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foreword by Paul Hawken

Tomorrow's Economy

A Guide to Creating Healthy Green Growth

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Foreword

If a writer wanted to sail into the most troubled and murkiest of academic waters, it would be economics. Although the economic profession considers itself a science, albeit a social science, it is not. It is descriptive theory about markets and value. Commerce is the root of economics. It is an ancient practice. We make, we buy, we sell. We use symbols of gain, precious metal coins or currencies, to engage in one of the oldest ways cultures connect—the exchange of value. The language around economics is imbued with water metaphors, making it seem as if modern-day exchanges are a natural phenomenon. Money flows like water. There is financial liquidity, we channel our investments, or, as happens in recessions, sources of capital dry up. Wealth trickles down, or, in good times, the rising tides raise all boats. These terms obscure the reality of economics as taught and practiced. It is not about the simple acts of commerce. Modern economics describes the complex financial dynamics of capitalism, an economic system that has accomplished three things. It has improved the living conditions of billions of people. Second, it has nearly destroyed the capacity of the Earth to support those conditions. Third, it has concentrated wealth in unimaginable ways, a profound imbalance of riches that disempowers and harms billions of people.

Tomorrow's Economy proposes a balance sheet of the world. In finance, a balance sheet discloses assets, liabilities, and capital. As Per Espen points out with both facts and flair, the balance sheet of the world leaves out all three accounts. What are the assets of planet Earth? Clean air and water,

fertile soil, abundant fisheries, insects. We know only that they are all diminishing, but we have no total. And liabilities. The ocean receives 30 percent of anthropogenic carbon dioxide emissions in the form of carbonic acid. The acidifying ocean has reduced phytoplankton populations by 30 percent, yet phytoplankton are the source of 50 percent of atmospheric oxygen. And capital—what is our stock of natural capital? Pollinators, glaciers, rivers, aquifers, primary forests, wetlands. Economics does not account for these because it is based on the belief that there are no physical limits to economic growth as long as there is sufficient labor, capital, and technical progress. Financial balance sheets do not reflect the multiplicity of the Earth's resources unless they are commodified and sold. Economists are aware of the elision, albeit perversely. Nobel Prize–winning economist Robert Solow once admitted that if the biological limits of nature were taken into account, theories of unlimited economic growth would not be possible. Or to put it another way, there would be a scarcity of key elements for a healthy economy. Exactly.

Economists simulate reality using models. The scope of their models does not include tidal saltmarshes, gender equality, corruption, desertification, or burning forests—for starters. The models capture capital flows, labor markets, asset allocation, interest rates, inflation, but not life itself. How does one make sense of all this? To put it more simply, where do we go from here? How can we grow in prosperity and not burn the house down? How can we dramatically reduce our human impact while improving the lives of billions of people who deserve more?

Given the ecological collapse of species, systems, and regions, many now challenge the capitalist rationale, including a potent group known as ecological economists. On the corporate side there is the Davos paradigm of a future where the hyper-wealthy masters of capitalism consider adjustments to their financial momentum and accumulation by taking into account "externalities" including social injustice, loss of biodiversity, and global warming. There are entrepreneurs and consumer advocates who call for green growth, but exactly what that means is not well delineated. There are articulate cries for the complete cessation of economic growth as well as calls from degrowth advocates who would take it one step further.

Those who are aware and address the ravages of unimpeded economic growth want to rid the world entirely of capitalism. The venerable *Economist* dismisses such advocates as modern Luddites who would precipitate a backward leap to a stone age.

This is the rich foment of clashing views and beliefs that Per Espen has come to address. His training as both psychologist and economist gives him an unusual perspective. Virtually all economic models assume that economic behavior is predictable. Per Espen would demur on this point. Since his youth, he has been studying the intricacy and complexity of human behavior. Rather than disagreeing with conflicting economic theories, he pays close attention to all the voices. Perhaps his early training as a psychotherapist creates an openness and capacity to acknowledge the validity of different perspectives, and then, as he does here, propose a thoughtful, comprehensive way forward that takes into account inequity, poverty, ecological degradation, and capitalism—the need for more and the need for less. More prosperity for the needful; far less impact to our home planet.

The foundation of all commerce is value—what is valuable to whom, when, and in what way. The healthy growth approach you can find in *Tomorrow's Economy* is not a theory overlaid onto the existing economic tumble. It makes two important points. One, we cannot continue to steal the future, sell it in the present, and pretend it is GDP. That is what the balance sheet reveals when we do proper accounting. If the Earth were a company, this practice would be called fraud. Two, we can heal the future employing our youth, our entrepreneurship, our gumption, and our economic intelligence, and that would be an honest GDP. In short, we can either create assets for the future or take the assets of the future. One is called regeneration and the other despoliation. When we exploit the Earth, we exploit people and cause untold suffering. We are investing hundreds of billions in artificial intelligence to be applied by digital machines in myriad ways. However, we invest very little in the natural intelligence expressed by the living world. The biological world is exploding with new discoveries, compounds, and hitherto unrecognized intelligence. Plants have genetic memory going back millions of years. We now know that trees and plants

have our five senses and fifteen more senses that we do not. Trees transmit a complex vocabulary through the air and roots to other trees. One of the most poignant and instructive discoveries is that forests are communities that physically and selflessly care for each other. Plants know what we seem to have forgotten, that the way we take care of ourselves is to take care of our community—communities of citizens and denizens who surround and uphold us, the animals, insects, fungi, and the trillions of bacteria in our body that outnumber our human cells. Although our innate human biodiversity has not been fully identified or quantified, we know that there are more genes in the human microbiome than stars in the universe, and approximately half are what are called "singletons," genes that are unique to each individual. Genes are intelligence. What are they saying?

Per Espen has been listening. It is his early training. We have been extracting value from forestlands, indigenous people, oceans, slaves, and the poor for centuries. You will find here a clear description of an economy that creates value for all, and for all whom we have diminished, one that does not impoverish any form of life, be it human, mammal, plant, fish, or creature. He honors and includes the skills, structures and brilliance that have evolved and brought us to where we are today, and pivots them away from the degeneration of the world to its regeneration. This is Per Espen's brilliance in this masterfully written and researched work.

Paul Hawken

After several years in the confines of the psychotherapist's office, I felt a mounting unease. Some patients were finding their way into a new flourishing, while others settled more deeply into their same old struggles. I was probably doing an alright job as a witness, a patient helper, a "non-judgmental judge" as one client dubbed me. But I started to feel stuck in the wrong place. I could see how our organizations, society, and economy were producing a steady flow of burned-out, depressed, anxious, and increasingly unhappy people who were overtaxing their inner resources in order to deliver ever more.[2] And I was stuck in a *reactive* mode—receiving those who had dropped out, been cast aside, or were otherwise resisting or unable to meet the demand to continually increase their labor productivity in our current economic machine. If I helped to fix them the way they or their company wanted them to be, to make them productive again, they would go straight back into the system that would eventually reproduce the same symptoms all over again.

