FRANÇOIS TADDÉI

LEARNING PLANETIZEN MANIFESTO
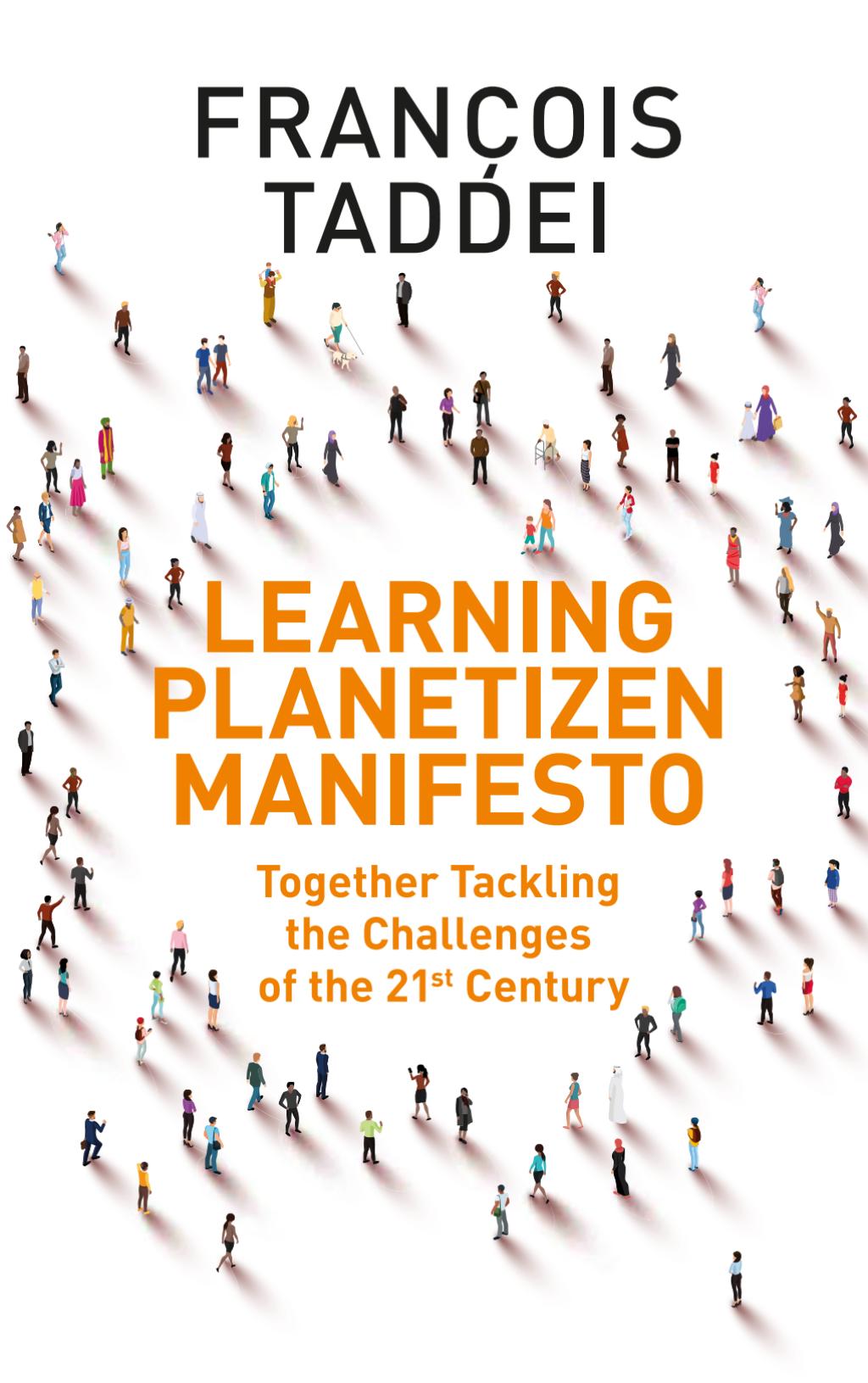
Together Tackling the Challenges of the 21st Century

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LEARNING PLANETIZEN MANIFESTO

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*Translated from French
by Timothy Stone*

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#NotTheOnlyOnes
"You may say I'm a dreamer
But I'm not the only one"
John LENNON, "Imagine"

"Never doubt that a small group of thoughtful,
committed citizens can change the world.
Indeed, it is the only thing that ever has."
(Quotation attributed to anthropologist Margaret Mead,
though the exact origin is unknown)

"It's important to make a dream of life and a dream, reality."
Pierre CURIE, age 18, in his diary dated 4 January 1881
(Quotation often mistakenly attributed to
Antoine de Saint-Exupéry, author of *The Little Prince*)

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Thank you for giving this book a try. It's a call to action, collective action alongside the like-minded and like-willed among us because we cannot tackle the problems of the 21st century in our individual silos. Should inspiration strike you while reading this book, should you like Martin Luther King want to "planetize the movement", don't be shy to share your ideas on social media using the hashtag #planetize to perhaps get your movement and your community off the ground. Consider formulating your idea starting with "What if we…" Personally, I can't wait to read what you come up with. Sharing your ideas on social media is a way to build community and keep the spirit of creativity and activism alive, and should your ideas change as you delve further into your own reading and exploring, make sure to let your community know. This book is a small but necessary first step to try to inspire you, the global citizenry, to make your contribution to collective intelligence in order to build a better future "under the planet's eyes".

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Introduction

Under severe stress, bacteria must either migrate, mutate, or change their environment. This is the basic blueprint of how all organisms try to cope when faced with adversity.

