man to be kept perforce at all times in the presence of his species."[70]

Even though Mill's book *Principles of Political Economy* represents a great synthesis of nineteenth-century economic thought, it is actually a curiously uneven reflection of British industrial society. There is little detailed commentary in it on the factory system and the industrial slums. When Mill launched the term "industrial revolution," he used it to describe the intensification of industriousness in early commercial societies rather than the coming of the factory age.[71] A large portion of the first part of the book was occupied with a comparative history of land tenure. Though Mill did not support radical land reform, he saw moral value in ownership of small farms. A claim to land instilled virtues of "prudence, temperance and self-control" in the peasant class.[72] Here, he echoed Harriet Martineau's ideas of self-improvement and foresight (we will discuss Martineau's views in Chapter 5). But just as important was Mill's devotion to William Wordsworth's poetry and his pilgrimage to the Lake District in 1831. He praised the Lakeland hill farmers as a vestige of the "yeomanry" of the Middle Ages.[73] In this and other ways, Mill tempered his analysis of political economy with an idea of Romantic Scarcity that illuminated the potential for moral virtue among the rural poor.

For some Victorians, Mill's "Art of Living" was not a distant prospect but a matter of urgent action. In 1872, the political economist and artist John Ruskin (1819–1900) moved from London to the shores of Coniston Water in the English Lake District. He came to the north in search of refuge. The countryside offered a sanctuary from the consumerism and pollution of the Victorian city. At his house, Brantwood, overlooking Coniston Water and the Old Man—the great hill to the west of the village—Ruskin launched a utopian movement against mass consumption on behalf of the "workmen and laborers of Great Britain." At the heart of the project was the revival of handicraft industry in the Lake District between 1880–1920.[74]

For Ruskin and his allies, the aim of their movement was to anticipate a post-industrial future. In the twenty-ninth letter of his *Fors Clavigera* serial (1873), Ruskin urged his followers to look forward to a "sweet

spring-time" for "our children's children . . . when their coals are burnt out, and they begin to understand that coals are not the source of all power Divine and human."[75] Ruskin's prediction echoed the forecast made by William Stanley Jevons in *The Coal Question* of 1865. Jevons had calculated then that British coal consumption would soon face increasing costs of extraction. Not too far into the future, Britain would lose its status as a great manufacturing nation and become a post-carbon society. Ruskin's arts-and-crafts community in the Lake District sought to establish an alternative economy—no longer dependent on coal and steam—but founded on skilled work and communal bonds. This vision of artistic artisans engaged in joyous creative work looked to a highly idealized version of medieval history to imagine the end of industrial capitalism.[76]

During the 1870s, Ruskin became increasingly concerned with the environmental degradation caused by industrial capitalism. From his windows at Brantwood, Ruskin charted unsettling and unprecedented phenomena in the skies above the Lakeland hills. The prevailing winds from the southwest brought smoke from the nearby manufactures on the coast. On his annual trips to the Alps, he bore witness to a warming trend in the mountains. As early as 1863, Ruskin had noticed that the glaciers near Mont Blanc appeared to be in retreat. Ten years later, he concluded that a third of the ice sheet in the Alpine glaciers had vanished in less than a generation. From these uncanny observations, Ruskin concluded that the climate was undergoing a sinister change, what he later called "The Storm-Cloud of the Nineteenth Century." Already in the fifth *Fors Clavigera* letter in 1871, he warned about the planetary reach of atmospheric pollution: "You can vitiate the air by your manner of life, and of death, to any extent. You might easily vitiate it so as to bring such a pestilence on the globe as would end all of you."[77] The ever expanding appetite of consumers threatened to make the entire world into a coal mine or factory. At mid-century, John Stuart Mill had seen the fundamental environmental problem as one of preserving rural haunts and wildlife from the encroachments of agriculture and suburban sprawl. But for Ruskin in 1871, the destructive power of industrial capitalism had coalesced into a new kind of threat. It was now a planetary force capable of polluting the atmosphere, even to the point of changing the earth's climate. Little did he know what the future held in store.

Strangely, the remedy for the Storm Cloud lay in the realm of the mind. Men and women must be taught not to want useless things. Wise

consumption demanded an education of desire. "Three fourths of the demands existing in the world are romantic; founded on visions, idealisms, hopes and affections," Ruskin suggested, "and the regulation of the purse is, in its essence, regulation of the imagination of the heart."[78] The aim of the arts-and-crafts movement was to encourage consumers to reorient their desires away from conventional middle class goods toward art, history, and natural beauty. By refining the faculty of aesthetic judgment and the acquiring natural knowledge of the world, one would find new and better objects of desire. Ruskin also encouraged a deeper understanding of production processes. Wise consumption required a critical grasp of the labor conditions and the nature of supply chains: "In all buying, consider, first, what condition of existence you cause in the producers of what you buy; secondly, whether the sum you have paid is just to the producer, and in due portion, lodged in his hands."[79] In the place of industrial capitalism, Ruskin promoted an artisanal ethic of work that went against the grain of conventional political economy. Workers should confine production only to those articles that were genuinely useful to the consumer. Instead of flooding the world with cheap and disposable commodities, the workman should concentrate on objects of durable design and artistic merit that truly served human need and welfare. The "intrinsic value" of an object lay in "the absolute power" it possessed to "support life." Ruskin meant by this a mixture of biological necessity and aesthetic beauty: "A sheaf of wheat of given quality and weight has in it a measurable power of sustaining the substance of the body; a cubic foot of pure air, a fixed power of sustaining its warmth; and a cluster of flowers of given beauty, a fixed power of enlivening or animating the senses and heart."[80] By this standard, most middle class objects of consumption fell short of genuine value.

Ruskin's movement was at the same time a philosophical and practical experiment. Choices about what to consume at the level of the household also shaped the nation and the natural world. Through the education of desire, the Ruskinians sought to redefine the relationship between economy and nature. In practice, they tried to demonstrate that the good life depended on skilled work and artful simplicity rather than conventional status and wealth. This impulse animated a revival of handicraft as well as new currents in architecture, education, and landscape design. Central to the movement was a form of social preservationism, dedicated simultaneously to protecting the environment and the customs of the Lake

District. In this way, Ruskin and his followers hoped to foster a self-conscious culture of sufficiency, steering a middle course between abundance and deprivation.

Conclusion

Perhaps above all, what united the line of romantic thinkers from Ruskin back to Rousseau was a sense of the spiritual importance of nature to human welfare. Their main contribution was to imagine ways of dwelling in the world that limited human use and made room for the flourishing of other species. Rejecting the engineering ambition of seventeenth-century Cornucopian ideology as well as the industrialism of the nineteenth century, romantic thinkers refused to see the world merely as a resource, a standing reserve available for human exploitation. Clare's bird poems took stock of humanity from an external point of view. Mill wanted to make room for the nonhuman in the world by limiting economic growth. Ruskin presciently understood the planetary threat posed by industrialization, anticipating twentieth-century concerns about the overloading of the atmosphere with pollution. At the same time, romantic thinkers spurned the restless play of consumer desire. To be at home on earth was to limit human wants and economic growth, choosing a simple and slow life open to the natural world. Romantic Scarcity thus weaves together a philosophy and an aesthetic of the organic interplay between human and nonhuman lifeforms.