Thus, I became disillusioned with the prescriptions from the sages of the psych tribe. Most were convinced that the inner life could exist, subjectively inside the mind, split off from the outer world. If only people could think more constructively, positively, or self-confidently, if only they could get their act together one by one, then society would get better, too, they reasoned. As if the soul can be healed while the biosphere and our institutions crumble, I thought. For by then, I had been awakened not just to the dire state of overexploited people but also to climate injustice, vanishing turtles and corals, and all the other realities of our overexploited ecosystems. I concluded that—as a book by cultural psychologist James Hillman had pointed out at the time, "We've had a hundred years of psychotherapy and the *world* is getting worse."[3]

There seemed no end to the steady flow of used-up, thrown-away laborers experiencing exhaustion, sleeplessness, worries over never being enough, unable to cope with expectations of family and work, and a host of fears instilled in them by a system with little or no insight into what "human capital" is really about. So, I switched focus to the economic machinery itself. It seemed better to proactively address the systemic cause—the way

in which economic organizations choose to grow and treat their human resources—rather than trying just to treat the symptoms.

Disillusioned with the psych tribe, I turned to the econ tribe. I applied for entry by teaching organizational psychology at the Norwegian Business School. I've since spent many years there teaching executives (and soon-to-be executives) how to envision new strategic futures, specializing in futures thinking and scenario methods that, I hope, could build more respect for and inclusion of social and natural capitals into their strategy. I worked, as Jung's book had pointed out to me, with the "present and the future."

As I worked on laying out possible futures in economic terms, telling stories of the future in the present, I also became curious about how managers and economists actually think about the world. Why do the econs choose to describe the world with the terms they use? Why do they think the way they do about both human resources and natural resources? Why do they time and again exhibit severe limitations of imagination when it comes to innovation and disruptions?

Still fluent in psych lingo and aware of the power that language holds, I started looking at how certain root metaphors have shaped economic theories since the mid-1800s, solidifying into "truths" that were taken for granted in the 1900s. Core among these are the ideas and images of wealth as economic growth, starting with Adam Smith's *The Wealth of Nations*. Launching into a PhD, I learned econ's lingo, its favorite concepts and metaphors; I got to know its greatest forefathers and heroes (like Smith, Marshall, Keynes, Solow, Samuelson, Drucker, Porter, Stiglitz). In gradually becoming an econ tribe member, I also learned how to pray to and honor the holy demand-and-supply curves, how to tilt my head and say, "But what's that on the margin?" or "What about the alternative cost?" or "Have you considered the elasticities?" or "Remember the rebound effect" and much more econ mumbo jumbo.

However different the econ tribe is from the psych tribe, I discovered that their chiefs, too, turned out to have their own fixations, superstitions, rituals, and blind spots. For instance, the econs' capacity to imagine

alternative futures is often severely restricted. Try as they might, they rarely move beyond a high, a low, and a middle business-as-usual equilibrium forecast to any given challenge. And that business-as-usual future inevitably prescribes one thing: endless economic growth.

The endless growth of the business-as-usual type has a dark side that's less easy to ignore with each passing year. Not only does it overburden our inner selves, but it also manifests dangerous realities like climate change and the breakdown of nature's life-supporting systems. With ever more power through technology, new energy sources, and strong economic growth, we are—without deep self-knowledge—transforming the entire planet Earth. Wrote Jung in 1955: "Coming generations will have to take account of [the unconscious man within us] if humanity is not to destroy itself through the might of its own technology and science" (§585).

Are our modern minds mature enough to understand what we are doing any more than we were in the early decades of the 1900s? Or is humanity playing around with Earth without self-understanding, once more yielding to charismatic strongmen promising to save "us" by crushing "them"? Will we again use the fantastic outcomes of technology, wealth, and innovations to succumb to the darker impulses of the ancient human psyche, accelerating our own self-destructiveness? Or will we be able to shift our inner and outer development in a new direction, onto a flourishing path?

Exploring those questions is where my two worlds, the disciplines of psychology and economics, collide and this book—an exploration of the mindset, mechanisms, and possibilities of a genuinely *healthy* growth—begins.

INTRODUCTION

What is the first thing that comes to your mind if I say *growth*?

The word evokes a multitude of meanings. "Growing up" implies getting taller, bigger, or older. Others point to improving the quality of something—as in "growing better." Some hint at power—such as "growing greater"—and still others refer to branching out or diversifying, such as "growing broader." Maybe you thought about volume: "growing larger," as with an inflating balloon. Or maybe you thought about spiritual growth—the inner, personal growth invisible to the eye. If you're a biologist, you might have envisioned sprouts, seeds, cyclic rebirth, and populations. If you're an investor, maybe asset growth (higher valuations leading to more money) came to mind. A darker version is found in cancerous growth—an excessive, unbalanced, and out-of-control growth.

Meanings, both quantitative and qualitative, abound. But when it comes to recent discussions about *economic* growth, something peculiar happens. Some see it in a positive light, as in "the country grew at a robust 3 percent last year." Others see it in a negative one, as in "consumption and economic growth must be stopped if we are to avoid global heating and unfair resource depletion." In recent public debates on economic growth, nuances have too often given way to either-or, pro-growth or anti-growth stances. This locks our thinking into a polarity: either expansion *or* limits, progress *or* regress, go *or* stop. Will further growth lead us to heaven *or* hell on Earth? All of which boils down to just two fundamental options in our collective mindset: growth is good, or growth is bad.

Such techno-optimist thinkers see a logic for how economic growth can go on endlessly, bringing ever more blessings to humans thanks to changes in market prices, substitution, new ideas, innovations, and human ingenuity. In short, with more growth, the future is bright! And they find it puzzling that others, mostly either tree huggers, lefties, or Luddites, have a problem with that.

. . . THEN THE CURSES

It's long been clear that not all kinds of growth are equally beneficial or healthy. All this merry whoopee for growth comes with noxious, shadowy undertones that threaten the celebratory mood from time to time. The way our modern economy grows is by most scientific measures actually sawing off the fertile branch that has nourished humanity for the last seven thousand years: destroying soils, acidifying the oceans, weirding Earth's climate, and killing off wildlife at breakneck speed. Also, most workers—full-time, underemployed, and certainly the unemployed—aren't invited to the party that the capital owners are enjoying. Inequality has skyrocketed since 1980.[5] To top it off, further economic growth no longer gives most people in richer countries any more satisfaction with life over time.[6] Hence, a majority of us miss out. In this view, economic growth is broken, corrupt, sick, and sickening.

Several prominent academics, activists, and anti-growthers insist on the physical impossibility of perpetual economic growth. "Steady growth is suicidal," says acclaimed Canadian professor David Suzuki, adding that the mindset that perpetuates it "is a form of brain damage." Writer George Monbiot calls growth "the destructive god that can never be appeased." *Guardian* economics correspondent Richard Partington writes that "Growth has become a holy grail for governments seeking re-election." Distinguished professor emeritus and energy expert Vaclav Smil concludes that "growth must end." And climate activist Greta Thunberg attacked all the grown-ups at the United Nations General Assembly: "We are in the beginning of a mass extinction, and all you can talk about is money and fairy tales of eternal economic growth. How dare you!" Anthropologist and

degrowther Jason Hickel is clear that "growth is killing us." And bestselling author and activist Naomi Klein writes, "We have an economic system that fetishizes GDP growth above all else, regardless of the human or ecological consequences."[7]

Many have therefore recently gathered behind the degrowth banner, arguing for cutting consumption, particularly for the rich. They see no reason why more growth can solve the problems that economic growth itself has created. Rather, they call on everyone to sacrifice plane rides, cut plastics, and stop eating meat. They call for immediate, stringent sustainability regulations, carbon taxes, and a plan for prosperity without growth.[8] The wealthy and their money are ruining the world, they say. It's time to cut back, cut out, cut down in order to live together on a finite Earth.