In the spring of 2020, when Covid-19 first spread like wildfire around the globe, we witnessed humanity's greatest challenge: adapting rapidly at a global scale in the face of adversity. Some people migrated from their cramped living spaces in high-density urban environments to more spacious and comfortable abodes in suburbs and country sides. To maintain a level of normalcy, we all adapted with impressive ingenuity how we worked, exercised, socialized, connected with loved ones, and attended classes. Institutions likewise adapted, and at a speed that I'm sure gave some people whiplash, as politicians doffed their usual credos about limited budgets, etc., to spread Covid-19 relief far and wide. The medical community likewise adapted at breakneck speed. Drug companies brought efficacious vaccines to market in a span of mere months, drastically lowering rates of Covid-19 hospitalization to get the global hustle

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and bustle back on its feet. But not before we changed, in some cases irrevocably, our living and work environments to make them less conducive to the spread of disease.

While the pandemic showed us how resilient we can be, it likewise aggravated existing social inequalities that had long been festering before lockdowns and social distancing showed up. It exposed the dangers of unbridled economic growth and urbanization that slashes and burns our forests and, as a result, makes us more vulnerable to zoonotic viruses (*i.e.* viruses that are transmissible from animals to humans such as Covid-19). The societal ills that created the global health crisis are the same ills that have fueled the global environmental crisis, causing biodiversity to vanish, increasing the acidity of our oceans by 30%[i], and everywhere putting first in the line of fire those in the lowest income brackets. Before the pandemic, the climate crisis had already exposed the weaknesses of our current global economic model in which the wealthy few in the industrial world amass unprecedented wealth, destroying the planet in the process, while children in the developing world suffer the worst effects of climate change and pollutions. According to the August 2021 UNICEF report "The climate crisis is a child rights crisis,"[ii] children whose parents have produced the least amount of greenhouse gases, *i.e.* the impoverished, will be the first to suffer major health effects from climate change. This finding is based in part on the latest report from the Intergovernmental Panel on Climate Change (IPCC), an organization which has only recently begun—and it's about time—to include in its reports outcry from young climate activists to try to add to the sense of urgency, as if to say, "These are the voices we should really be listening to."

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In 2021, for the 26ᵗʰ time in a row, the United Nations Conference of the Parties on climate change, or COP, came and went to no great avail. It was the same story as ever: too little too late, or as renowned climate activist Greta Thunberg put it, a "two-week long celebration of business as usual and blah, blah, blah" and "a global-north greenwash festival.ⁱⁱⁱ" As evidenced by the Thunberg's presence, there was at least more representation from youths this time around. In the face of climate change, declining biodiversity, lack of gender parity, persistent racial discrimination, unprecedented economic inequality—the list goes—young people at the summit were caught between hope for what could be and frustration with the process. Part of that frustration comes from the fact that minors are voiceless without the franchise, and even if they could vote, global governance isn't robust enough to guarantee the changes they're demanding. How can we make youth-activist voices heard when they don't have the right to vote? What if we were to actually listen to them for a change?

There's no global governing body to overhaul climate policy. But what if we could make one? What if we could become the first-ever citizens of the planet aka planetizens, caring for its natural, cultural and digital commons?

For years experts have been sounding the alarm about climate change and the pitfalls of the unfair economic order. Millions of people have spent their lives hard at work trying to combat these ills the best they knew how. Their efforts have borne fruit, but with governments coming late to the party and typically punching well below their weight, it's simply not enough. It takes several generations to get out of poverty and the clock is

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ticking on our planet even remaining viable for the next few generations. How can we kick things into higher gear and get the intergovernmental legislation passed that we so desperately need?

This book attempts to answer that question.

We'll look at a series of "what if" questions that are calls to reflect on the issues that plague us as a necessary step to counteracting them together.

When I say "us," I don't simply mean you and me and anyone else reading this book. "Us" refers to everyone involved in solving the problems that this book addresses. Some of the problems start in the family, in which case "us" refers to the family. Some of the problems start in our communities, in which "us" refers to the people in our communities. Most challenging of all are the global-scale problems, in which case "us" refers to humanity as a whole. The qualifier "Learning" attached both to the title of this book and the name of the research institution I founded in Paris with Ariel Lindner, the Learning Planet Institute, refers to embracing challenges as such, not necessarily having the answers at the outset, and finding our way there through a community of support and engagement.

For those who feel they're on the sidelines when it comes to the issues besetting our communities and our world, I humbly encourage you to reconsider. We can all do more to show more compassion to those in need or, in the case of the planet's depleting resources, lead a less carbon-intensive lifestyle. I'm not asking anyone to feel guilty. I'm simply encouraging a kind of rational optimism. We all know people who complain about climate change and environmental degradation only to blatantly contradict their words in their actions. Rational optimism is, to me,

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the most clear-eyed path forward. It acknowledges that no one's perfect while not giving in to the temptation of hopelessness. Remember that in every moment you can either be part of the problem or part of the solution.

As an illustration of what I mean, consider the word for "crisis" in Mandarin, which is made up of two ideograms. The first, wēi (危), means danger, while the second, jī (機), is associated with the words for change and opportunity. What if we approached all crises as hidden opportunities for change? And what if that change meant becoming more resilient, or, to use a term popularized by author Nassim Nicholas Taleb, more antifragile?[iv] Wikipedia offers a clear definition of the term: "Antifragility is a property of systems that increase in capability to thrive as a result of stressors, shocks, volatility, noise, mistakes, faults, attacks, and failures." What if we took on crises not with fear but with a desire to correct the issues that got us there in the first place while in the process becoming more resilient to future crises?

