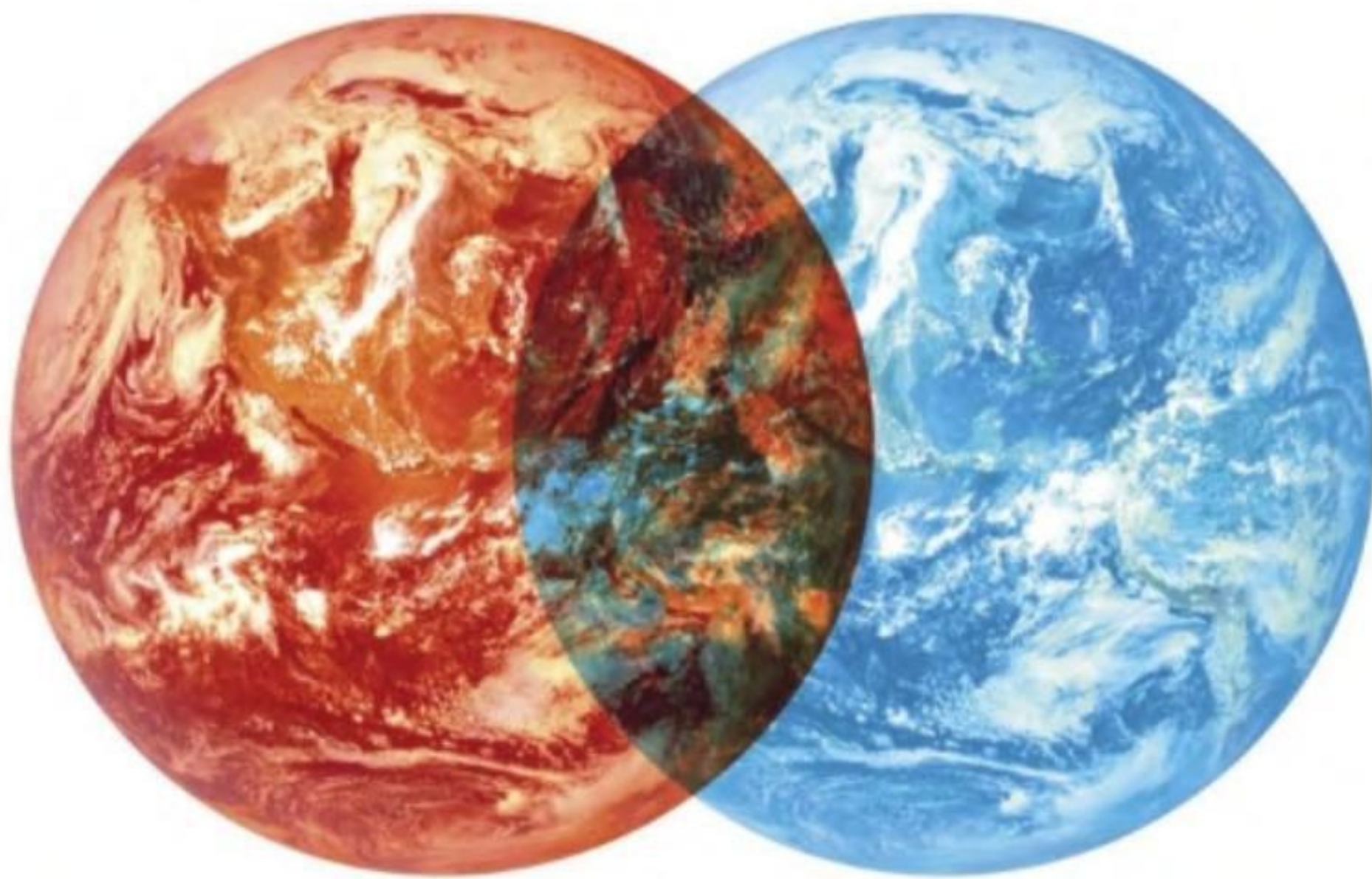


"This is one of the most inspiring books I have ever read."

—Yuval Harari

THE FUTURE WE CHOOSE



The Stubborn Optimist's Guide to the Climate Crisis

Christiana Figueres and
Tom Rivett-Carnac

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to the Climate Crisis

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and Tom Rivett-Carnac



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AUTHORS' NOTE

We are good friends and fellow travelers on this planet, but we differ in many ways. We were born in two different geological periods. Christiana was born in 1956, at the end of the twelve-thousand-year Holocene epoch, when a stable climate allowed humanity to flourish, and Tom in 1977, when the Anthropocene epoch—characterized by humanity's destruction of the very conditions that allowed us to thrive—began.