It is as if the economic mindset that had such immense success directing the modern adventure after World War II has recently turned "mad, bad, and dangerous to know," as economics professor Steve Keen of Kingston University puts it.[9] As if it's now suffering some rigid psychopathology, an addiction to ever more of the same, an obsessive compulsion to repeat the same thinking, the same old patterns. In short, more economic growth clearly increases inequality and pollution, wrecks the climate, and no longer improves well-being or happiness. This logic leads anti-growthers to wonder why a clearly destructive system remains dominant. They find it puzzling—and frustrating—that conventional economists have a problem recognizing that with continual growth, the future is dismal.

CONFRONTING OUR INNER GROWTH PARADOX

As time shoves us relentlessly deeper into the twenty-first century and toward the once-distant climate thresholds, how will we choose to face the challenge? More growth or degrowth? It seems—from this debate—that we can't live without growth and we can't live with it. Damned if you do. Damned if you don't.

We *must* have growth. Yet further growth is impossible. A double bind.

This paradox is not just theoretical. It shows up in the groups of people that I work with in very different ways, depending on their inner imaginings

of growth. On the one hand, I speak with mainstream managers and MBA students, petroleum engineers, unions, financial investors and brokers, energy economists, and politicians. But on the other, I collaborate closely with environmentalists, Green Party politicians, localists, slow-growthers, degrowthers, climate researchers, and animal-rights and social-justice activists.

The first set of people can't get enough of growth. The second group struggle to even mouth the words "growth" or "green growth" in a positive way. Personally, trying to build a bridge, I keep falling into the chasm. Among mainstream economists and growth investors I'm viewed as too green, too closely associated with emotional idealism and activism to be balanced and objective. Among environmental activists I'm seen as too business-friendly, keeping company as I do with those who speak of further growth. Attempting to reach out to both camps at once, I've frustrated everyone. My colleagues and coworkers at the business schools are deeply focused on issues like marketing, globalization, strategy, change management, digitalization, accounting, and law. They struggle to grasp what "green" or "sustainability" has to do with their subject. That's something for the Environmental Protection Agency and politicians. Yes, the United Nations' Sustainable Development Goals (SDGs) are nice, and indexes of corporate responsibility sound good, but the real beef is in the earnings. Face it, they say, if a company goes into the red, it doesn't matter how green it is. You're out. Bust. Bankrupt. Gone. So, grow or die! Black is still the new black.

Then there are my colleagues and friends in the sustainability movement, who strive for a transition to a greener, more just world. They are rebelling, taking to the streets, fighting a losing battle to save the last shrinking remains of corals, rainforests, and glaciers. Their voices fill with contempt whenever I speak of growth, gross domestic product (GDP), airplanes, the petroleum industry, corporate profits, or anything else to do with our current economy. The eyes of new acquaintances from this camp glaze over if the first thing they learn is that I work at a business school or as a paid consultant to big industry. The economy is the enemy. Powerful. Dangerous. Destructive. Unethical. It caused the problem and is the problem.

The pushback has been discouraging at times. Maybe I should call it the *green squeeze*: The greens say I sound like an economist (that's an insult, I presume). The econs say I talk like a green hipster (an insult, too). Yet mediation and problem-solving are my calling. So, I listen to both sides and try to find new directions toward some common ground. That's why I lecture at the Norwegian Business School in Oslo, run the BI Centre for Sustainability and Energy, and do strategy consulting for businesses. It is also why I participate in politics as a Green Party member, publicly debating the future of oil industry subsidies and assisting the environmental NGOs.

This book is my personal answer to both camps, and to any reader who is struggling with the issue of growth, both personally and theoretically, and is curious about the emerging framework for economic thought in the twenty-first century.

It would be false and self-defeating to feign impartiality when trying to establish common ground between disparate groups. I'm deeply critical of conventional economic growth, originating as it does from coal mines, slavery, colonialism, fossil oil combustion, worker exploitation, and ecological destruction. Yet just "saying no" to economic growth is not a viable way onward. I am, however, convinced that a better version of growth is possible—a healthy growth that can replace and repair the faults of the old gray growth model.

A HEALTHY VERSION OF GROWTH?

The strongest driving force behind both the successes and excesses of economic growth is the hard-coded manner in which the economic system expands. It grows in uneven ups and sudden downs. Yet over time a capitalist economy can't help but grow. Growth is built into its DNA. Machines beget more machines. Capital begets more capital. More production gives more profits, which in turn are reinvested in even more production as the economy gets wealthier. Our accounting systems make sure this is happening and calculate return on investments mechanically and accurately (at least accurately in a mathematical, if not a real social or environmental,

sense). The purpose is to grow more profits, of course. It is what systems thinkers call a self-reinforcing loop. This is a causal explanation of why there is seemingly constant economic growth. Money generates more money, particularly for those who already have it. That's the core engine of any version of the many capitalisms out there.

The negative side effects of continued conventional economic growth are by now more than obvious. Critiques are a dime a dozen. Only a few of them are mentioned above. Yes, there is no lack of touted alternatives. There is much fanfare around such concepts as low-carbon, circular, sharing, slow, local, solar, socially responsible, inclusive, 100 percent renewable, regenerative, and sustainable economies. Indeed, there are many, many sustainability initiatives under way.

Yet beneath all these remedies, opportunities, and solutions, a deep disillusionment and questioning of further growth itself lingers in the mind. Are all these attempts to modify the current growth model feasible, viable, or truly *sufficient*? Isn't all this "sustainability" and "circular" buzz really just hype and sugarcoating on the outsides of an inherently unstable and destructive core in the current economic system? Isn't everyone who participates in the modern economy also supporting the financialization of the world—turning everything into money for consumption? Aren't most executives still championing an overall system that shortsightedly focuses tremendous force and attention on bonuses, short-term whims and wishes of consumers, and investors, while at the same time busily sawing off that same branch we're all sitting on? What's the point of struggling to win a few cosmetic changes on the surface (like corporate social responsibility reports, rooftop solar panels, or a meat-free Monday) if the deep core continues its unperturbed destructive swirl?

This doubt has good grounds. So-called greenwashing of the gray growth model has been widespread. Greenwashing (and the newer "greenwishing," "impact-washing," and even "SDG-washing") means that politicians and corporations highlight a few green actions here and there but avoid addressing inaction on the most substantial issues: their contribution to the worsening megatrends of inequality, global heating, and the demise of oceans and wildlife.[10] Covering over those shortcomings with peppy

building on data, trends, research, and solutions already available to start healing growth's self-destructive sides.

The main question driving me and this book's exploration is this: *Can a healthy growth model outcompete and replace the gray growth system in time to keep within Earth's safe operating space?*

SYSTEMS CHANGE THROUGH HEALTHY GROWTH

As millions of youths filled the streets in 2019, inspired by Greta Thunberg's climate strikes, a common banner read "System change, not climate change." How do these kids feel? They express a sense of betrayal by the previous generation—the boomers—and the economic system they created. This old system is giving kids a sense of despair over the burning, boiling, flooding, unfair state of the world that they are inheriting. From marching with them in the streets and speaking with them, I imagine their feelings are akin to what the psychiatrist Robert Lifton describes as "an amorphous but greatly troubling sense that something has gone wrong with our relationship to nature, something that may undermine its capacity to sustain life."[13] In 2019 it was no longer a case of stating that "we should think" about the consequences of emissions on the future generations, as was commonly said back in the 1990s and early 2000s. Instead, that future generation is here, now, demanding immediate system change.