This book is a kind of sketchbook of ideas on how to become more resilient, both as individuals and as a species. The sketches are divided into three sections. **The first** discusses the end of the pre-Covid-19 era. Almost as soon as the health crisis was upon us, people began projecting on "the new normal" that would follow Covid-19, seemingly as a way to cope with the trauma we knew was coming. You don't need me to tell you that the "normal" we had in the pre-Covid-19 era is lost and gone forever. What we're left with is an opportunity to be more level-headed, to be better to ourselves, our communities, and the planet, but that won't happen on its own. Pre-Covid-19 normal was how we got into this mess in the first place. That normal

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was built on the back of the Industrial Revolution, poised to force every last person, plant, and square inch of the planet into submission to maximize somebody's profit. That normal is over. What will be the new normal?

The second part of this book asks, Can we come together to make the new normal desirable for everyone and even the planet? With every fiber of my being I believe it's possible because, as a biologist, I know it's in the nature of living organisms to cooperate. We'll discuss the irony of the term "social distancing," as in fact our need for social contact has only grown under lockdown and physical-distancing mandates. **The third** and final part will introduce you to an important concept in mathematics (don't worry, it will be painless): fractals, as a model for how we can respond to build back to a new normal that's way better than the old one. For a brief introduction to fractals, the fractal you're likely most familiar with is Russian dolls, where the doll remains the same despite changing levels of magnitude. The idea is to apply that concept to initiatives aiming to tackle global problems such that major movements like the UN's Sustainable Development Goals can be scaled down to fit, say, how you operate your own household—or vice versa, wherein small solutions you come up with, perhaps even in your household, can be scaled up to be applied at the international level. My hope is this approach will spread all over the globe. I call it "thinking fractal, acting viral."

It's important to clarify that scaling a given initiative up or down doesn't mean imposing it on others, but rather giving other communities a chance to take inspiration from the idea and try to find their own way to implement it, doctoring the recipe as needed. For example, a

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small-scale effort to preserve the lifestyle and traditions of pygmies in the Congo could apply to the challenge of making greener cities in the developed world. Tiny initiatives are much more likely to make a big impact because, after all, what are global problems but the lump sum of myriad local dilemmas? The question is how to share knowledge and initiatives and how to replicate one approach at increasingly larger scales.

I hope the pandemic will be the last example we need on how individual behaviors have repercussions on the global crisis. Perhaps more than ever in our history, humankind is no longer an abstract concept. In the post-Covid-19 era, humankind can be defined as everyone who can become infected with a deadly disease and spread that infection between themselves. In a way, Covid-19 has united us in that every single person on the planet went through the exact same life-altering experience at the same time.

Speaking for myself, I've experienced as much anxiety as hope throughout these trying times.

My anxiety is that we'll be too slow to comprehend, if indeed we comprehend at all, that this pandemic is an alarm signaling the fragile state of the things we hold dear. Neo-fascism and conspiracy theories are gaining more and more ground. Trump (out of office) and Bolsonaro have major followings yet, and groups like the Taliban and Boko Haram are galvanized by failures in democratic governance. Can we establish a New Enlightenment, one that's more inclusive and more respectful of the environment and more mindful of future generations? I had the honor of being invited by Helga Nowotny, founder of the European Research Council, to a seminar in Finland called "Reinventing the Enlightenment" that focused

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on these very issues. It gave me a chance to discuss these ideas with a host of scientists, historians, artists, and philosophers, and I can't describe how enriching it was for me. I never thought that in my lifetime I would have to take arms against a sea of troubles in defense of Enlightenment values, but alas, here we are. The mechanism underpinning this book is looking to the past to try to better understand the present and gain ideas for the kind of future we want.

The Enlightenment thinkers had to face down fanatics in their own time, and, like Rome, the Enlightenment wasn't built in a day; it slowly permeated society from the ground up in the wake of the Renaissance and humanism, bolstered by the invention of the printing press that made it possible for ideas to travel on horseback and spread across a continent. It took a century for momentum to build, but as ideas, debate, science, education, philosophy, and ultimately citizenship and democracy flourished, there would be no turning back. To bring about a new Enlightenment, a Planetizen Enlightenment that's more inclusive of others and respectful of the planet, have no doubt it will take time for everything to fall into place.

The fanatics of our time attack the Enlightenment values of democracy, education, freedom of speech, women's rights, civil rights, and a free press. They are those who care not one iota whether or not we bequeath unto our children and grandchildren a viable planet; they are those who have no qualms about destroying the environment in the interest of gaining as much profit as possible in the short term. Let's use these attacks as a catalyst for uniting under the banner of the New Planetizen Enlightenment, one that's more resilient, more global, more inclusive, and

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more ecologically sound. The democratic world received a huge boost when Trump fanaticism failed at the ballot box. Despite the conspiracy-filled vitriol Trump uses to ignite his base, the pro-democracy camp came together to make a critical statement about what kind of governance we need when the world is in crisis.

That major victory for democracy was a good place to start for the Planetizen Enlightenment. We need more like it, now and in future and across the globe. This book will discuss a few of the victories that you may not have noticed because they're happening on small scales, yet despite their modest size, they are doing their part to reignite what the Greeks first started in Athens 2,500 years ago, where education, art, philosophy, citizenship and democracy swirled about in debates at the Agora and gave birth to the world's first democratic institutions. Athenian democracy was not able to extend beyond the city limits because communication technology didn't exist back then. It was only with the printing press two millennia later that democracy could spread across whole nations because the printed press could travel farther than the echoes of the debate hall. I highly recommend Elizabeth Eisenstein's remarkable book on the impact of the printing press, *The printing revolution in early modern Europe*[v], both for a wonderful history lesson and a means to understanding the current information-technology revolution and the major social upheavals that have resulted from it.

As communication and transportation technologies grow from the national to the international scale, so too do our problems. Yet the cornerstone of the Planetizen Enlightenment is digital technology. In the ancient and Enlightenment iterations of democracy, rights were not

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extended to women, children, foreigners, migrants, and minorities. Let's put these groups at the forefront of the New Planetizen Enlightenment, along with the well-being of the planet that we all share, as concern for the survival of the planet is where planetizenship starts. Many people consider themselves global citizens, but there are no actual democratic rights that come with that status. Digital technology is how we can create fractal global citizenship wherein citizenship on the local level means citizenship on the global level, rooted in the values of respect for all people and environmental stewardship (which is also a way to respect people of future generations).