In political terms, romanticism has left an ambiguous legacy. One current of the movement tended toward illiberal nationalism. The fascination with peasant life and self-sufficiency produced disturbing xenophobic and racist echoes in twentieth-century fascist ideology. To take one example (discussed further in Chapter 8), Martin Heidegger's existentialist philosophy of dwelling was tainted by his dalliance with National Socialism. It would be a serious mistake, however, to equate romanticism exclusively with antidemocratic forms of ideology. As we have seen, one of the roots of romantic thought began with Rousseau's republican projects. A similar radical and democratic current surfaced in Clare's defense of common use rights and Mill's post-materialist stationary state. New versions of subaltern and radical romanticism have flourished in different corners of modern environmentalism, including the movement for climate justice and degrowth within Planetary Boundaries.

5

MALTHUSIAN SCARCITY

It was a summer fit for the apocalypse. Vicious storms lashed the coasts of Europe in 1816. Torrential rains flooded towns and villages from Amsterdam to Geneva. The dismal weather persisted into the fall with fierce cold, hailstorms, and abundant snow. When the Quaker naturalist Luke Howard tabulated his temperature observations at the end of the year, he was astonished to discover that the average daily temperature in London had fallen by 12 degrees, from 50 degrees Fahrenheit in 1807–1815 to 38 degrees in 1816. On his honeymoon at Weymouth bay, the landscape painter John Constable captured the claustrophobic onslaught of blackened skies. Held up at Lake Geneva by the dismal weather, Lord Byron watched an ash cloud blot out the light of day. In a poem simply entitled "Darkness," he imagined the collapse of human society after the death of the Sun. Another romantic poet, Samuel Coleridge, joked in a letter about the "end of the World Weather." The cause of the preternatural darkness, unknown to all observers at the time, was the April 1815 eruption of the volcano Tambora in the Dutch East Indies (present-day Indonesia). This massive explosion halfway across the world unleashed a torrent of dust, ash, and other particles into the higher atmosphere. Over the course of the next eighteenth

months, these aerosols cooled global temperatures and shifted precipitation patterns to culminate in the infamous "Year without a Summer."[1]

Shortages went hand in hand with the Tambora eruption. The harvest was frighteningly late in the summer of 1816. Across northwestern Europe, crop yields fell by 75 percent. Ireland seems to have suffered a full-scale famine. Such brutal facts were not lost on political economists. David Ricardo (1772–1823) and Thomas Robert Malthus (1766–1834) exchanged unsettling observations about the dreadful weather and the plight of the poor. The historian, political economist, and utilitarian philosopher James Mill (1773–1836), father of John Stuart Mill, predicted to Ricardo that the "perfect continuance of rain and cold" would trigger a famine in which "one third of the people must die." Weighing present pleasure against future pain, Mill suggested that these people might be better off dead sooner rather than later. "It would be a blessing," he insisted, if the poor could be taken "into the streets and high ways," and have their throats cut "as we do with pigs." Otherwise a "whole people" would have to be fed by charity.[2]

While few contemporaries endorsed James Mill's brand of poor relief, his comments were emblematic of a new, bleaker tone in political economy. Concerns with material shortages, overpopulation, and the physical limits to growth became urgent in British economic thought at the turn of the eighteenth century. This change was as much social as environmental. Agrarian and demographic pressures went hand in hand with new political priorities and social values. Anxieties about the imbalance between population growth and the grain supply gained force in a highly peculiar social and political situation, marked by protracted warfare and commercial disruption, as well as ideological confrontation with the revolutionary regime in France. As the Revolution gathered pace on the continent, the view of the poor darkened in Britain. The resulting social and political tensions in turn entered into the interpretation of nature in political economy. Disruptions to the food supply came to seem far more threatening than before. Dearth was becoming a scourge of the social order.

Under these manifold pressures, the Enlightenment model of scarcity articulated by Hume and Smith began to lose ground to a new, more pessimistic strain of political economy. Malthus and his followers warned about the physical limits to growth imposed by the finite supply of land and

nonrenewable mineral stock. Whereas Hume and Smith had devoted their attention to the benign effects of the passions on society, the Malthusians feared that sexual desire had the power to undo every effort at improvement. Smith had looked with compassion and admiration at the prudence and industry of working people, while Malthus saw them as creatures in thrall to base urges, incapable of rational foresight. The moral failings of the common people explained the persistence of misery. The poor failed to exercise the preventive check that curbed sexual desire by delaying marriage and reproduction. This dark picture of poverty in turn opened the door to new kinds of cruelty later in the nineteenth century. In the most infamous case, the British government denied aid to starving people in Ireland and India because officials thought famine relief would merely exacerbate the problem of overpopulation.

Malthusian Scarcity was born out of a specific historical moment of crisis, yet as an intellectual force it has proven immensely persistent and adaptable over time. This chapter traces the arc of Malthusian Scarcity from its origin in the troubled 1790s to its popular apogee in the 1840s, exploring why and how the idea became a staple of middle-class society. By tracking the origin and spread of Malthusian Scarcity, we also come to understand better why many critics have come to loathe this particular interpretation of nature and economy. Side by side with Malthusian political economy, the Romantic movement developed a polar-opposite conception of the natural world as a place of spiritual renewal and sufficiency. Meanwhile, the Socialists regarded the idea of Malthusian limits as an ideological weapon wielded by the elite to oppress the poor. Later in the century, neoclassical economists articulated their own critique of Malthusian Scarcity. The very idea of natural limits came to seem a childish fallacy to the advocates of infinite growth.

Against Granaries

To understand why Malthus was so pessimistic, we must begin by grappling with the social and political context of this thought. British farmers suffered a string of bad weather in the 1790s. Drought damaged the harvest of 1794, while the following year brought subzero winter temperatures, springtime floods, and then an unusually cold summer. After a brief reprieve, the difficult weather returned with cold and rain in 1799, followed by

drought again in 1800. The prospect of dearth provoked widespread alarm and put political principles to the test. Observers disagreed about whether the government should intervene or stay aloof in the crisis. There were also concerns about how the common people might react in the face of severe dearth. The ancient dread of two consecutive bad harvests was still very much alive. Prime Minister William Pitt had been a follower of Adam Smith since the 1780s, yet his government had to steer a careful course between free trade and a more pragmatic commitment to social stability.[3]