But what exactly *is* system change—at levels from local companies to countries? How can you tell if the system—or a part of it—is changing each year or not? If it's on the right track or the wrong track? Too slow or rapid enough change? And most important: What solutions will bring about the wanted system change in the most effective way?

Here's what I propose to all changemakers: to create genuinely healthy growth models in all market economies that rapidly outcompete and replace the gray growth we know too well from the twentieth century. We need to reimagine and spread new models for value creation for the twenty-first century: a credible, feasible healthy growth approach that can reconcile the two camps. Simply put, economic growth is healthy when the value creation from any economic actor gets sufficiently more resource

smart and more inclusive each year. The vision is to keep growing human well-being while fitting the footprint of the economy inside Earth's safe boundaries. We (in the sense of anyone engaged) need to be able to monitor those annual changes to keep decision makers accountable and avoid greenwashing. Healthy growth is measurably profitable, more resource productive, and more redistributive by design each year. It adds up from micro to macro and impacts troubling megatrends fast enough to matter.

Just like economics, this book has its micro and macro planes. It will distinguish between healthy and unhealthy economic growth at personal, corporate, city, national, and global levels. You can find tools for the nitty-gritty practice of stepping away from destructive growth and encouraging healthy growth.

As you'll see in the pages ahead, it is possible to move beyond the current obstacles and break new ground. Fresh ideas, new practices, and deep driving forces that are already at work in today's markets can accelerate a transformative approach to growth in the coming decades. We will explore how to move from "gross growth" (as in bigly, grossly, gross domestic product) to "healthy growth" (as in balanced, regenerative, equitable, and long-term wealth accumulation). The quest involves going beyond the thinking in conventional enlightenment economics from the 1900s and expanding on the parts still fit for the 2000s. It entails looking for what can be scaled up to create an "enlivenment economics." It implies a shift from narrow, calculating self-interest to a broader, relational, and inclusive Self-interest (with capital S) that delights in enlivening the network of Others flourishing around us.[14]

My wildly audacious ambition is to welcome economic growth into the room as a patient personified and explore a psychotherapy for it. My theory of change is to help growth rethink and reframe itself over the coming decade.

WHAT'S NOVEL IN THE HEALTHY GROWTH APPROACH?

If anything, the sustainable growth topic is old hat. There are tons of books about it, at least since 1972.[15] I know. In a way it's crazy to write yet another

one. But where do we stand in the 2020s? And why do I believe that healthy growth is both possible and *different* from what you've heard about before? This book both builds on and synthesizes the current leading knowledge, so that experienced sustainability practitioners will find a lot of common ground and references in the endnotes. The healthy growth approach is well grounded in the economic and sustainability research of the previous decades, and I think it's important to acknowledge that foundation.

Throughout, though, the healthy growth approach brings together in new ways the recent research findings from three separate domains: cutting-edge economic psychology, which probes the mindsets of economic growth and inequality; innovation economics, which studies how new solutions arise and spread (or not) in market economies; and Earth system science, which is giving us science-based targets for resource use and environmental footprint. A new understanding of economic growth can be found in the integration of these domains. I want to tell not a science fiction but a plausible story of how the coming decades could unfold into deep systems change, as ever more actors start to do what is needed each year.

But each part also goes *beyond* conventional sustainability thinking in major, unique ways. Part I brings in wholly new and refreshing perspectives on the psychology of economic growth to show how to move beyond the pro- vs. anti-growth stances. This part examines the archetypal psychology and the stories that drive the imaginative changemakers of all main sectors. It also describes the socioeconomic drivers of a sixth wave of innovations that have been mostly undercover but are taking off big time during the 2020s. The storytelling applied throughout helps with restor(y)ing growth and enlivening the economic concepts and theory.

Part II introduces the novel healthy growth compass with detailed metrics to help navigate growth in the twenty-first century. The healthy growth compass lets you "see" whether each dollar of value creation aligns with a lower environmental footprint and a more equitable society. This is a more in-depth technical section that explores how to improve productive, social, and natural capitals in a balanced, beneficial way. The healthy growth framework is woven around a pro-business and national economics core concern: expanding value creation. By consistently focusing on value added

(gross profits) in integrated metrics, business interests can align operations with environmental and equitable concerns in a systemic, self-reinforcing way. We can reframe the old GDP numbers in completely new ways—for instance, to check whether any growth is both sufficiently resource productive and inclusive. Both pro- and anti-growthers, both long-term investors and activists should be able to embrace growth in value added that brings sufficient resource productivity and social productivity.

Healthy growth also comes with a new logic for built-in climate justice; when richer countries decarbonize sufficiently in absolute terms, it gives developing countries space to grow. Yet the same fair rates of change apply to everyone (chapter 7). Similarly, it lets both larger and smaller companies and cities with higher emissions calculate the targets and performance for them to do their fair share of the transformation. An audited healthy value creation that scales from micro to macro is needed throughout the economy, at the company, city, county, sector, and country level. The science-based targets and objective approaches presented show how to avoid the greenwashing that so often hampers attempts at sustainability.

Part III gives tools and strategies for how to accelerate the system change to cleaner, safer, and healthier growth in practice. It starts by outlining the triangular system of citizens-business-government and explains why all three corners of this triangle have to move in sync to succeed in the transition to a healthy economy for all. Whether you're just an individual (chapter 9), part of a company or an NGO (chapter 8), or an engaged citizen with a concern for governance of the markets and the commons (chapter 10), you can find concrete examples and actions that help speed up the transition to healthy growth. Part III ends with the surprising explanations on why both population and GDP growth will slow down over time with higher GDP per person during the twenty-first century. Well-being, however, can keep growing. The final chapter (11) provides four science-based answers to the question of how it all adds up.

In short, part I lays out the helpful thought patterns and stories to resolve the growth paradox and give a sense of grounded hope, while part II provides us with a map of the problematic territory along with a compass for navigating to a better destination. Part III provides the skills, leverage

points, and strategies to work on a healthier growth as we're walking, wherever we are.

A final difference from other economic books, is that I emphasize thought patterns, story, metaphors, feelings, language, framings, and visualization of complex relations. All these "softer" psychological characteristics are often overlooked in the more rational rhetoric of economics.[16] But this is how I integrate my psychological approach with (ecological) economics: not just the numbers and the facts, but how we think and feel about them too.

WHEN WILL WE SEE THE BROAD ECONOMIC SHIFT TO HEALTHY GROWTH?

When can we expect the new growth model to have fully outcompeted and displaced the twentieth-century model? Can it realistically happen in time to prevent runaway eco disaster with the associated breakdown of society, or runaway social disasters with the associated breakdown of ecosystems? Is our current predicament so bad that it's necessary to fool ourselves a little in order to keep up the faith necessary to go forward with enthusiastic action? The final chapter (11) offers my take on these grand questions, based on a number of recent modeling efforts looking at combined Earth and economic systems.[17]

The race is on to deliver a new economic operating system for the twenty-first century that is both compatible and conducive to nine billion people flourishing within one Earth. If you agree it's time for a mental upgrade, fresh ideas, and new stories of what healthy growth looks like, read on.