From Netflix to the upcoming releases at the bookstore, there's no shortage of dystopian narratives being told in our day, and indeed in day-to-day living it seems the bell is tolling on the old world, the Enlightenment world that ushered in the Industrial Revolution and ruined the planet, eroded biodiversity, and, in our time, rolled out AI with no consideration for ethics, privacy, or safety. The pioneers of AI envisioned it as a tool for the people by the people, but moneyed and powerful interests have monopolized it to gain ever more wealth and advantage by controlling and manipulating people, whether that's through state surveillance or targeted advertising and nudges to get us to consume more than we need, destroying our natural commons, laying waste to the environment as we do so. To the extent digital technology can be used for evil, it can also be used for good; it can provide answers to questions T.S. Eliot asked in 1934 in his play *The Rock*:

"Where is the Life we have lost in living?
Where is the wisdom we have lost in knowledge?
Where is the knowledge we have lost in information?"[vi]

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As AI grows smarter with each passing day and parses through our data more and more efficiently, we haven't yet figured out how to harness it to build apps that will help us progress in wisdom, ethics, and living.

It is my hope we will see the current crisis as an opportunity to become aware of how dire our situation is and take action as individuals and in community. If there's a silver lining here, it's that the pandemic has reminded us just how social we are as a species and how much we need each other, both for our emotional well-being and for making the world turn. The pandemic demonstrated just how important it is to behave responsibly toward others and take accountability for our actions.

There's an old word for all this, and that's compassion, *i.e.* treating others with care regardless of who they are. American social psychologist Jonathan Haidt in his moral-foundations theory identified caring and fairness as the two abiding human values present in every culture throughout history. Every human value system we have evidence of features caring and fairness, and the reason for that is obvious: it's because we all start out as vulnerable infants who are dependent on others for survival, thus care and cooperation are critical for staying alive.[vii] The areas where cultures tend to diverge are on our differing senses of freedom, community, authority, and sacrifice. Freedoms come and go depending on what society needs; just think of how lockdown restricted freedoms in order to preserve global health. Community likewise can shift under different regimes; look at how German Jews got ousted from the German community as soon as the Nuremburg laws went into effect. In our day, authority is vested in science and civic governance, but this authority

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is inherently fallible because these institutions are comprised of human beings. Those in search of infallible authority turn to divine figures, but modern society tends to condemn religion as the height of human irrationality. Finally, when it comes to sacrifice, the pandemic showed us how contentious an issue sacrifice can be even within a single culture; many were opposed to lockdowns because they felt the sacrifice of personal freedoms did not justify the benefit of a healthier population.

Haidt calls us to examine our differences in a respectful way in order to better understand one another. I find our universal values much more interesting than our differences. Our universal values can serve as the starting point for uniting us.

What if from that starting point we could build a healthier future together on our shared home, "Homeland Earth," to borrow a term from French philosopher Edgar Morin.[viii] What if we were to extend the values of caring and fairness to the whole of humanity, and from there the entire planet? That's thinking fractal, applying the same set of values at every magnitude. What if we treated every member of the human race like a member of our family? And what if family and global community were, like Russian dolls, not separate entities but one and the same?

Some may be familiar with the Groucho Marx line "I refuse to join any club that would have me as a member." Personally, I refuse to join any group that thinks of itself as exclusive because, in reality, simultaneous group membership is how we all live. Just taking myself as an example, I'm a member of my family, a Parisian, French, Corsican, a European, a planetizen, and, technically, stardust.

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Caring and fairness are the universals in all our groups, so take stock of all groups you belong to and find ways to reinfuse those groups with these essential common values. It's the first small step you can take to redress injustice, which is a failure to respect universal values. The more communities we're a part of, the more opportunities we have to manifest caring and fairness and thereby combat inequality and injustice. This book looks at a host of examples from US, France, India, Taiwan, and beyond, of people doing just that, and from those examples we can try to establish a framework for reflection, action, and collective decision-making in a way that can instill a little hope in all of us.

Trying to be optimistic does not mean shying away from the very serious challenges we face. In fact, those challenges only make the need for an inclusive, ecological Planetizen Enlightenment all the more urgent and necessary. The chapter headings are "What If" questions that open the floor to answers from anyone and everyone. It's a way to emphasize the importance of strength in numbers and our interdependence.

Of course, this book can only scratch the surface of all the possibilities out there. This book is not a plan of action; it's really anything but that. It's not a war yawp beneath some banner; too many throughout history have died for a flag. This book is an attempt at dialogue and reflection, and if something in these pages lights that little fire in you that makes you want to take action, this book also provides you with links and outlets for taking the next step to do just that. You may not find all the ideas in this book relevant to you, but perhaps what you will find relevant is the fact that the challenges we now face

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require collective action on a global scale. This book is a response to global challenges, and the ideas in these pages are intended to help us move toward solutions.

What if by coming together with all the means at our disposal we could accomplish things previously thought impossible? And this not simply for our own benefit, but for the future of humanity?

Part 1

What If We Could Systematically End Injustice?

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What If We Were Witnessing the End of an Era?

Imagine it's spring of 2020. The death rate of Covid-19 is only in the few thousands, but experts and media outlets are in a panic, issuing warnings about a coming wave of infections, the very first. As people begin to grasp the unprecedented scale of the pandemic, they're realizing that the world is about to change irrevocably.