The price of wheat nearly doubled to 90 shillings per quarter in 1795. In many localities, people worried that merchants might buy up the whole stock of grain and corner the market. There was some merit to this fear, since the nation's major cities exercised an increasing pull on agricultural production. Wholesale merchants moved up and down the country in search of wheat. By the middle of the summer, popular protests erupted across central England, from the Welsh borders to East Anglia. Rioters executed forced sales of wheat at prices they deemed more just than the going rate, with the proceeds accruing to the dispossessed corn merchants. Roads were cut off and ports blockaded to prevent the export of grain to metropolitan areas. Miners in the Forest of Dean and Cornwall also took part. A statement of the Cornish miners' position declared they would "not bear Starving when they see Grain carried out of the County without any brought to Market where every-one may see there is Corn & may Purchase at a Price Demanded."[4] Local magistrates often gave their support to such activities. But however justified in local terms, this kind of moral economy had deleterious consequences elsewhere, since it threatened to deprive the cities of the industrial Midlands of their basic food supply. Only the mobilization of the army and units of Volunteers broke the stalemate and reestablished the flow of grain from country to town.[5]

In the fall of 1795, King George III expressed his concern with the steep increase in the price of provisions. A Select Committee was formed to examine the matter. The Whig politician Charles James Fox suggested that the price of labor ought to be raised, although he was quick to add that this was a task for the landowners rather than the government. A more radical proposal was made by a friend of Fox's, the reformer and abolitionist Samuel Whitbread, who introduced into Parliament a bill to empower local magistrates to stipulate minimum wages according to the price of bread. Though Whitbread's plan was eventually rejected, it elicited an angry response by

the aging statesman and political thinker Edmund Burke (1729–1797), published posthumously as *Thoughts and Details on Scarcity* (1800).[6]

Burke is usually thought of as one of the fathers of conservative thought, a defender of chivalry, monarchy, and the established Church against the schemes of dissenters, "oeconomists," and revolutionary radicals, but on questions of political economy his position in 1795 was uncompromisingly liberal. Against Whitbread, he argued that wage regulation was counterproductive. Even in a time of harvest failure like the present moment, the public must stick to liberal principles and reject government intervention. Whitbread's scheme to establish a minimum wage was nothing but a "discretionary tax on labor" according to Burke.[7] Labor was a commodity whose price should be set through free exchange: "The balance between consumption and production makes price. The market settles, and alone can settle, that price. "[8] Burke defined "market" as the "meeting and conference of the consumer and the producer, when they mutually discover each other's wants." Every impartial observer, he insisted, must recognize the ability of the market to fulfill the "balance of wants" with "truth," "correctness," "celerity," and "general equity."[9] Any government interference with the "balance" of the market must lay an "axe to the root of production itself."[10] Attempts at wage regulation would simply diminish the productivity of farms. In fact, agriculture was particularly vulnerable to tampering, since cultivation demanded so much attention, skill, and capital by the landlord and farmer. A commercial system of agriculture could only operate efficiently if farmers were rewarded for their work with market-determined profits.

Burke's celebration of the market dynamic was not devoid of traditional principles. The "laws of commerce" were also the "laws of nature and consequently the laws of God." Providential design guaranteed the efficiency and justice of the market. Indeed, dearth itself was the choice of providence. The will of God shaped the pattern of feast and famine. "Divine Providence" was in charge, and when "it pleased" it to withhold "necessaries" from the poor "for a while," they must simply bear their fate. "Patience, labor, sobriety, frugality, and religion" would be required.[11] Government action could do nothing to soften acts of "divine displeasure."[12] Religion also played an important role in Burke's conception of social responsibility. If the wages of the workmen fell short of the price of provisions, their welfare came "within the jurisdiction of mercy."[13] Poor

relief was not the responsibility of the state but fell squarely within the realm of private and voluntary initiatives. Burke added that "charity toward the poor" was a "direct and obligatory duty upon all Christians."[14] All of this was consonant with Burke's broader argument against revolutionaries and radicals: the Church was the anchor of both civil society and the state. Echoing the basic tenet of Neo-Aristotelian Scarcity, there could be no social order without organized religion.[15]

Like many other Enlightenment savants, Burke believed that providence operated through the orderly movements of the natural system. Dearth in agriculture was a recurring phenomenon, though it followed a pattern of "long cycles" rather than "short intervals."[16] Burke spoke from personal experience about farming. He owned the six-hundred-acre estate of Gregories near the market town of Beaconsfield in Buckinghamshire, where he witnessed firsthand the failure of the wheat harvest in 1795. Burke described in vivid detail the whole process, step by step. Frosts followed by rain damaged the early crops of both cereals and clover. When spring came, conditions appeared to improve. Grasses sown early revived and the wheat started blooming. Then, "at the most critical time of all, a cold dry east wind, attended with very sharp frosts . . . destroyed the flowers and withered up, in an astonishing manner, the whole side of the ear, next to the wind."[17] Burke showed some of the blighted wheat to his friends in town and warned about a bad crop ahead, but "his opinion was little regarded."[18] When the wheat was threshed, "he found the ears not filled, some of the capsules quite empty, and several others containing only withered hungry grain" resembling an inferior kind of rye rather than regular wheat. "Never had I a grain of so low quality," he lamented. Nevertheless, it sold at twenty-one pounds per load. Subsequently he sold two more loads for two pounds more each: "Such was the state of the market when I left home last Monday. Little remains in my barn."[19]

However disconcerting the present dearth was, one had to take a longer view. Like Adam Smith, Burke argued that famine was a thing of the past: "Never since I have known England, have I known more than a comparative scarcity."[20] While the historical record contained many instances of "melancholy havock," the price of wheat had been stable in recent years. There was, he added, good reason to believe that the common people fared better in "season of common plenty" than they had fifty years ago. Even the time of dearth was less hurtful than it once had been: "I do not know

of one man, woman or child, that has perished from famine."[21] Here, Burke mixed into his political economy an explicitly political and moral theme by attributing the low rate of mortality to the strength of social bonds. The "care and superintendence of the poor" was "far greater than any I remember."[22] Not unlike the Neo-Aristotelians of the sixteenth century, Burke considered paternalism in civil society to be the best remedy against dearth. Local elites rather than the central state had to shoulder this burden. Roman history demonstrated the danger of letting the government assume too much responsibility over the food supply. The public granaries of Rome had encouraged dependency in the common people. "If once they are habituated to it, though but for one half-year, they will never be satisfied to have it otherwise."[23] The French monarchy had fallen into the same trap. Driven by noble but misguided intentions, the government there had sought to govern "too much," until the "hand of authority was seen in every thing and in every place"—encouraging people to blame it for everything that went "amiss in . . . domestic affairs."[24] Public rather than private paternalism bred corruption and insurrection. In the final instance, schemes to build granaries and regulate wages would provoke a revolution. A period of widespread if temporary shortages was far preferable to the siren call of state-sponsored famine relief. Short-term fluctuations in the grain price, for Burke, was a natural misfortune that the market could mitigate, with an occasional helping hand from Christian beneficence.