1 YOUR BRAIN ON GROWTH

As a child grows up, she gets stronger, taller, bigger, and more independent, resilient, and mature. Yet to grow up is so natural to us that we rarely if ever reflect on the concept itself.

The two small, seemingly innocent words *grow* and *up*, however, make a lot of difference to human beings. They connect to something very fundamental: Each and every one of us started out as a small toddler, then increased—first in height and weight, then in capacity, power, and influence. We know deep inside that growing brings us closer to mastering the world around us, expanding our impact. In our brains, the neural networks that fire when we hear *grow* spark a web of associations with strength and health, and they have done so since childhood, when we were at our most sensitive and malleable.

So, grow leads to up, and up is good and happy. As the cognitive linguists George Lakoff and Mark Johnson wrote in their now classic study *Metaphors We Live By*, we say "I'm feeling *up*. That *boosted* my spirits. You're in *high* spirits." But there is a converse: "He . . . *sank* into coma. He came *down* with the flu. His health is *declining*."[1] These up-down/growth-decline associations are utterly obvious when you start to reflect on them, but less obvious is how they subtly shape our language and worldviews. The most fundamental values in our culture align with our favorite metaphors—and these embodied, generative metaphors shape how we think, feel, and communicate.[2] At our most basic neural level, grow = up = good = survive, and fall = down = bad = die. This framing affects how we view events in our own lives. And it spills over into economics and politics, too.

Our fascination with and enthusiasm for growth of all kinds stems from deep roots in body and language: Like trees from seedlings, we humans grow from humble beginnings. We attempt to stand tall in the world. Compete to find our place in the sun. The same ideals are applied to society: When cities, business, and societies grow, we imagine them stronger and better. More money and more goods often add up to feeling excellent and being on the rise into the light. The future will be up, too, as long as we can have more growth. These deep-seated embodied metaphors shine through in the way most politicians and economists speak about economic growth.

THE PREVAILING MINDSET OF THE GROWTH PARADIGM

In 2008 the World Bank summoned a group of seventeen political leaders and two academics—Nobel Prize recipients Robert Solow and Michael Spence—to report on the state of growth worldwide. "Since 1950," they wrote, "13 economies have grown at an average rate of 7 percent a year or more for 25 years or longer. At that pace of expansion, an economy almost doubles in size every decade." Their report, they continued, focused on "sustained, high growth of this kind: its causes, consequences, and internal dynamics. One might call it a report on 'economic miracles,' except that we believe the term is a misnomer. Unlike miracles, sustained, high growth can be explained and, we hope, repeated."[3]

So, a repeatable miracle for getting a sustained *high*: That's how these luminaries of economics and governance view economic growth. The study team's language reveals their ideal state, their guiding star: They prefer growth rates "of 7% or more." From the psychological perspective, where we listen for the emotion underlying the reasoning, their language also reveals a disappointment at lower growth rates as well as a worry: that growth might fall again too soon. And a longing: for a growth miracle, but preferably one they can explain and control.

Such is the prevailing mindset created and upheld by the huge-growth discourse.[4] Another Nobel-winning luminary, Paul Samuelson, who wrote the bestselling textbook in the history of economics, stresses that the US

economy grew eighteen times bigger from 1900 to 2000. He called this the most important economic fact of the entire century. And it's clear that he felt thoroughly, patriotically impressed by this growth rate, more so than anything else from the 1900s. To substantiate his argument, he reminded his readers that continued economic growth makes it possible for developed industrial countries to "give their inhabitants more of everything: better food, larger houses, better health services, pollution control, education and pensions. Countries that are successful in the competition for economic growth, as the UK in the nineteenth century and the US in the twentieth century, continue to climb in the international pecking order."[5] They also become role models for other countries that are climbing up to greater wealth—a climb that China, for instance, has decided to take on over the last decades.[6]

"Economic growth is clearly the most important factor in the long-term success of nations," Samuelson concluded, falling in line with conclusions drawn by Solow, whose seminal work on growth started in the 1950s. Since then, the assumption has spread in economics that growth is a continuous process that will persist forever, thanks to improving productivity, particularly from technical progress.[7]

A closer look at the language of political economics can be revealing: After the Great Recession of 2008–2009, politicians started talking about economic *recovery*. Calling the next phase a "recovery" implies that growth has fallen off track, been sick, gone *down*. And health is to be recovered through vigorous growth rates, the ticket to rising back *up*. Years later, in 2017, a *US News & World Report* economic analyst described the recovery this way (emphasis added):

> After 18 months of *slogging* through the single worst economic *down*turn since the Great *De*pression, the US in June 2009 finally *limped* out of the Great Recession and began what has simultaneously become one of the longest and most *disappointing* recoveries in modern history. . . . Average real GDP growth during the ongoing expansion has registered *just* 2.1 percent annually. Between the 1970s and the 1990s, average growth maintained a 3.3 percent pace.[8]

Even a recovery that had lasted for more than eight years is disappointing to this analyst, because the growth rate hadn't risen quickly enough, or high enough. And when there's not enough good, there must be bad: The piece's title, "How Long Will the Recovery Last?," evokes the specter of an eventual *fall*, or downturn—something that triggers a fear that all we have will be lost. Our miracle will cease and desist.

We hear about that miracle time and time again. As the *Economist* once put it,

> over the past century or so . . . the western industrial democracies have experienced what can only be described as an economic miracle. Living standards and the quality of life have risen at a pace, and to a level, that would have been impossible to imagine in earlier times. . . . All this has been bestowed not just on an elite, but on the broad mass of people. In the West today the poor live better lives than all but the nobility enjoyed throughout the course of modern history before capitalism.[9]

Growth in this context is not just a heavenly miracle but also a real-life salvation—and nothing short of hell awaits if growth slips away, opening us up to poverty, mass unemployment, loss, and social breakdown. In other words, when growth is seen as an absolute lifeline, fear becomes its cultural alter ego. It's no surprise, then, that political rhetoric—that messaging that plays on our hopes and fears alike—uses this reality to its great advantage, further locking us in to the growth-is-good, big-growth-is-better, no-growth-is-scary mindset. This is the mindset of addiction. It reinforces a widespread and deep-seated psychological addiction to growth. How long will the bottle last? We worry about the next shot.

Most investors and politicians addictively demand or promise economic growth annually, forever. For this widespread growth mindset, 2 percent annual GDP growth is not enough. We must get 4 percent or more, as Donald Trump has opined.[10] At the time, Pew Research had found that six in ten people in the US considered the economy, which grew by 1.5 percent in 2016, to be "very or somewhat good." Reported Pew, "This is the most upbeat assessment of US economic conditions . . . since 2007."[11] But bigger is better. Even if people don't really know what

climate scientists, dubbed the period since 1950 "The Great Acceleration." During that time, human population, foreign direct investment, urban population, energy use, great floods, fertilizer use, transportation, tourism, and much more have grown exponentially.[20] Suddenly, growing up and up has triggered fears of its opposite: threats of decline and breakdown. Maybe the clearest and most acute physical limits yet are not lack of virgin material resources but the capacity of Earth's sinks. Those are the limits of the air to receive CO_2 without abrupt warming, and water's capacity to absorb excess pollution, particularly nitrogen from fertilizer.