Return to the here and now. As the pandemic has played out, the irrevocable change hasn't been for the better. The "return to normal" is here save for lingering mask-wearing and communication being in large part remote. We haven't—at least not yet—severed ties with the world as it was pre-Covid-19, as we continue to buy, get around, and live in essentially the same way. Should we abandon all hope of change for the better? I think not.

As a biologist, I know that evolution isn't necessarily abrupt, and this is as true in society as it is in nature.

Just look at chemical birth control, legal abortion, and divorce. Their effect on the traditional landscape of the

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family was not immediate. In fact, pro-choice options and legal annulments were around for about half a century before they had a significant impact on coupling and family dynamics. Similarly, the nuclear arms race did not reshape the world order overnight. Rather, it slowly took shape over the course of several decades, and despite the fall of the Berlin wall three decades ago, we still seem to live in the shadow of the Cold War. For another example, the onset of the global AIDS epidemic did not instantly change sexual behaviors, but today the majority of the global population is aware that unprotected sex presents life-threatening risks. Enhanced surveillance techniques and high-security screening at the airport are legacies of 9/11. In short, to quote Bill Gates, "We always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next ten."

With regard to Covid-19, I think it will be remembered as a turning point in history, and we're only now just beginning to see the changes it has set in motion. Fortunately, in most people's minds the pandemic has not elbowed out the environmental and biodiversity crises for attention, and many understand that they're related. Covid-19 showed us that we're able to respond rapidly when need be, but in the long-term context of the environmental crisis, we'll need to get better at taking short-term action for long-term solutions.

This is the end of an era, an era the pandemic exposed for what it was, an era defined by the depletion of both natural resources and human compassion. This era began in the age of the Enlightenment, but its seeds were planted, quite literally, in the Mesolithic era with the Agriculture Revolution and the storing of food, which

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created wealth in human communities. Some 12,000 years on, at the dawn of the Industrial Revolution, French naturalist Georges-Louis de Buffon wrote, "The entire face of the Earth now bears the imprint of Man's power." The ramifications of that imprint wouldn't be fully understood until the turn of the 21st century, which by no coincidence is when the term Anthropocene was coined, meaning a new geological epoch that began when "human activity started to have a significant impact on the planet's climate and ecosystems."[i] Most locate the Anthropocene starting with the Industrial Revolution, but there is debate as to whether it wasn't actually triggered by the post-war boom coupled with nuclear testing that released masses of radioactive particles into the atmosphere. Regardless, pre-digital modernization put unprecedented stress on our natural resources, and the digital age has only ratcheted up that stress by making our processes of production and consumption more stream-lined than ever.

When the Covid-19 pandemic hit, we already knew we were approaching a precipice. Prior to 2020, doomsday cults were becoming more and more prominent, warning that the end of industrial civilization was nigh and that only those who were prepared for it would survive. There's actually a transdisciplinary field called collapsology that studies threats to industrial civilization, taking into consideration everything from climate change to economic systems and global politics.

It is tempting to see the pandemic as part of the doomsday forecast, but the so-called survival essentials—personal helicopters, automatic weapons, etc.—would turn out to be useless against that great global nemesis. Covid-19 spread to every corner of the globe more rapidly

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than any previous epidemic and stifled our ability to do what makes us a unique species, *i.e.* organize, communicate, and cooperate on a large scale.

The experience of the pandemic has been particularly rife with firsts. For the first time since tourism became an industry, it came to a screeching halt. For the first time in the age of modern education, a billion children didn't attend school for weeks and, in some cases, months on end. For the first time, the majority of the labor force didn't go to work. For the first time, love was put on hold for reasons completely unrelated to… well, love. It's the first time we've seen individual liberties, communities, work, and relationships so drastically impacted, and it all happened at once. Crucially, it's the first time that we've had to restrict our face-to-face contact for an extended period of time, regardless of whether it was for a ball game or a funeral, regardless of how much we truly needed to see those people to strengthen the ties that bind.

In the months and years to come, how will we look back on all of this? Will it turn us all into pessimists? Maybe even nihilists? Or will we decipher the riddle of this chaotic moment to find pathways toward a brighter future? Pathways toward a new human story where all people are represented and all people are critical to its success? Will we harness the power of a shared global experience to deepen collective awareness of the need to change course?

That's my hope, and this book is an attempt to push us in that direction.

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I can remember the day I started to hope. It was 18 February 2020. I was at the Learning Planet Institute, the R&D center and graduate school I co-founded with fellow researcher Ariel Lindner nearly 20 years ago.[ii] On 18 February 2020, I was wandering the halls of our gorgeous campus building in the historic Marais district in Paris. That was the day I realized we would have to close our doors, and I was scared because I couldn't say for how long. My inner biologist was doing a mental calculation of the virus's exponential growth.

Like all biologists, I have no misgivings about viruses. They're always one step ahead of our defenses, expert as they are at wrecking their host organisms once they've found even the narrowest of pathways into the body. That's just what they do. That's what all life does, really. Colleagues and friends in China had been warning me about the virulence of the virus for several weeks. I had to cancel a trip I had planned there because Chinese universities were closing. Then universities outside China began closing. I read the early scientific literature on the virus and the first communiqués from the World Health Organization (WHO). It became clear that the virus was headed directly for us. Many French scientists and medical professionals were trying to alert heads of government to take heed, but to no avail. The precedents of previous epidemic scares, Sars-CoV-1 in 2003 and the 2009-10 flu among others had made us scientists crying wolf.

But the spread of Covid-19 was too grim to argue with. I tried to be illustrative in my explanations of exponential growth, using the example of water lilies. If it takes a water-lily plant 100 days to produce enough lily pads to

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cover an entire pond. By day 90, only 0.1% of the pond will be covered, but by day 95 that will become 3%, which by day 99 becomes 50%. You see how it ends. As soon as the Covid-19 reproduction rate reached higher than 1, the infection rate would begin growing exponentially.