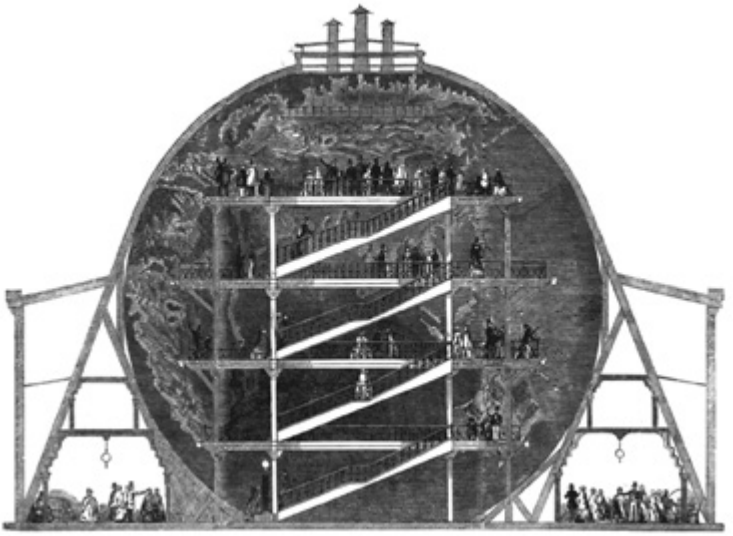
Island Limits

Just a year after Burke's death in 1797, the Anglican parson and political economist Thomas Robert Malthus launched a devastating attack on the idea that the human prospect was in harmony with the natural world. For Malthus, famine was not a problem of the past but a very real and unsettling threat to progress. The first edition of Malthus's *Essay on the Principle of Population,* published anonymously in 1798, targeted the vision of human perfectibility articulated by William Godwin in *Enquiry Concerning Political Justice* (1793), discussed at the end of Chapter 4. No amount of economic improvement and social advancement could ever overcome the fundamental constraints to population growth posed by the finite supply of land. Public expenditure on the poor merely exacer-

bated the problem by encouraging early marriages and a surplus population of indigent and unemployed people. In the worst-case scenario, the economy might degenerate into a stationary state, with population growth pressing so much on agricultural production that the majority would be forced to subsist in material misery.

While Malthus reached an extensive audience with his forecast of overpopulation, he cut a far more modest figure than Burke's charismatic and prolix statesman. After an early career in the Anglican Church, Malthus became professor of political economy at Haileybury's training college for East India Company officials. Though he did not own an estate, he shared with Burke a deep affinity for rural England and the landowning class. His thinking was also, like Burke's, profoundly indebted to the Scottish Enlightenment. But he combined his interest in the liberal political economics of David Hume and Adam Smith with a keen appreciation of Scottish writers on population such as Robert Wallace, Joseph Townsend, and John Sinclair.

For Malthus, population growth was at the same time a natural and an economic phenomenon. In this sense, political economy crossed into the eighteenth-century science of natural history. Nature had scattered the seeds of life liberally and profusely across "the animal and vegetable kingdoms" but everywhere the available food supply set limits to the growth of population.[25] This was a "prodigious waste of life," constantly pitting living beings against each other in the "struggle for existence."[26] To illustrate the exponential force of reproduction, Malthus proposed a thought experiment. He asked his readers to imagine an alternative universe, where a species could expand indefinitely without competitors and limits of subsistence. In such a counterfactual world, an animal or plant would procreate and proliferate until it had colonized "millions of worlds in the course of a few thousand years."[27] In the material sense, life was a planetary force, capable of overwhelming and overflowing the universe. This startling image was also a parable about human dominion. While *Homo sapiens* was internally divided into warring states and empires, as a species among other species, it lacked serious competitors. Thanks to the art of agriculture, humans had learned to tame and transform the natural world. But there was a limit to mankind's mastery of the earth. The global population could still overshoot food production in only a few generations: "In two centuries and a quarter the population would be to the



Wyld's Great Globe, Leicester Square, 1851. Images of the planet proliferated in Victorian popular culture, driving home Malthusian warnings about the physical limits to economic growth. *Credit: Illustrated London News,* June 7, 1851.

means of subsistence as 512 to 10."[28] This thought experiment encapsulated much of Malthus's method. To grasp population growth, one had to think on multiple scales, deploy long-range forecasts, and compare divergent rates of growth. Such thinking was increasingly commonplace among middle-class people at the time. Anxieties about population converged with new currents of scientific thought in geology and natural history. Images of the planet proliferated in popular culture, perhaps most memorably in the *Great Globe,* mapmaker James Wyld's sixty-foot model of the earth in London's Leicester Square.

Humans stood out from animals and plants by virtue of their powers of reason. They could choose to control their patterns of reproduction to fit their levels of income and social ambition. Unlike animals and plants, humans had the faculty of foresight and could elect to delay marriage and therefore reproduction to secure a sufficient livelihood before having offspring. But Malthus made it clear that poor people across the world frequently lacked the wherewithal and resources to provide adequately for their children. This peculiar definition of foresight suggested the unsettling possibility that some people were more like animals than others.

Among the poor in civilized nations, a "constant effort to increase population" frequently trumped the power of foresight.[29] Malthus also drew a line between civilized nations and morally degraded or barbarous ones. In the latter, the prudential check was weaker in force and early marriage more common. In the case of the British Isles, the worst afflicted area was the Scottish Highland region, where a demographic disaster was bound to happen since northern Scotland likely had the largest "redundant" population in the island.[30] The same tendency was even more pronounced in "morally degraded" nations, which for Malthus included many of the Catholic countries of Europe, in particular Ireland and Spain, as well as the Polynesian islands, New Holland (Australia), and Tierra del Fuego. In these places, people were so corrupted in their morals "as to propagate their species like brutes, totally regardless of consequences."[31] The ability to link cause and effect in reproductive terms was a defining feature of civilized and rational behavior. This emphasis on foresight was also crucial to Malthus's critique of the English Poor Laws. Since Elizabethan times, a system of parish-based poor relief had provided support for the indigent. Malthus believed that the Poor Laws inspired irrational behavior in the poor, including imprudent attitudes toward sex and early marriage. Only the wholesale abolition of the institution could instill proper foresight and self-sufficiency among the bottom ranks of society.[32]

Likewise in political economy, foresight was a crucial skill. Among Malthus's many arguments in the *Essay,* perhaps none is more striking than his forecast about population growth and agricultural improvement. Thanks to the abundance of land and the high wages of labor in the British colonies of North America, the population there doubled every twenty-five years. This notion of geometric population growth was something of a commonplace in the late Enlightenment; Malthus borrowed the observation from Richard Price, who in turn got it from Adam Smith, Ezra Styles, and Benjamin Franklin. In contrast with the American colonies, the British Isles had been settled a long time. Land was relatively scarce and the inhabitants many. Malthus speculated that the population of Britain could double within twenty-five years, but that any further expansion must be very difficult. The arithmetic development of food production simply could not keep up with geometric rates of growth in a long settled land. If population doubled again in a second twenty-five-year phase, calamity was inevitable. Redundant numbers must be eliminated

by disease, war, or the "last, most dreadful resource of nature," famine.[33] While Adam Smith had seen mass hunger as an aberration brought on by bad governance, Malthus called it a providential check on excess population, an awful but natural result of the "prodigious waste of life" common to all of Creation.[34]

As if this forecast were not sufficiently gloomy, Malthus argued that population growth undermined the long-term prospects of every nation. China here functioned as a limit case. An ancient and very populous country, it had reached the full extent of agricultural productivity with "its soil nearly cultivated to the utmost."[35] Manufacturing and trade might bring more wealth to the few, but such development could not increase the basic "funds for maintaining labor." Only the "surplus produce of the cultivators" could guarantee a sufficient subsistence to the common people. When all land was fully cultivated, a commercial nation reached "the natural limit to the population." From this point onward, the "funds for maintaining labor" become "perfectly stationary."[36] In the long run, this was the fate of all commercial nations. Such projections would have a long afterlife in Victorian political economy (although not all of them were gloomy, as evidenced by John Stuart Mill's version of the stationary state, discussed in Chapter 4).