These concerns have become mainstream, entering our living rooms, boardrooms, and classrooms, write authors from the global consulting group McKinsey & Company.[21] Skepticism about the current growth model is now spurred by public leaders from Pope Francis to former UN Secretary-General Ban Ki-moon, and from Unilever's Paul Polman to BlackRock chief banker Larry Fink, who wrote in a letter to all Standard & Poor's 500 top companies that "Short-term thinking pervades our most important institutions, from government to households. We've created a gambling culture in which we tune out everything except the most immediate outcomes."[22]

Despite this emerging mainstream skepticism, the limits-to-growth debate remains, as it has been for decades, mostly stuck in the ditches between the politically dominant pro-growthers and the vocal anti-growthers. While one side champions the benefits and durability of growth, the other repeats the impossibility and destructiveness of continued growth on a full planet. Is there something missing in the debate?

According to Professor Jorgen Randers, coauthor of the original *Limits to Growth* study and my colleague at the Norwegian Business School, thirty to forty years of public debate have been wasted by ignoring the conceptual murkiness and emotional muddle in people's perception of growth. In hindsight, he says, the analytical solution is simple. Maybe the warnings could have been more effective if they had more clearly distinguished between the two main markers of growth: intangible money on the one hand, and physical materials on the other. It is possible to have continuing growth measured in money (which is now really just immaterial, intangible

numbers stored electronically somewhere in the cloud), but one can never have infinite growth in material resource use nor its associated ecological footprint.[23]

Thus, there are clearly material limits but not necessarily monetary limits to economic growth, just as there are no limits to imagination. The logical solution, then, is to require that all future monetary growth decouple fast enough from material resource use. And to monitor and measure both sides of growth to ensure that it happens at sufficient rates of change to avoid ecological deterioration. This means that for each extra dollar of value creation, resource productivity must grow even more quickly (see chapter 5). On the mathematical level, this distinction between monetary and material growth seems clear enough. But in everyday language and communications, full of emotion as politics are, "growth" takes on other psychological associations, symbolic markers, and values.

Ideas such as circular material flows, decoupling, and resource productivity are indeed creeping into transformative business models, promising further growth opportunities while resource use goes down. But there remains a huge, emotionally charged polarization between growth worshippers, who deem any type of growth simply splendid, and those who abhor any kind of economic growth, regarding it as a ticket to the apocalypse. These positions often stem from preexisting psychological attitudes.[24] They emerge from the narrative one holds of growth and one's own self and wealth, as much as from rational, quantitative, or economic reasoning. People tend to first adopt a viewpoint—based on their long-standing values, habits, wealth, and lifestyle—and only afterward find and refine arguments that bolster that viewpoint. The psych tribe has words for this all-too-human tendency: confirmation bias, motivated reasoning, identity protection.[25] In other words, we first gravitate toward our comfort zone and then use our brains to defend it.

So, the debate on growth still rests in a rather peculiar state. First, there is the physical impossibility of continuing with conventional, gray growth. Anyone who has acknowledged, for instance, the enormous amounts of plastics entering our oceans, followed the disappearance of tropical forests and glaciers, or has had even a superficial exposure to Earth system science

can see that yet more resource use and waste, along the conventional twentieth-century growth model, will bring climate disruptions, kill off even more wildlife, pollute the fresh waters and the oceans, and destroy ever more of the remaining topsoil.

But then, the opposite of growth—degrowth or contraction—also seems impossible. If economies start collapsing (with GDP declining), then unemployment shoots up. Both investors and people hit the brake pedal on investing and consuming, which drags the economy down further. As more people lose their jobs, poverty and inequality threaten the social fabric. Homes are foreclosed. Debt problems become insurmountable. Creditors and governments call for austerity measures. The lifeblood that keeps our modern society pulsing—the flow of money through the banking sector—threatens slow to a trickle. People stop noticing and prioritizing nature.[26] Long-term concerns are put off in order to deal with the immediate threats. Trust in ineffectual politicians and government declines as people suffer from the fallout. Populism blooms. Also, new innovations spread dramatically slower, if at all, unless supported by fresh government funds—which are dwindling. The transition to clean power and investments in resource efficiency lose momentum. Innovative startups and scale-ups lose funding as investors want to avoid risk and keep money safe. There is little or no money available for infrastructure maintenance, cleaning up old pollution, or reinvesting in natural capital. So degrowth (in the sense of GDP decline[27]) also seems impossible or unwanted.

What about green growth, a concept that grew to prominence and popularity during the 2000s? The World Bank defines green growth as being "efficient in its use of natural resources, clean in that it minimizes pollution and environmental impacts, and resilient in that it accounts for natural hazards."[28] The European Commission writes, "The aim is to create more value while using fewer resources, and substituting them with more environmentally favorable choices wherever possible."[29] But many critics claim that green growth rhetoric just aims at better efficiency and somewhat more sustainable consumption while disregarding ecological limits. Consumption growth soon eats up the efficiency gains. Rebound effects can make resource use boomerang back up.[30] Green growth becomes, at

least in practice, mostly a continuation of the conventional economic growth model, just under a new label. With this, disillusionment breeds.[31] Green growth begins to sound like "clean coal." So, the greenwashing of growth doesn't help either.

In summary, then, those meandering into the growth debate find it difficult to find a credible way forward. Conventional growth is impossible. Degrowth is impossible. And green growth is often just greenwashing. In a world taken over by global corporatism, it is simply too difficult to imagine that social and environmental considerations will be anything but swept aside the minute they threaten profits. No wonder many are left with the perception that the whole conundrum is unsolvable.

Others have just given up on the idea of growth itself, and decided to call it something else. Some thinkers and authors have suggested "development." Then, we'd no longer have growth as we move into the twenty-first century. We'd only have development—in the same way that ecosystems don't get bigger, they develop into more nuanced patterns and more diversity. Others, like ecological economist Tim Jackson, have gone with "prosperity without growth," while Peter Victor suggests "managing without growth," and hence supporting post-growth initiatives.[32] Others, like author and physicist Fritjof Capra, ask us to focus on qualitative growth, not quantitative growth.[33]

But calling for development to replace growth is simply to repeat the trajectory of *Our Common Future*, a famous 1987 report by a UN commission led by former Norwegian Prime Minister Gro H. Brundtland. This report coined the term "sustainable development," which its authors defined as "meeting the needs of the present without compromising the ability of future generations to meet their own needs."[34] But that fuzzy definition spawned a whole academic tradition aimed at trying to clarify what sustainable development actually means here and now. Thirty years on, there is still no agreed-upon clarity. So the word *sustainable* is now used to give any phrase a wishy-washy lift: sustainable growth, sustainable profits, sustainable competitive advantage. We also have sustained returns on investments, or even sustained high growth. The concept has been wholly appropriated by causes yearning for some embellishment.

More to the point, simply calling it *development* rather than *growth* for thirty years hasn't made the underlying growth go away. Growth is still with us, both in the human mind and in the economy, whether we like it or not.