But there are none so blind as they who do not want to see. My attempts at sounding the alarm were as vain as those of most scientists and experts around the world. I'll never forget the meetings I attended in those days when at the end everyone would pull out their planners to schedule follow-ups and I would say, "You're scheduling things that are more than likely going to get canceled." Of course I'd be met with dark looks.

Like the rest of the countries that hadn't been affected by the previous epidemics, France was unprepared. And it wasn't just an issue of mask and hand-sanitizer shortages. France, like many countries, suffered from a failure of imagination. We've adapted well, but both in the public and private sectors, decision-making processes are still too top-down, causing innovation to lag as a result because innovation is the fruit of trust, input from multiple levels, and, most importantly, delegation of responsibility.

On that 18th of February, I was overcome with fear, and it's a feeling I'm very unfamiliar with. For 15 years we had worked to build this one-of-a-kind, one-stop-shop research and education center. It took hundreds of imaginations to make the Learning Planet Institute what it is today, but I was made to understand by a few of our funding partners that, if I for whatever reason were to cease to be at the steering wheel, they would suspend their funding. That would mean that, should I perish, the Learning Planet Institute might perish too. I immediately

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set to writing a kind of professional will, an unofficial "legal instrument" for my colleagues to refer to after I was gone. Then I got on the phone with all of them to plan how to go fully online (strange, I must admit, because I had just spent the previous hour addressing them all from beyond the grave). We were actually one of the few institutions in France preparing to go fully online at the time. Many of my colleagues in French education were in the midst of heated demonstrating for better benefits and working conditions. Change was indeed headed for their institutions, just not in a way they could have anticipated. I remained in constant contact with colleagues around the world, from Harvard to Beijing, trying to gather information from them to decide how our institution should proceed. All Chinese universities and major American ones had closed campuses until the following fall and many were learning they were in need of a complete overhaul of their digital infrastructure to cope with a full transition to online. Their initial attempt to adapt would prove insufficient, so instead they would have to, like bacteria, try to change their environment.

Our date for officially closing the Learning Planet Institute fell a few days ahead of French president Emmanuel Macron's first lockdown order. I took a tour of the deserted campus and I can't lie, it was difficult to see the place without a single living soul in it. In the early-childhood-education room, for example, usually buzzing with life, creativity, and energy, there stood a mute pile of stuffed animals that I knew all too well, as most of them once belonged to my kids. The day my daughter decided her bedroom would better serve as a study room rather than a playroom was a big day for her, and she donated

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all her toys to the Learning Planet Institute. Looking at those toys that day, I thought to myself they might keep the Learning Planet Institute safe, so I began stationing them at different posts all throughout the building. It was after I had peppered the whole building with stuffed animals and stepped out on the rooftop patio with my son's old Pikachu that I saw the silhouette of Notre-Dame Cathedral against the skyline. Eleven months prior, I had stood in that very place watching the flames grow higher and higher between its twin towers. It reminded me of the flames I had witnessed with my own eyes rising from two other iconic towers, the World Trade Center towers, before watching them fall 110 stories to the street. My memories blurred, my vision blurred. I had a gut feeling even then the virus would inflict irrevocable damage on us. Alone, I returned to the ground floor, to our Maker Lab, the only part of the Learning Planet Institute that would remain open during lockdown to manufacture visors for city workers and respirator masks and oxygen concentrators for people in need.

In the coming months, my fear that day would thankfully be assuaged, but this would also be stymied in the coming months by glaring disappointments in my fields of specialty: research, education, innovation, digital technology, and biology.

One of my greatest surprises was how quickly vaccines were developed and brought to market, but this was followed by disappointment at private research laboratories refusing to make their work open source, meaning they would not allow other drug companies to replicate their work in order to beat the virus in the race against the clock. Open-source vaccines would have also made for

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greater equity in distribution. How can anyone stand by as millions of people go without equal access to advanced medicine, especially during a pandemic? Drug companies spent billions developing vaccines and needed a return on investment, so why not find a way to compensate them while distributing the vaccines to anyone and everyone? Business is one thing, but a lack of common compassion in a pandemic is beyond my comprehension. And that's not to mention the scientific fact that leaving large swaths of the global population unvaccinated gives the virus opportunities to mutate, as we see with the never ending string of variants. Worse still is that a precedent has been set for competition in times of hardship, meaning things will only get fiercer in future crises.

There was also the pleasant surprise of how quickly people, businesses, and institutions adapted in daily life and made tough situations work by harnessing digital technology. This, inevitably, was followed by another disappointment: fake news about vaccines spread rapidly and tech giants were slow to assume responsibility for it or curb the spread. The Facebook Files reports in 2021 proved what many of us had a feeling was going on: that the tech giant (and likely its cohorts) was unabashedly putting financial interests ahead of the well-being of the users of its products and that it only changes tack when it comes under fire from the public or the government. It comes as no surprise to anyone who saw all the way back in 2003 a little documentary called *The Corporation* that examined the logic of the average corporation in the US. There's a little detail in the 14th Amendment of the US Constitution stating that corporations are actually seen as individuals before the law, meaning they don't have to

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be good-natured individuals if they don't want to be. In fact, there's a business incentive to maximize returns to shareholders and not care one ounce for the social and environmental harm their business causes. The need for oversight of these companies is becoming increasingly clear, and there's lately been some progress on this front as federal governance in the US and the EU are holding Facebook and others to more account, at least in terms of paying their fair share of taxes.