To anyone familiar with the history of British development, Malthus's worries might seem grossly misplaced. Why would any political economist be so anxious about the future just as Britain was entering the first Industrial Revolution? The simple answer is that Malthus, much like Adam Smith, did not grasp the promise of industrialization and the new fossil-fuel economy. Malthus's political economy was shaped by the intellectual inheritance of the preindustrial Scottish Enlightenment. It was also very much a reflection of the same experience of dearth, war, and revolution that formed Edmund Burke's economic thought. Malthus never quite managed to move beyond the moment of crisis in the 1790s, rather like a soldier who relives the battles of the past long after the war has ended. This is perhaps most obvious when we consider his view of the grain trade and agricultural production.

Malthus issued his warning at a moment when Great Britain appeared more isolated and vulnerable than it had been for centuries. The conflict with France underscored a danger easily forgotten in more fortunate times: when international trade became disrupted, the country had

to rely on resources grown at home on relatively scarce arable land. This consciousness of island limits set Malthus apart from his predecessors in liberal political economy. Though he shared with Adam Smith and the French physiocrats an appreciation of the significance of agricultural improvement, he differed from them in his emphasis on the feebleness of technology and human ingenuity in the face of geographic restraints and demographic forces. Malthus's pessimistic assessment echoed wider anxieties about resource shortages among elites in the age of the French Revolutionary and Napoleonic Wars.[37]

Against Adam Smith's plea for free trade in grain across national borders, Malthus stressed the importance of government subsidies for exports. Since British wheat was more expensive than continental grain, subsidies were absolutely necessary to encourage national production. Without inducements, domestic farmers would worry about finding a market for their produce in years of good harvest and might be tempted to convert grain land into pasture to raise livestock. More meat production would benefit consumers in the middle classes but not the common people who depended principally on a diet of wheaten bread. Malthus made this argument against the background of a major shift in cereal production. Until the last quarter of the eighteenth century, Britain had been a net exporter of grain. But of late, this national surplus had given way to a pattern of import dependency. In a normal year, grain imports amounted to about 400,000 quarts. Even worse, the harvest failure of 1800–1801 had forced the government to import two million quarts from abroad at public expense. Given the pressure of population on available supply, Malthus predicted that such a dearth would be repeated in the near future. "We can hardly doubt," he wrote in 1803, "that in the course of some years we shall draw from [abroad] as much as two millions quarters of wheat, besides other corn, the support of above two millions of people." These supplies might come, he thought, from America and the nations around the Baltic Sea. But what would happen if there was a serious dispute with these countries in a time of harvest failure? Malthus added wryly: "with what a weight of power they would negotiate!" The entire Royal Navy of Great Britain would be less intimidating than the "simple threat of shutting all their ports."[38] Such a threat was particularly worrisome since Great Britain's "commercial ambition is peculiarly calculated to excite a general jealousy."[39] It would be foolish to trust in the goodwill

of foreign nations under such circumstances. Even worse would be to sacrifice the lives of two million subjects of the Crown if no assistance could be found abroad. Much better, then, to minimize imports of grain and ensure national self-sufficiency; corn bounties would encourage British farmers to keep enough land under cultivation to ensure a buffer against years of poor harvests.

For Malthus, domestic grain production was crucial not just to national security and the welfare of the poor but to the survival of the liberal regime established in the Glorious Revolution of 1688–1689. Much like Burke, he linked the threat of revolutionary violence to the experience of material dearth in the lower orders. He suggested that the most dangerous threat to social stability was the "redundant" part of the population—that is, men and women who had little access to property and employment. If these people became convinced that the government was responsible for their plight, they would be easily seduced by radical promises and the lure of violence. In Malthus's phrase, "redundant population" turned into revolutionary "mobs" who were "goaded by resentment for real sufferings" but "totally ignorant of the quarter from which they originate."[40] Malthus suggested that Britain had come very close to disaster during the "late scarcities." Should such episodes become more frequent, something Malthus feared was all too likely, this might jeopardize the English Constitution. When "political discontents blended with the cries of hunger," the door was opened to revolution. Mob rule went hand in hand with dictatorship. Writing in the aftermath of Napoleon's rise to power, Malthus warned that "almost every revolution, after long and painful sacrifices, terminated in military despotism."[41]

Despite postwar depression and social unrest, the nightmare of a famine-driven British Revolution failed to materialize. When liberal critics attacked the system of agricultural protection at the end of the Napoleonic Wars, Malthus continued to defend the need for corn bounties. The peace between France and Britain did not, in his thinking, fundamentally alter the strategic and political necessity of securing the grain supply. Neither did Malthus make any major changes to his basic argument in the 1817 edition of the *Essay on Population*. He still warned that Britain would be unable to feed a rapidly growing population for long, and continued to insist that a serious dearth might provoke mob violence and a revolution.[42]

In the debate over the Corn Laws, Malthus's friend and sparring partner David Ricardo emerged as a formidable defender of free trade. In *The Principles of Political Economy and Taxation* (1817), Ricardo pushed the tradition of political economy toward a more deductive approach, away from the comparative historical analysis and moral philosophy of Hume, Smith, and Malthus. Ricardo's practical circumstances and social orientation differed a great deal from his predecessors. He was an enormously successful London financier who used his fortune to buy an estate and gain prominence in the English landowning elite. He was also a man of unconventional religious views, who converted from Judaism to join the Unitarian church, but may have been an agnostic at heart.