This, then, is what I mean by the growth paradox: We can have neither growth nor degrowth, green growth nor qualitative growth. Nor can we ignore growth by labeling it something else. The UK economist Kate Raworth, author of *Doughnut Economics*, recommends that we become "agnostic" about GDP growth—neither believers nor disbelievers, but rather thinkers who can discern when growth is appropriate and when it is not.[35] The Dutch professor Jeroen van den Bergh recommends "agrowth" instead of anti- or pro-growth stances.[36]

It may be tempting to abandon the growth debate altogether. But the ideas of growth we citizens hold really matter to us, psychologically and emotionally, and thus they matter to the media and in politics. To parse out good growth from bad growth, we need to know what we think and feel, and why. Modern society is mainly built according to prevailing economic ideas as they determine what societies invest in. Thoughts in our brains eventually become physical external structures. If a large enough community of people imagine we want more things like cars, roads, and buildings—and the economic calculations show the benefits to be higher than the costs—then we will decide to create them. After constructing them, we start to inhabit these structures, and after a certain time of habituation, the current state of affairs becomes natural, with ever more cars and roads and buildings. Similarly, it feels safe and "normal" that GDP and incomes go "up"; otherwise people lose confidence that society is heading in the right direction. Images flow from the imagination into the world and back into our minds, solidifying our language and strengthening neural networks in our brain.[37] Our economic mind starts to expect more of the same. Rather than us consciously choosing our thought patterns, suddenly our habitual economic thoughts are subconsciously driving us. Now the economic tail wags the dog.

Once certain ideas about growth have settled in our brains, they work on us all by themselves until a new idea replaces them. Society forms the

pollution is productive in forests and manageable in populated areas. No, there's no tree overpopulation crisis in spite of there being around three trillion trees.[42] That's because trees are net beneficial to their surroundings, productively adjoined in diverse ecological networks. Humans, after all, are nature too. Why can't we imagine human societies more like trees or ants: billions of us, yes, and each of us net beneficial for our shared home, the oikos that our words for *eco*nomy and *eco*logy refer to?

The problem, then, isn't economic growth as such, measured in monetary terms by a company's value added or by the country's GDP. The problem is rather our oversimplified ideas about the content and type of growth that we've been creating. Our mental models of growth from the twentieth century are outdated and inadequate for the twenty-first. These previously successful ideas have made "us" humans (corporations and politicians in particular) oblivious to the extensive shadow sides of our actions. Instead, let's imagine that, like trees, we can revert to our own roots and find nourishment to reimagine growth more in the manner of forests: each factory a grove, each city a human forest. Then we can possibly find ways to realize growth in a healing way—grounded, regenerative, and enlivening.

Gray growth—the conventional economic growth model during the twentieth century in which environmental footprint worsens in step with the growth—was mainly an instrument in service of financial capital. Financial capital grew by "eating up" both social and natural capital. In contrast, healthy growth means the balanced accumulation of productive, social, and natural capital in which at least two objectively increase at sufficient rates of change without the third declining (more in chapters 5–7).

Healthy growth also extends to a wilder sense. Ecosystems run on both births and deaths, growth and decay. The decay in turn feeds the ecosystem as it evolves, like trees, into higher complexity and resilience. So, life-death-life cycles are growth cycles, too. The opposite of healthy growth, then, isn't no growth or degrowth or sick growth or decay. To me, it is a growth that is too one-sided. And one-sided models emerge when any one characteristic or metric (like GDP) is maximized and universalized at the expense of other types of value creation. Because this gives only partial maximization. We lose sight of what is an *optimum* state for the whole system. Then the

one-sided bigger-is-better assumption dominates the entire skyline and horizon of growth (as well as voters' minds). It becomes fundamentalist.

THE ARCHETYPES OF GROWTH

In the tradition of archetypal psychology, the term *archetype* refers to the deepest patterns of psychic functioning. They tend to be more metaphors and images than things or neurons. We can't seem to touch one or point to one, even if we think of them as rooted in our limbic brain. You can imagine them as the roots of the soul governing our perspectives on ourselves and the world, going straight back to the early fairy tales, legends, myths, and cave paintings. Like literary genres, you can also find them in recurring typicalities in history, in the basic syndromes in psychiatry, or in the paradigmatic thought models in science: worldwide figures like kings, goddesses, superheroes, or monsters. You find them in films, rituals, relationships, and organizations. And they have an emotionally possessive effect in the psyche. Their bedazzlement of consciousness can make us blind to our own stances, writes James Hillman.[43] When falling in love, we experience the power of the Aphrodite archetype and become blind to the mortal shortcomings and shadow side of whomever we're enthused with. We can go crazy, turn wild, jealous, arrogant, or ideologically fundamentalist, all from the power of the underlying archetypal metaphor that rules our imaginative capacity and outlook.

By looking at what sparks disagreement over growth, we see some patterns emerge, and those patterns point toward four archetypes of growth: getting bigger, gaining mastery, producing abundance, and enhancing complexity. And they arise at the intersection of two factors: primary direction (up, down, around, or sideways), and primary properties (more or better).

Let's look at direction first. As I've explained already, to many people growth means *up*—a linear ascent over time, often in the short term. Think again of upward growth of the child. Or consider the ascent of the hero, or upward outlook of the optimist and investor. For others, growth is associated with a more recurring or cyclical movement; it comes, goes, and returns over time. This view holds that both increase and decay are

part of the larger circular unfolding we call growth. Grass and flowers, for instance, grow "down" each autumn and winter, retreating into their roots, and then return "up" again each spring. As trees grow, they lose and regrow their leaves and strengthen their trunks. Salmon die after spawning. We humans, too, grow by letting go of old habits, outdated roles, and stifling patterns; selling off assets, or burying our parents. We grow by going back to our core being, seeking our true self.

Back to my hobbyhorse: "growth" is more suitable as a plural noun. Growth has different properties. Take size. Like a person grows in height, a city expands in area, or a company expands its production volume and number of locations. Let's call this property *more*. A second property isn't about becoming bigger in size, but rather about improving the extent of one's influence, excellence, control, and durability. This second domain is about being *better*. I can grow my influence in a company by moving up the hierarchy, becoming a domain expert or the boss. I can grow my mastery in speaking a foreign language, or fixing engines, or debugging software systems. I can also grow my power through more connections, wider networks, reaching new audiences, better communications. For this second property, growth is qualitatively better, not more of the same.

Figure 1.1
The four archetypes of growth.

These basic distinctions of direction and properties create a conceptual skeleton for four main types of growth: linear and more, linear and better, cyclical and more, cyclical and better. Let's flesh them out.

Linear and More (Bigger)

Combining up/linear with more recalls the heroic, simplistic, and childish ideas of growth. When we imagine growth this way, then more = bigger = good. It doesn't matter if you're talking about muscles, money, profits, or wealth; the size of cars, cakes, crowds, houses, planes, or farm herds; or horsepower torque, explosive force, or anything else. It's all good simply because it is growing bigger and/or higher. And the biggest also wins. The heroic archetype is about competing in size, strength, and speed, beating others and avoiding losing or falling down. In this view of growth, the world can be neatly divided in wins and losses. Losing is for losers. Heroes always win. Enemies are defeated. Bigly.

Linear and Better (Mastery)

If we combine up/linear with better, in the sense of better qualities like influence, we find images of growth that have to do with superiority and control. I'm now in better command of whatever it is that is important: people, soldiers, employees, funds, resources. The sizes may not be getting bigger, but my impact, career, and power grows. As I move up in the hierarchies of status or social power, I grow in reach and influence. Think of a king growing up and better at ruling his kingdom. Or a strict father[44] controlling his house, his family, his children, and his inferiors. The growth results in top-down control—over numbers, morals, or laws, for instance—and the power to define what is better in itself.