We come from opposite sides of the geopolitical map; Christiana from Costa Rica, a small developing country that has long been a model of economic growth in harmony with nature, and Tom from the UK, the world's fifth-largest economy and the birthplace of the Industrial Revolution and its reliance on coal.

Christiana comes from a deeply political family, immi-

Authors' Note

grants to Costa Rica on both sides. Her father was three times president of the country and is considered the father of modern Costa Rica. Not only did he initiate some of the most far-reaching environmental policies in the world, he remains the only head of state ever to have abolished a national army. Tom stems from a family steeped in British history and rooted in the private sector. He is a direct descendant of the founding chairman of the East India Company when it was the only company in history to have a private army. Tom's earliest memories are of looking for oil with his petroleum geologist father.

Christiana is the mother of two adult daughters, and Tom is the father of a daughter and a son, both under age ten.

We could have had nothing in common, but we deeply share that which is most important: concern for the future of our children and *yours*. In 2013, we decided to work together to forge a better world for all children.

From 2010 to 2016, Christiana was Executive Secretary of the United Nations Framework Convention on Climate Change, the organization tasked with guiding the response of all governments to climate change. Assuming the highest responsibility for negotiations right after the dramatic debacle of the 2009 Copenhagen climate change conference, Christiana refused to accept that a global agreement was impossible.

In 2013, she heard about Tom, who was then president and CEO of the Carbon Disclosure Project U.S.A. and a

former Buddhist monk. Intrigued by his unusual combination of experiences, Christiana asked him to join her in New York City to discuss his becoming her Senior Political Adviser.

At the end of a walk around Manhattan that took the better part of the day, Christiana turned to Tom and said, “It’s clear to me that you have none of the experience necessary for this job. But you have something far more important: the humility to foster collective wisdom, and the courage to work within a complexity that is beyond any mapping.”

With that, she invited him to join the UN effort to advance the negotiations for the Paris Agreement as her chief political strategist. He designed and led the largely covert Groundswell Initiative, which mobilized support for the ambition of the agreement from a wide range of stakeholders outside of national governments. A few years later the most far-reaching international agreement on climate change ever attempted was finally achieved.

When the green gavel came down at 7:25 p.m. on December 12, 2015, adopting the Paris Agreement, five thousand delegates who had been holding their breath for hours jumped out of their seats in ecstatic delight, in celebration of the historical breakthrough. One hundred and ninety-five nations had just unanimously adopted an agreement to guide their economies for the next four decades. A new global pathway had been charted.

Authors' Note

But pathways are valuable only if they are used. Humanity has procrastinated for far too long on climate change—now we have to walk the path, or rather we have to run it. This book maps the route of that run, and we hope you will run alongside us.

Join us at www.GlobalOptimism.com

INTRODUCTION TO THE VINTAGE BOOKS EDITION (2021)

The Critical Decade

We wrote this book before COVID-19 crashed into our world. In fact, we managed only the first three stops on a planned yearlong book tour before we rushed to our respective homes and into a global lockdown that has changed everything. Since then we have been shocked at how many aspects of both the dystopian and the desirable futures we describe in this book suddenly came into relief and stark contrast with each other.

More than ever, we are determined to play our part in ensuring our future is one that we deliberately choose, rather than one we stumble into blindly.

We have seen the world on fire, from the Amazon rain forest to California and from Australia to the Arctic. The hour is late, and the moment of consequence, so long delayed,

is now upon us. Do we watch the world burn, or do we choose to do what is necessary to achieve a different future?

Who we understand ourselves to be determines the choice we will make. That choice determines what will become of us. The choice is both simple and complex, but above all it is urgent. The next decade will be the most consequential in human history. We are choosing between two utterly contrasting futures, one to be feared and the other to be proud of. This book presents three mindsets that are essential for making the wiser choice. We can do this.