Another nice surprise: education became more of a group effort as remote education fostered greater cooperation and more balanced input from students, teachers, and parents. We also saw a shift in dynamic in the teacher-parent relationship in that the two had to remain on the same page and thus communicate a lot more. Teachers in turn had to rely on their students to help them through the growing pains of the transition to online with apps and technologies kids understand better than most adults. In short, it gave everyone involved an opportunity to peek behind the curtain and see and appreciate all the work that goes into educating a child. People had long waxed poetic about education as a collective endeavor, but here we actually got to see it take shape.

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In the short term, the pandemic has exacerbated pre-existing tensions and injected a whole lot more uncertainty into an already precarious global balance, but what if in the long run it could help us to evolve as a species? I'd like to think that this is what will happen regarding how

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we treat our fellow human beings and how we treat the planet we live on.

While the origin of Covid-19 is not yet clear, similar coronaviruses have often been found in bats, and as a matter of fact over two-thirds of pathogens that have caused disease in humans actually originated in animals. These are called zoonotic diseases, pathogens that transmit from animals to humans, and our history is chock-full of them: the bubonic plague originated in rats, rabies in dogs and foxes, influenza in birds, AIDS in monkeys, Zika in mosquitoes, Nipah in bats and later pigs—the list goes on and on. So long as humans keep pigsties and chicken coops, zoonotic disease will continue to pose a threat. Some of these pathogens will be benign, others deadly. Deforestation and urbanization make matters worse by throwing fragile ecosystems out of balance and bringing us into closer contact with animals carrying viruses that can cross the species barrier. Even when we don't live in particularly close proximity to wild animals, their pathogens can still infect farm animals and even domestic pets and from there threaten us close to home. Global warming also makes us more vulnerable to zoonotic disease, for example with mosquitoes and ticks thriving in warming geographical zones that were previously uninhabitable for them.

If we want to get epidemics under control, we'll have to expand our current notion of human health to include both animal and environmental health, something referred to as the "One Health" approach. The US Centers for Disease Control and Prevention (CDC) define it as "a collaborative, multisectoral, and transdisciplinary approach—working at the local, regional, national, and

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global levels—with the goal of achieving optimal health outcomes recognizing the interconnection between people, animals, plants, and their shared environment." The WHO, the World Organization for Animal Health, and the Food and Agriculture Organization of the United Nations, along with a host of other organizations, are likewise championing this comprehensive health agenda.

One glaring error committed by a lot of countries, and which serves as proof that the One Health approach has a long way to go to change hearts and minds, is that veterinarians and animal-health professionals were entirely discounted in the pandemic-response effort. They're no strangers to coronaviruses and had all the equipment necessary to conduct PCR tests and the like, but all that brain power went squandered just about everywhere except Germany. What's more is that this isn't even a new idea. In 1880, Louis Pasteur was inducted into the French Central Society of Veterinary Medicine even though he didn't work primarily with animals, but in the speech he gave at his induction, he said poignantly, "Science is one whole. Only the man of weak intellect sees divisions within it."[iii] Let's not waste this unique opportunity to recalibrate our approach to health and do the heavy lifting now to preserve biodiversity for the sake of our own health as well as the planet's. Covid-19 as we know will not be the last pandemic. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), which is to biodiversity what the IPCC is to climate, estimates that between "631,000 to 827,000 unknown viruses in nature could still infect people," warning that "future pandemics will emerge more often, spread more rapidly, do more damage to the world

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economy and kill more people than Covid-19 unless there is a transformative change in the global approach to dealing with infectious diseases."[iv]

Peter Daszak is president of the EcoHealth Alliance and he reminds us that "the same human activities that drive climate change and biodiversity loss also drive pandemic risk through their impacts on our environment. Changes in the way we use land; the expansion and intensification of agriculture; and unsustainable trade, production and consumption disrupt nature and increase contact between wildlife, livestock, pathogens, and people. This is the path to pandemics." Experts at the IPBES furthermore "estimate the cost of reducing risks to prevent pandemics to be 100 times less than the cost of responding to such pandemics."[v] Are you listening out there, all you professed haters of bloated government spending?

Urbanization weighs heavily in the delicate ecosystem balance. According to the UN, by 2050 over two thirds of the global population, 6.7 billion people, will be living in cities[vi], with megacities seeing the most population growth. The world's major sprawling metropolises are driving globalization, but were the slowest to mount a vigorous defense once the pandemic hit. Everything that makes them attractive places to live and invest worked against them during the pandemic, and this is something every urbanite experienced in a tangible way. The vibrant social and cultural life of megacities can disguise many of the disadvantages of these places. When vibrant cultural life dried up overnight, the veil was lifted and all anyone could see were the high housing costs, lack of green space, excess pollution and noise, and so on. A large contributing factor to Covid-19's success was mass urban-

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ization. The virus didn't have to spread itself thin across large swaths of land; it could simply piggyback across major trade and transport routes to find new defenseless host organisms stacked on top of each other by the millions in cities. So what if these just happened to be the most productive and vibrant parts of our world? The virus didn't care. Mass urbanization strikes most of us as inevitable in the modern world, but Covid-19 showed us just how spectacularly vulnerable cities really are.