Cyclical and More (Abundance)

Unlike the controlling growth of the king or strict father, cyclic and more is about being fecund—highly fertile as in a lush garden, capable of producing abundant new growth. The cow gives birth and bountiful milk to her calf. Spawning fish lay millions of eggs that turn into millions of offspring. Most die, but enough are left to grow and prosper. Growth can happen by regeneration, recycling, rebirth. This archetype explains the emotional

appeal of the circular economy as opposed to the linear growth model. Old clothes or carpets can be decomposed and born again as new garments, again and again. The European Union recently put out a directive called "closing the loop," a phrase that illustrates this archetype perfectly: Millions of tons of today's waste are to be remade into new materials, becoming useful and creating more value for each cycle, reborn "forever."

Cyclical and Better (Complexity)

The fourth type combines cyclical growth with better, as in the growth of complexity and of connections. Those who view growth this way do not envision rising up to the pinnacle of power, but rather growing through reaching out to wider networks, adding nodes to the web, weaving an ever finer mesh. The adult brain does not grow in weight; by making more elaborate neural nets, the brain's patterns get qualitatively richer. Also, as a system grows more complex and starts to connect its many parts in new ways, novel characteristics emerge. This growth of emergent properties can often take on unexpected and surprising characteristics. Not just the number of networked nodes, but communication itself can grow in the depth and multiplicity of its meaning. My grasp and understanding of a novel topic, for instance, can get deeper and transform through flashes of new insights that connect in better ways. The cyclical nature of how understanding grows has been described as following a circle of hermeneutic interpretation, as our attention moves back and forth between parts and the whole.

BRINGING THE ARCHETYPES TO LIFE

Using straightforward two-by-two characteristics to distinguish between four different types of growth models may be a useful starting point to break up rigid, monolithic notions of growth. But one problem with such an analytical tool is that it tends to hide the inner, psychological dynamics of how such notions work. Archetypal ideas are not just categories we can see on the page and fit well into four boxes. They are also entire ways of seeing and filtering the world. Ideas easily slip behind our eyes, into our

herald, the thief, the trickster. Even in his epitaphs he is multiple, complex, a shape-shifter. Hard to pin down. He is depicted as unpredictable but funny and smart. He connects what was previously unconnected. He grows networks, endless virtual realities. We can imagine him running the digital domains, the unpredictable AIs.[46] He also guides the souls over the borders, shifting seamlessly from one domain to another. When we see growth through this lens, we see a progression from simple to complex, from isolated to connected, from brute force to smart dealing skills, from confined to transformative. One of his characteristics is the infinity symbol, ∞—which when related to growth means neither up nor down but never-ending cyclical transformations, forever branching out.

Pairing our four archetypes with Greek gods—Hercules (bigger, stronger), Zeus (mastery, power), Demeter (abundance, regeneration), and Hermes (smarter, complex)—might seem flip, but the point is that there are age-old metaphors at work deep in the human mind when it considers complex phenomena. Those metaphors become even more programmed into our thinking when reinforced by the Western Greco-Roman languages.[47] They refer to characteristics of human thought and emotion that don't change that much from century to century, because the basic structure of our brain remains the same. Knowing about these patterns can help us recognize different qualities in the images of growth that we subconsciously hold, images that often create conflicts and that may even lead us astray.

Sometimes, both individuals and whole societies can get possessed by an archetypal idea. Wrote Jung, "If the affective temperature rises above [a certain] level, the possibility of reason's having any effect ceases and its place is taken by slogans and chimerical wish-fantasies. That is to say, a sort of collective possession results which rapidly develops into a psychic epidemic."[48] In this mental state our sense of cocksureness can get inflated beyond all reasonable bounds. Some critics say that Western consciousness has been addicted to, or emotionally possessed by, the endless growth story. It has become a full-scale dogma, an unquestionable paradigm.[49]

Therefore, it's important to recognize how ideas and metaphors become social constructions that then shape our shared knowledge and the physical

world.[50] One key to succeed in changing the direction of growth may be found in becoming aware of what underlies our ideas about it. That means self-reflection about the images and narratives that guide us when we speak of it. And paying attention to which direction and properties we expect growth to take. Together they open up to a new psychology of economic growth: not just the numbers and the equations, but the metaphors and emotions too.

But if one is in the grip of growth addiction, resistance to change gets tough. When companies producing cars, coal, oil, cement, or steel can see no future other than the linear growth model of more the same, when investors want nothing else than to grow their own assets way beyond any level they need to live, then we are in the growth addiction zone. New directions are hard to see, and satisfaction from "enough" is nowhere to be found. Our normal way of growth becomes the only way forward, come hell or high water. Then the consequences of that addiction begin to grow, too, becoming visible as glaciers, forests, and pollinators disappear and soils turn toxic from chemical fertilizers, heavy metals, and excess tilling while the oceans slowly rise and groundwater aquifers deplete.

Luckily, there are better forms of growth than the one that is currently deranging forests, rivers, oceans, and the climate. There are also better designs for capitalism than the one that is currently ripping apart societies, escalating inequalities, and undermining democracies in pursuit of its one-sided goal. Rather than negating capitalism and trying to stop the growth train in its tracks, we can rethink growth so that capitalism starts to serve society and nature rather than dominate it. We can still set it on a new track, a new direction. We can redesign and redirect the momentum toward a healthier growth.

But the process necessarily starts in our psyche, not just by reimagining the images we hold of economic growth but also by reimagining capitalism. As the author and futurist Alex Steffen has observed: "It's literally true that we can't build what we can't imagine. . . . The fact that we haven't compellingly imagined a thriving, dynamic, sustainable world is a major reason we don't already live in one."[51]

FROM NEGATING TO REDESIGNING CAPITALIST SYSTEMS

Many left-leaning environmentalists say that capitalism is the enemy, corporations are to blame, and the corporate capitalism they've spawned is utterly broken and killing both people and planet. They call for system change—not climate change. Naomi Klein pits capitalism against the climate.[52] Yes, the current version of capitalism may be wreaking havoc, but it's not that capitalism is broken. Rather, it is doing exactly what it was set up to do: deliver return on investment to capital owners by serving human wants through the market. The problem is that capitalism is working one-sidedly and *too effectively* in this narrow sense. It is today, in the first decades of the 2000s, a runaway juggernaut that we now need to learn how to contain and handle safely. If we want change, we need to redesign the framework around capitalism and growth, not negate, bash it, or kill it, denying the human psyche its subconscious yearning for growth. Because neither capitalism nor growth dynamics are going away anytime soon.

We should acknowledge that capitalism and markets are among humanity's greatest ideas and achievements. But we must be clear about what they are—and what they are not. At its core, capitalism is a *social engine*, a blind mechanistic system: It accelerates investments to increase profits and further asset growth for evermore investments. Its root, *capital*, refers to both tangible, manmade things like steam engines, railroads, cows, and computers and to the funds needed to build and purchase those things. As we know, capital begets more capital. And it lets the strongest players, those owners with excess money, put their capital into action to make more stuff: goods and services. Those who put the most money in get the greatest returns back out (on average). Fundamental ideas such as property, assets, interest rate, and return on investment make sure this happens predictably, year by year.

That's why the haves can make more money than the have-nots. And it is an exponential affair: 10 percent interest on $100 million yields $10 million per year in return. But 10 percent on $100 yields only $10 over the same period. After seven years with compound interest each investment will double. Our have now owns $200 million; our have-not only $200.