We remember a twelve-year-old girl marching with her friends down Sixteenth Street in Washington, D.C., at ten a.m. on a Friday, holding up a hand-painted sign of the Earth enveloped in red flames. In London, grown-up demonstrators dressed in black and wearing riot-police headgear form a human chain blocking traffic at Piccadilly Circus, as others glue themselves to the pavement in front of the headquarters of BP. In Seoul, South Korea, the streets teem with elementary schoolchildren sporting multicolored backpacks and carrying banners that say *CLIMATE STRIKE*—in English, for the benefit of the media. In Bangkok, hundreds of teenage students take to the streets. With firm resolve and heavy hearts, they walk behind their defiant leader, an eleven-year-old girl carrying a sign: *THE OCEANS ARE RISING AND SO ARE WE.*

All over the world, millions of young people—inspired by Greta Thunberg, the teenage girl who began a lone protest in front of the Swedish parliament—are engaging in

civil disobedience to draw attention to climate change. Students understand the scientific projections and are terrified about the diminished quality of life on their horizon. They demand decisive action now. They are helping to raise the level of outrage about the insufficiency of our efforts to address the crisis, and they have been joined by scientists, parents, and teachers. From the quest for independence in India to the civil rights movement in the United States, civil disobedience erupts when reigning injustice becomes intolerable, as we are now seeing with climate change. Unacceptable generational injustice and a deplorable lack of solidarity with the vulnerable have opened the floodgates of protest. Those who will be most affected have taken to the streets. Their anger is energy that we desperately need. It can propel a wave of defiance against the status quo and catalyze the ingenuity needed to realize new possibilities.

To protect what we love from danger is a natural human instinct that, when we feel a lack of agency, can easily transform into anger. Anger that sinks into despair is powerless to make change. Anger that evolves into conviction is unstoppable.

These protests should come as no surprise. We have known about the possibility of climate change since at least the 1930s and have been certain since 1960, when geochemist Charles Keeling measured CO₂ in Earth's atmosphere and detected an annual rise.¹

Since then we have done little to counter climate change, the result being that greenhouse gas emissions, the cause

of climate change, are increasing. We continue to pursue economic growth through the unbridled extraction and burning of fossil fuels, with a fatal impact on our forests, oceans and rivers, soil, and air. We have failed to manage wisely the very ecosystems that sustain us. We have wreaked havoc on them, unintentionally perhaps, but relentlessly and decisively.

Our negligence has catapulted climate change from an existential challenge to the dire crisis it is now, as we rapidly approach limits beyond which Earth as we know it will cease to be. And yet for many, these depredations are invisible. Despite the increasing frequency and intensity of natural disasters, we still have not connected the dots between the ongoing destruction of our natural habitats and our future ability to ensure our children's safety, feed ourselves, inhabit coastlines, and uphold the integrity of our homes. If nothing else, the human tragedies of 2020 have shown us that our lives and livelihoods are entirely dependent on respecting nature. Moving beyond injustice, restoring nature, eliminating racism, and solving the climate crisis can only be achieved if we recognize that they are all fundamentally the same challenge of how humans live well together on this Earth.

Governments have taken incremental steps to address climate change, treating it as a singular issue when, in fact, it cuts across all the issues we need to tackle. The furthest-reaching effort is the Paris Agreement, which delineates a unified strategy for combating climate change. All govern-

ments of the world unanimously adopted it in December 2015, and most ratified it into law in record time. Since then many corporations, large and small, have set laudable emissions-reduction goals for themselves, many local governments have enacted effective policies, and numerous financial institutions have shifted significant capital from fossil fuels to alternative clean technologies. However, some governments have started to declare a climate emergency because, as essential as the current corrective actions are, taken together they still fall far short of what is necessary to stop the rise—and start the reduction—of emissions worldwide. Every day that passes is one day less that we have to stabilize our increasingly fragile planet, by now on its way to becoming uninhabitable for humans. We are running out of time. Once we hit critical thresholds, the damage to the environment, and consequently to our future on this planet, will be irreparable.

Over the years, public reactions to climate change have run the gamut. At one extreme are the climate deniers who say they don't "believe" in climate change. Denying climate change is tantamount to saying you don't believe in gravity. The science of climate change is not a belief, a religion, or a political ideology. It presents facts that are measurable and verifiable. Just as gravity exerts its force on all of us, whether we believe in it or not, climate change is already affecting us all no matter where we were born or where we live. The irre-

sponsibility of not “believing” in climate change is becoming more apparent with every new catastrophic event. Climate deniers are shamelessly protecting the short-term financial interests of the fossil fuel industry to the detriment of the long-term interests of their own descendants.