Much like Malthus's political economy, Ricardo's thought grew out of the emergency conditions of wartime Britain. One of his main contributions was a theory of rent that explored the economic effects of population growth on marginal soil cultivation. According to Ricardo, rent was the result of the expansion of cultivation. When less fertile soils were taken into cultivation, it became possible to charge rent on superior lands. Population growth therefore channeled wealth into the hands of the landlord class at the expense of more productive economics sectors. Yet while Ricardo was not oblivious to the problem of physical limits, he rejected Malthus' focus on self-sufficiency and protectionism. He hoped that the mutual advantages fostered by international trade could stave off the stationary state. In its simplest form, Ricardo's model took the form of a thought experiment about international trade and specialization, looking at the commerce between England and Portugal. He started with the observation that each country in his case could produce its own cloth and wine if it chose, but the two activities would demand of it different labor inputs reflective of the manufacturing capacities and real wages in those sectors, and the country's natural advantages. Assume, for example, that for England to produce an amount of cloth that would command a certain price in international trade, "the labor of 100 men for one year" would be required, but to produce an equally priced amount of wine it would have to devote the "labor of 120 men." Meanwhile, assume the same output would require of Portugal only "90 men" for the cloth and "80 men" for the wine. [43] Ricardo's insight was that, even though Portugal had a labor-cost advantage for both goods, it should specialize in the activity that would maximize its returns—winemaking—and, rather than expend its labor

inputs in the less efficient business of textiles, import cloth from England. The same logic should drive England to specialize in cloth-making and to import wine, creating a tidy argument for bilateral trade. Ricardo's simple mathematics carried persuasive force, elegantly conveying the argument for specialization based on relative advantage. Taking aim at Malthus, Ricardo also suggested that grain production should be part of the international division of labor. If a country possessed "very considerable advantages in machinery and skill," it should "import a portion of the corn required for its consumption."[44] He praised John Ramsay McCulloch's proposal for a gradual liberalization of the grain trade. In a world of free trade, the "nations of the earth" would be "like provinces of the same kingdom."[45] McCulloch saw in international specialization a defense against dearth. Consumers everywhere would draw the benefits of the most efficient production: grain from Poland, cotton from the United States, and manufactured goods from Birmingham and Glasgow. Such true commercial spirit would secure "permanently . . . the prosperity of nations."[46] "By the extension of foreign trade, or by improvements in machinery," Ricardo observed, "the food and necessaries of the laborer can be brought to market at a reduced price."[47] Free trade was thus an instrument to overcome the constraints of nature. Although Ricardo did not rule out the arrival of the stationary state, he hoped that it was "yet far distant."[48]

The concept of comparative advantage reduced a complex set of political, social, and environmental variables into an ingenious but highly abstract model. As a moral and political proposition, Ricardo's notion of international specialization gave a new lease on life to cosmopolitan liberalism, with its idealist assumptions of mutual advantage and peaceful exchange. But there were also a number of omissions from the model, which critics were quick to exploit. Like Malthus's original model of geometric and arithmetic growth, Ricardo's concept rested more on mathematical intuition than on empirical data. The argument about specialization could also be challenged at the level of its assumptions. How could one know the efficiency of Portuguese cloth-making without developing the industry there? What if developments in England allowed it to increase its yield in wine production? Questions like these cast doubt on the practical application of Ricardo's model. And beyond the challenges to his deductive method were other, deeper questions: To what degree was the manu-

facturing strength of Britain the product of historical patterns of violence and exploitation? Did it matter that Portugal had long been part of a British sphere of economic and military influence? Skeptical readers of Ricardo, Karl Marx among them, concluded that Ricardo's notion of free trade was little more than an apology for unequal exchange.

Popular Malthusianism

To grasp the impact of these debates about Malthusian Scarcity on nineteenth-century culture and politics, we need to look beyond the pages of Malthus and Ricardo to the proselytizing efforts of their allies and friends. Among them were three Scots: Ricardo's student John Ramsay McCulloch, the first professor of political economy at the University of London from 1828; the Church of Scotland minister and social reformer Thomas Chalmers; and the Anti-Corn Law agitator James Wilson, who founded *The Economist*. But by far the most important figure of the moment was the English writer and journalist Harriet Martineau (1802–1876), who became an overnight sensation with the first installments of her *Illustrations of Political Economy*. Issued once a month in twenty-five volumes between 1832 and 1834, these were engaging tales that also taught lessons in economic theory. With her talent for combining entertainment and edification, Martineau quickly gained a devoted following which included the future queen of England and such intellectual luminaries as Robert Owen, and Thomas Carlyle. Each installment is believed to have sold ten thousand copies and by one computation may have reached as many as 140,000 readers in circulation. By comparison, the final part of Charles Dickens's first novel, *The Posthumous Papers of the Pickwick Club*, had 40,000 readers in 1837.[49]

Born into a Unitarian, middle-class family in Norwich, Martineau turned to writing professionally after the death of her father and the collapse of his manufacturing business. Though she had no more than a few years of formal education, her fierce intelligence and imaginative approach to economic reasoning made her a singularly effective advocate for classical economics. Much of the success of Martineau's project had to do with her ability to translate the sterile axioms of political economy into vivid narratives shaped by her Unitarian religious sensibility. She understood that middle-class Victorian readers would prefer their economic theory

enlivened by the idiom of literature and religion. One of her most celebrated novellas in *Illustrations of Political Economy* turned the problem of Malthusian Scarcity into a story about how good housekeeping and foresight staved off disaster on a tiny island in the Hebrides.

While economic theorists aspired to state their principles in the most universal form possible, Martineau used concrete and domestic settings to stimulate public interest in economic arguments. She varied the social context from story to story, but regardless of the class and rank of her protagonists, she always situated the action in local communities and familial relations. By translating abstract ideas into dramatic plots, Martineau hoped to make economic principles intelligible to all social classes. People who had no inclination or ability to read the treatises of Smith or Malthus might eagerly engage with their ideas in a different genre. Martineau here followed in the footsteps of Hannah More and other Christian moralists who had successfully grafted Christian messages onto the form of popular fiction. Martineau was in fact an even more relentless moralist than her evangelical predecessors. Each of Martineau's stories concluded with a shamelessly didactic "Summary of Principles." By frequently choosing plebeian figures as mouthpieces, she honored Malthus's aspiration to make economic laws intelligible to the common people. For Malthus, education was a critical component of his project to improve the lives of the working classes. In the second edition of his essay on population, he suggested that it might be possible to alter the conduct of the common people by teaching them "a few of the simplest principles of political economy" on the model of Adam Smith's program of parish schools.[50] Yet despite Martineau's best intentions, she was far more successful in appealing to middle-class interest than converting workers for her cause. Indeed, the publication of *Illustrations of Political Economy* coincided with an era of bourgeois ascendancy. Martineau's literary breakthrough occurred in the years between the first Reform Bill (1832) and the New Poor Law (1834), just as the middle class was coming into its own as a political force. Like More's religious fiction, Martineau's work flourished in the heat of a specific moment. The next generation would cast a cold eye on her pedagogical pretensions. While Martineau's reputation did not endure, her works helped make the idea of Malthusian Scarcity into a national force in politics and culture during the 1830s.