At the other extreme are those who acknowledge the validity of the science but are beginning to lose confidence that we can do anything to address climate change. People feel real grief over the unspeakable loss of ecosystems and biodiversity and over how much more we are about to lose, including the future of human life as we know it. Those who are enveloped in this grief may have lost all faith in our collective capacity to challenge the course of human history. Every new documentary, every new scientific study, every report of disaster deepens the pain. Grief can be a powerful, transformative experience for some, and arguably a major reason climate change has continued largely unchecked for so long is that we have failed to truly feel what it will mean. It is important that we all allow ourselves adequate time and space to deeply feel our grief and to openly express it. As we tune in to the raw emotion, many of us will undergo a dark, unsettling period of despair, but we cannot allow it to erode our capacity to courageously mobilize for transformation.

A larger group of people, between these two extremes, understands the science and acknowledges the evidence but takes no action because they don't know what to do or because it is far easier not to think about climate change. It's scary and overwhelming. To a large extent, many of us

stick our heads in the sand. Every time we see a report on extreme weather—hurricanes that used to occur once every five hundred years in a region now occur twice in a month, droughts that shrivel entire villages off the face of the Earth, heat waves that break record upon record, disasters that illustrate what is really going on—we feel a knot in our stomach. But then we turn off the news and distract ourselves with something likely to make us feel less hypocritical. Better to act as if nothing were happening or as if there were no way to stop it. That way we can delude ourselves that life will continue unimpeded. While this reaction is understandable, it is also a colossal mistake. Complacency now will lock us into a future of guaranteed scarcity, instability, and strife.

We are already too far down the road of destruction to be able to “solve” climate change. The atmosphere is by now too loaded with greenhouse gases and the biosphere too altered for us to be able to turn back the clock on global warming and its effects. We, and all our descendants, will live in a world with environmental conditions that are permanently altered. We cannot bring back the extinct species, the melted glaciers, the dead coral reefs, or the destroyed primary forests. The best we can do is keep the changes within a manageable range, staving off total calamity, preventing disaster that will result from the unchecked rise of emissions. This, at least, might usher us out of crisis mode. It is the bare minimum that we must do.

But we can also do much more.

By addressing the causes of climate change now, we can at once minimize risks and emerge stronger. Today we have the unique chance to create a future where matters not only stabilize but actually get better. We can have more efficient and cheaper transportation, resulting in less traffic; we can have cleaner air, supporting better health and enhancing the enjoyment of city life; and we can practice smarter use of natural resources, resulting in less pollution of land and water. Achieving the mindset needed to attain this improved environment would signal a maturation of humanity.

Without diminishing the enormity of what we are facing with climate change, we are capable of changing course, and no objective evidence says otherwise. Our societies have faced daunting challenges before—institutionalized slavery, the oppression and exclusion of women, the rise of fascism. To be sure, none of these challenges has disappeared, but when addressed collectively, we know they are surmountable. Climate change is even more complex because of the finality it portends for the human species, but we are well prepared to deal with it. We have already achieved a host of social and political successes; we have most, if not all, of the technologies we will need; we have the necessary capital; and we know which policies are most effective. This is a crisis of will, not of knowledge. The changes we need to make are significant but doable.

Whether you are complacent about climate change or

in pain or angry, this book is an invitation for you to take part in creating the future of humanity. We invite you to be stubbornly optimistic in the recognition that, despite the seemingly daunting nature of the challenge, collectively we have what it takes to address climate change now.

Those of us alive right now have the unique privilege of forging a healthy, bustling future through the steps we take today. Each of us can and must protect what we love.

This invitation requires your immediate response. Can we count you in?

Two dates should now be seared in everyone's mind: 2030 and 2050.

By 2050 at the latest, and ideally by 2040, we must have stopped emitting more greenhouse gases into the atmosphere than Earth can naturally absorb through its ecosystems (a balance known as net-zero emissions or carbon neutrality). In order to get to this scientifically established goal, our global greenhouse gas emissions must be clearly on the decline by the early 2020s and reduced by at least 50 percent by 2030.

The goal of halving global emissions by 2030 represents the absolute minimum we must achieve if we are to have at least a 50 percent chance of safeguarding humanity from the worst impacts. We are in the critical decade. It is no exaggeration to say that what we do regarding emissions reductions between now and 2030 will determine the quality of human life on this planet for hundreds of years to come, if not more. If we do not halve our emissions by 2030, we are

The planet will survive, in changed form no doubt, but it will survive.

The question is whether we will be here to witness it.

That's why climate change is the mother of all issues.

This crisis both dwarfs and encompasses any other issue we may care about. Climate change should be of concern to all who care about social justice. It affects the poor in every country disproportionately—not only because they are often more exposed and invariably more vulnerable to climate-related shocks, but also because they have fewer resources with which to respond to disaster.

Climate change should be of concern to all who care about health. The burning of fossil fuels releases the greenhouse gas emissions that are responsible for climate change. But the burning of the very same fossil fuels (coal for industrial heat or electricity generation and diesel or gasoline for transportation) also pollutes the local ambient air with particulate matter. Microscopic pollutants in the air slip past our body's defenses, penetrating deep into our respiratory and circulatory systems, damaging our lungs, hearts, and brains. They are so pernicious to human health that more than 7 million people die from air pollution each year.⁷

Climate change should be of concern to all who care about economic stability and investment value.⁸ It is no secret that coal has lost its financial viability in most parts of the world because it can no longer compete with cheaper and cleaner renewable energy options such as solar.⁹ Coal mines and coal plants are closing, and there is increasing momentum

in the coal divestment movement, likely to be followed by divestment from other fossil fuels.¹⁰ Central banks around the world are assessing the macroeconomic risk of trillions of dollars invested in those high-carbon assets. The consensus is growing that we need to shift smoothly but decisively into clean energy assets that will more safely keep their value over the long term.¹¹

Finally, and fundamentally, climate change should be of concern to all who care about intergenerational justice—which should be every one of us. If we fail to act as we should, future generations will be powerless to undo the inexorable consequences of our failure. Hence our profound moral responsibility to them. Failure to make hard choices now will rob our children and grandchildren of their rightful future.

Some believe we are hardwired to react to threats only if they are immediate. The threats from climate change are now immediate. Superstorms, cyclones, wildfires, droughts, and floods everywhere give us ample evidence of climate change, and those disasters will increase in frequency, scale, and location. We cannot deny or ignore climate change any longer. We now need to let go of half-hearted attempts and instead act in proportion to the magnitude of the challenge.

PART I

TWO WORLDS

have absorbed more than 90 percent of the extra heat we have produced over the last fifty years.⁹ As a result, half the world's coral reefs are already dead,¹⁰ and the Arctic summer sea ice, whose reflective capacity helps to regulate temperatures all over the world, is shrinking rapidly.¹¹ The melt from land glaciers has already caused sea levels to rise more than twenty centimeters, leading to major salt intrusion in many aquifers, worsening storm surges and existential threats to low-lying islands.¹² In short, in just the last fifty years we have catapulted humanity and the planet out of the previous benevolent Holocene epoch and into the Anthropocene, a new geological period where biogeochemical conditions are dominated not by natural processes but by the palpable impact of human activity. Humans are for the first time ever the prime driver of large-scale climate change on the planet.¹³

All studies you may read about the Anthropocene epoch point to the unprecedented levels of destruction that we have caused in just five decades.¹⁴ The underlying assumption in those analyses is that we have irretrievably cast our die and that increasing destruction will be the leitmotif of the entire geological era.

We take a radically different view.

We argue that devastation is admittedly a growing possibility but not yet our inevitable fate. While the beginning of this period of human history has been indelibly and painfully marked, the full story has not been written. We still hold the pen. In fact, we hold it more firmly now than ever

before. And we can choose to write a story of regeneration of both nature and the human spirit. But we have to choose.

In deciding what kind of world we and future generations will live in, we don't have many options; we have in fact only two, both of which are set out in the Paris Agreement, and both of which we present here for your consideration. Keep in mind that we have already warmed the planet by 0.9 degrees Celsius more than the average temperature before the Industrial Revolution. Under the Paris Agreement, all nations committed to collectively limit warming to "well under 2 degrees Celsius," and ideally no more than 1.5 degrees Celsius (2.7 degrees Fahrenheit), through national emissions-reduction efforts that substantially increase every five years. To start the process, in 2015, 184 countries registered details of what they would do in the first five years and agreed to come back every five years to make stronger commitments, since the first round of commitments was only the first step toward achieving the long-term goal of net-zero emissions.

We present two scenarios. One or the other will become our reality.

The world we are now creating, leading to warming of more than 3 degrees.¹⁵ The first scenario we set out illustrates the very dangerous trajectory we are on right now. If governments, corporations, and individuals make no further efforts than those registered in 2015, we will go to a warming of at least