Among Martineau's many readers was the heir presumptive to the throne of Britain. The young Victoria awaited each installment

with great excitement. Her middle-class literary taste should not surprise, given the distinctly bourgeois stamp she would put on the monarchy during her long reign. Victoria's favorite of the twenty-four tales was "Ella of Garveloch," a story of family and improvement set on a tiny island in the Hebrides. Martineau followed up the success of this novella with a second story, "Weal and Woe in Garveloch." In sharply drawn vignettes, Martineau evoked the landscape and drama of island life. The insular location served two complementary purposes. Since the late eighteenth century, the Highlands and Western Isles had become a popular tourist destination and literary landscape. Martineau's story tapped into the romance of the Gaelic West while giving new life to the popular idea that barren soils and a difficult climate bred a special virtue of hardy self-reliance. At the same time, Garveloch also provided a natural laboratory for economic reasoning, very much in the spirit of Malthus and Ricardo. The isolated setting and physical boundaries of the island made it easier to isolate and describe the basic factors of economic growth and demographic limits.[51]

In her two stories about Ella of Garveloch, Martineau approached the question of improvement from both sides of the Malthusian-Ricardian divide—first as a question of agriculture and rent, and then as a matter of moral foresight and population pressure. At the center of the narrative was a family of orphaned children led by the precocious heroine, Ella. Eager to better herself and improve the family's cottage and fields, Ella needed knowledge of economic principles to make good decisions. Martineau provided Ella with a disquisition on the origin of rent, using a friendly laird (a landowner from the gentry) as mouthpiece. When population expanded and farmers took more land and coastal waters into use, he explained, the best soils and most advantageous fishing spots would begin to yield additional value in the form of rent. This was not an "arbitrary demand by the landlord but a necessary consequence of the varying qualities of the soil." Tenants paid rent to the landlord for the productive advantage of using better soils. Rent was a "symptom" rather than a cause of wealth, just as Ricardo would have it.[52] By investing the profits from fishing into soil improvement, Ella made her cottage holding prosper. She happily began to pay rent to the landlord as a token of her own success. The story of Ella's improvements concluded with the promise of an economically advantageous marriage with the young trader, Angus.

In the next story, "Weal and Woe in Garveloch," the action moved forward ten years. Ella was now the mother of nine children. Many others on the island had also opted to raise large families while times were good. This growth in population put pressure on the limited sources of subsistence. After a bad harvest, the poor began to experience hardship as growth in demand outpaced supply, causing prices to rise. For Martineau, this event was entirely predictable. On such a small island, there were no confounding factors to confuse the public. "The people of Garveloch might survey their little district at a glance, and calculate the supply of provision grown, and count the numbers to be fed by it." Any prudent observer could easily "discern" how to "proportion . . . labor and food." A "truly wise" person would also take into account the "probability of bad seasons" in calculating the burden on family resources.[53] But many people chose to ignore sound economic knowledge. Instead, they "abused the poor farmer" and accused him of taking advantage of the situation. "They were slow to perceive that it was themselves and not the farmer who had made the change."[54] By raising large families, these people had "caused the increase of demand and the consequent rise of price." Martineau explained their psychological state as a form of "giddy" short-term thinking, prioritizing sexual desire over future welfare. Encouraged by a season of prosperity, they had decided to put all their trust in "the sight of plenty around them." Inveterate optimists, "they now supposed that their island was enriched for ever."[55]

The character of Ella of Garveloch looked at wealth with a different conviction than the other villagers. While Ella, too, had raised a large family, her actions were guided by rational foresight. The memory of an episode of dearth in her childhood shaped her attitude to household provisioning. Whenever she could, she had put aside savings for the event of an emergency. After dearth struck and prices rose, rather than blaming the farmer, she scrimped and rationed her supply of grain, letting herself go hungry to protect the youngest members of the family. She even concealed the situation to her children so as to alleviate anxiety, taking only her oldest son into her confidence. Though Ella spoke with sympathy about the plight of the poor, she rejected their improvidence and failure to plan ahead: "we knew that such stormy seasons come from time to time; and yet we acted as if we were promised plenty for ever."[56] In Martin-

eau's story, Ella acts as the guardian of family memory and therefore also the best witness to an uncertain future.

"Weal and Woe" was focused on the practical problems of coping with cyclical dearth, but Martineau also hinted at a long-term solution to Malthusian Scarcity: as long as men and women learned to act prudently, it was possible to live well even in a world of stark physical constraints. Toward the end of the novella, Martineau suggested that a change had come over the island in recent times. Fewer and fewer people succumbed to the positive check of war and disease. Marriage had become "less general" and took "place at a later age . . . among the middling classes." There was reason to hope that the common people would "soon" follow this "example."[57] By making Ella the arbiter of moral action, Martineau located the problem of population squarely in the household and turned female foresight into a critical driver of improvement. Family relations offered the key to understanding material dearth. The ultimate cause of deprivation was moral and spiritual. In every soul, a battle raged between sexual desire and rational foresight. How individual men and women weighed present urges against future hardship determined the fate of families, communities, and even the nation itself.[58]

Thanks to Martineau and the other apostles of Malthusian thought, political economy became a potent force in society and politics during the 1830s and 1840s. Evangelical thinkers like Thomas Chalmers forged a peculiar synthesis of Malthusian ideas and Christian beliefs. Evangelicals, unlike economists, "believed that the hidden hand held a rod."[59] Providence acted through general laws rather than special intervention. In this spirit, the 1834 amendment to the Elizabethan Poor Laws subjected the "idle poor" to a brutal workhouse regime. Providential Malthusian ideology did even more damage during the Great Hunger (*Gorta Mór*) in Ireland between 1845 and 1849. The chief administrator in charge, Assistant Secretary to the Treasury Charles Edward Trevelyan, expressed a great deal of ambivalence about the very idea of assisting the victims. He confessed (in a private letter) that he did not think government should supply food or increase "the productive powers of the land." The remedy for the "deep and inveterate root of social evil" of overpopulation lay outside the political realm. "I hope I am not guilty of irreverence in thinking that, this being altogether beyond the power of man, the cure has been

applied by the direct stroke of an all-wise Providence in a manner as unexpected and unthought as it is likely to be effectual."[60] Trevelyan believed that potato cultivation had encouraged a culture of myopia among the Irish poor. Like the giddy fishermen in Martineau's Garveloch, the Irish lived from day to day without seeking to improve their means or planning for bad seasons. High potato yields fostered population growth without social refinement. Trevelyan's diagnosis associated these subsistence problems with a lower stage of history. "The Irish small holder lives in a state of isolation, the type of which is to be sought for in the islands of the South Seas." Only a shocking external blow like the potato blight could shake them out of their complacency and alter their ways. The Irish people must learn "to live upon a bread and meat diet, like those of the best parts of England and Scotland." One million Irish people died and another million emigrated during the Great Hunger.[61]

The legacy of Malthus also helped to launch a new idea of nature in the second half of the nineteenth century. Charles Darwin (1809–1882) directly challenged the anthropocentrism of the early modern Cornucopian and Enlightened Scarcity. Instead of celebrating the power of human ingenuity, Darwin declared that natural selection was "immeasurably superior to man's feeble efforts." He rejected the religious anthropocentrism of Genesis and replaced the story of Adam and Eve with a new narrative of material evolution, which demoted humanity to a niche in the vast web of life.[62]

According to Darwin, Malthusian pressures propelled the process of natural selection. Everywhere, animals and plants multiplied without restraint. While humans could curb sexual desire through the faculty of foresight to exercise a preventive check and delay reproduction, other species had no such power. But everywhere in nature, competition over the limited food supply set limits to population. Malthusian Scarcity ruled the natural world. In the constant struggle for life, minute differences provided decisive advantages over competitors. Such inherited modifications gradually gave rise to new varieties and species. Humans could imitate this process only clumsily, through methodical breeding which seized on external traits useful to humans without touching the internal mechanisms that natural selection alone could modify.

One of Darwin's most vivid examples of the superiority of natural processes was the work of earthworms in preparing the land for vegeta-

tion. By passing the raw materials in the soil through their alimentary tract, earthworms produced humus at the rate of two inches per year. More or less ignored by human observers, the silent labor of earthworms made possible the entire edifice of civilization. They had "plowed" the land long before the invention of agriculture.[63] Where the physiocrats had seen a partnership between humans and natural processes, Darwin underscored the superior complexity and intricacy of the natural world. Human handiwork was shoddy by comparison. "Nature's productions," he observed, were "infinitely better adapted to the most complex conditions of life, and . . . plainly bear the stamp of far higher workmanship."[64] In the last lines of *On the Origin of Species* (1859), Darwin celebrated the cosmic forces of self-organization in nature:

> Thus, from the war of nature, from famine and death, the most exalted object which we are capable of conceiving, namely the production of the higher animals, directly follows. There is grandeur in this view of life . . . whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved.[65]

Unlike his contemporaries John Ruskin and Karl Marx, Darwin expressed no anxiety about the destructive consequences of human activities on the natural world. Perhaps it simply did not occur to him that humans might damage the Tree of Life.

The rich legacy of Malthus and Darwin opened up many new lines of inquiry in the late nineteenth century, from ecology and eugenics to anarchist social theory. T. H. Huxley argued that all biological organisms, including animals and humans, were defined by a constant struggle for existence, in which everyone strove to gain as large a share of society's resources as possible. In contrast, the Russian anarchist Peter Kropotkin (1842–1921) dismissed Social Darwinism in favor of a theory of mutual aid.[66] Drawing on evidence from the fields of biology, anthropology, history, and sociology, as well as his extensive travels throughout Siberia, Kropotkin decentered interspecies struggles and emphasized how animals and humans are constantly engaged in various forms of mutual aid. Whether among microbes, animals, or humans, altruism and cooperation

drove evolutionary change. Thus, biological life was not simply a never-ending struggle over scarce resources but also defined by a rich tapestry of cooperative practices.[67] Among humans, the principle of mutual aid had been marginalized by the formation of centralized states and the ideology of individualism. Against Malthus and Huxley, Kropotkin argued that competition among people was a highly contingent social dynamic that could be eliminated by the proper organization of society.[68] The challenge facing humanity was therefore to develop new kinds of institutions that would enable people to embrace their cooperative spirit fully, and restore mutual aid as the fundamental social dynamic.

Conclusion

Half a century before the Irish famine, Malthus had predicted that England would face a subsistence crisis within a generation if exponential population growth continued. Yet, contrary to his original prognosis, the disaster occurred in Ireland rather than England—despite the fact that the British population (England, Wales, and Scotland combined) had doubled from 10.5 to 21 million between 1801 and 1851. Just two years after the Irish famine ended, Prince Albert and his industrial and scientific allies organized a celebration of British manufacturing supremacy at the Great Exhibition of 1851. While British industry took pride of place, the space also included exhibits by many European nations as well as the United States, Brazil, and China. More than six million people—a third of the population of Britain—visited the Exhibition during six months between May and October. The event marked the apogee of Victorian industrial might. We might think of the enclosed perimeter of the glass palace as a cornucopian rejoinder to the island anxieties of Malthus. By walking through the halls of the building, a visitor could in the space of a few hours survey the entire scope of the manufacturing economy in all its immense productivity and ingenuity. Political economists had long described the nature of national prosperity through abstract concepts and numbers. The Great Exhibition rendered that intangible concept of abundance into a new form of concrete, personal experience, accessible not just to the middle class but anyone who could afford the one-shilling price of admission. While Malthusian pessimism would persist into the twentieth century, from now on it had to reckon with a novel sense of confidence about the

revolutionary consequences of industrialization. For Marx and his followers, technology in the service of socialist revolution would deliver universal abundance and equality. For the marginalist economists, technology in the service of markets promised endless growth and infinite wants.[69]

In the end, neither Ricardo nor Malthus won the argument over Britain's economic development. Contrary to Malthus's forecast, the population of Britain expanded without disaster. Instead, the great famines of Victorian Britain occurred on the colonial periphery in Ireland and South Asia. Ecological and climatological conjunctures like the potato blight and the failure of the monsoon triggered mass starvation in colonies weakened by long-standing exploitation and undemocratic administration. While liberal political economy made strong inroads in policy and politics over the nineteenth century, it was deeply embedded in the power relations of the Empire. Urban consumers were fed and clothed in great part thanks to the British colonies and the wider sphere of informal empire. Even as the famine ravaged Ireland, the island exported wheat and oats for British consumers. Crucial resources also flowed into Britain from the plantation economy of the American South and the wheat belt of the American Midwest. By the end of the century, Britain had become deeply dependent on imports from abroad: 75 percent of all food consumed in the nation was grown outside it. The outsourcing of the food supply also led to ecological consequences. In the early 1860s, annual meat imports stood at five pounds per capita, whereas in 1906 through 1910, this had risen to almost forty-four pounds. An entire global infrastructure of cattle ranches, industrial killing, and refrigerated transport underpinned the British appetite for beef and mutton. This pattern of extensive land use to feed people in the industrial metropoles reshaped the world's ecosystems from Australia to the Pampas.[70]

The British path of development rested on a combination of military might and cheap fossil-fuel energy. By the second half of the nineteenth century, both the Royal Navy and Britain's merchant marine relied on steam rather than sails. This dependence on fossil fuel set a pattern of energy-intensive growth for future powers like the United States and China. The triumph of free-trade imperialism also ushered in the first hint of the shift to come in the earth system. By the third quarter of the nineteenth century—the heyday of Pax Britannica—atmospheric carbon dioxide levels began to diverge from the Holocene pattern of natural variability.

The conquest of Malthusian limits would leave a deep imprint on the planet. In the twentieth century, these disturbances multiplied and accelerated to a point where they began to overwhelm the earth system.[71] Old fears of overpopulation and harvest failure, the hallmark of Malthusian Scarcity, now mingled with novel concerns about the depletion of biodiversity and the inadequacy of carbon sinks—the phenomenon we will explore in Chapter 8 under the name Planetary Scarcity.