That's not to say that cities haven't long been hotbeds of disease. In the 5th century B.C.E., the Greek physician Hippocrates is recognized as the first person to posit a causal relationship between a lack of sanitation and human pathogens, and he advised people to protect themselves from diseases by avoiding foul-smelling soil, making sure sources of water weren't contaminated, and ventilating rooms. The Roman empire took urban sanitation no less seriously and many of the Roman ruins still around today, *i.e.* aqueducts, fountains, reservoirs, water towers, baths, and sewers, were all ingenious devices for keeping Roman cities clean. In the Middle Ages, people began paving streets to keep city dwellers from having to walk in mud after the rain, and city officials began moving the least cleanly professions, e.g. butchers, tanners, wool washers, felt makers, dyers, skinners, drapers, etc., to the outskirts of town. Contrary to popular belief, Medieval society didn't dispose of waste by tossing it out the window into the street; in fact heavy fines were levied against those who didn't maintain the cleanliness of their street fronts. Cemeteries were relegated to the outskirts of cities. Streets were widened to improve air circulation. Waste disposal became more and more efficient

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over time, especially after the cholera outbreaks of the 19th century—all this predating any scientific grounds for believing in a link between lack of sanitation and disease. The great architects of the modern era, from Haussmann to Le Corbusier, Frank Lloyd Wright, and others, often tried to outdo one another to make the most sanitary infrastructure. It's as though the world of pre-modern medicine was forced to see urban planning as a crucial part of healthcare, but now medicine is so powerful it's left city sanitation as an afterthought. With our renewed sense of vulnerability to disease, it can only be hoped that healthcare and urban development will once again walk hand in hand. Green-city initiatives are a first step in the right direction, as access to green space is associated with better health, and cities such as Edinburgh and Copenhagen, frequently at the top of the rankings for the greenest cities in the world, are becoming increasingly desirable places to live—despite their being so cold for so much of the year!

What if what's really coming to an end is our sense of invulnerability?

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What If We're More Vulnerable than We Ever Imagined?

Confucius famously said, "We have two lives, and the second one begins when we realize we have only one." The same can be said for our planet, for ourselves, our institutions, and our societies.

Prior to the pandemic, many of us were already grimly aware of the precariousness of our planet and biodiversity. Australian environmental philosopher Glenn Albrecht even came up with a new term, "solastalgia," to describe the distress and nostalgia we feel for how things were before the Anthropocene. Longing for bygone forests now trampled under the tread tracks of bulldozers or burnt to ashes, bygone glaciers now shrunk by climate change, beaches now buried under heaps of detritus, rivers now ferrying only urban waste; this feeling of longing goes beyond simple nostalgia. It's solastalgia.

It's perhaps similar to the nostalgia we now feel for life before masks, lockdowns, and fear of new waves of infection. There's a deep feeling of vulnerability that accom-

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panies all this newfound distress and nostalgia, and it's not just we as individuals who are vulnerable, but our institutions and means of livelihood as well. The world order has yet to change much in response, but the times we're living in certainly are. Every facet of our lives has been affected. Health guidelines put restrictions on our relationships. The pandemic changed every facet of how companies and institutions operate. We took pre-Covid-19 life for granted. Looking back on it, what afforded us this feeling? For decades we depleted natural resources and biodiversity without care, and the vulnerability we feel now is only proportional to our feeling of omnipotence then.

The age-old religious belief that natural disasters are attributable to human misdeeds does contain a certain primitive nugget of truth in this instance. Etymologically, Anthropocene means "the human age," or a historical epoch in which human activity is the dominant influence on changes in the biosphere. Our past transgressions are coming back to haunt us.

Prior to spring 2020, only the developing world and the lowest earners in the developed world knew how it felt to be vulnerable. Since spring of 2020, everyone now knows that feeling, and that's whether or not you've been infected with Covid-19 or lost a family member to it. Lockdown, loss of work, and supply-chain shortages have affected everyone, and as a population we're far more in tune now with feelings of vulnerability and the need for solidarity.

It's not just people who are more aware of vulnerability but companies, whole industries, and countries too. Financial uncertainty was a whole new feeling for a lot

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of people who I'm sure never thought they would know what that was like. One group of professionals trained to be resolute in the face of crisis couldn't help but succumb to the overwhelming duress of the pandemic, and here I'm referring not to the military but healthcare workers, the true warriors on the front lines in the struggle against the virus.

Health professionals typically develop an attitude of stoicism in the face of tragedy as a psychological coping mechanism for confronting the ravages of illness, trauma, and death they witness every day on the job. The news has been full of stories of doctors and nurses working to the point of collapse during the pandemic. In November 2020, a number of studies began coming out on the mental-health well-being of French healthcare workers. In a study of intensive-care unit workers, over half of those surveyed reported issues of anxiety and one-third reported depression. In another study of public-hospital workers conducted by psychiatrist Wissam El-Hage from the University Hospital of Tours, 57.8% reported post-traumatic symptoms and between 26%-41% reported mental burnout.

Young medical professionals have been hit particularly hard. Before the crisis, 23.7% of junior hospital doctors reported having suicidal thoughts, 28% suffered from depressive disorders, and 66% from anxiety disorders[vii]. It's not at all surprising considering they worked an average of 58 hours per week with no days off, and, again, this was before the pandemic. Those weekly hours went through the roof when Covid-19 came, and there's no doubt that the quality of patient care suffers when health-care professionals are overworked. One of the first symp-

toms of mental burnout is lack of empathy, which proves particularly malicious in the healthcare setting where doctors and aids have to be willing to listen to patients in order to find the right treatment solutions.

Young healthcare workers were (and still are) on the front lines fighting the pandemic, but it's not just young people in healthcare who have had it rough; young people across the board, already burdened by the stress of the climate crisis, are now facing difficulty planning for their future due to economic uncertainty and struggling simply survive day to day. It's no wonder the lines at food pantries and soup kitchens have increased dramatically since the spring of 2020.

The studies looking at the pandemic's psychological toll on young people and children have been quite alarming. Depression, suicide attempts, and risky behaviors are on the rise among teenagers and young adults. Martine Duclos, head of the sports-medicine clinic at Clermont-Ferrand University Hospital in central France, conducted a study of 90 grade-school students aged seven and eight, and according to her study the lockdown period was associated with impaired physical and cognitive development. She found that children who had been involved in sports with no prior health or weight problems typically gained 10 to 20 lbs. during the lockdown due to a lack of physical activity. Likewise, cognitive skills were reported to have dropped by about 40%.

The solid ground we thought we could stand on is shaking beneath our feet, giving way to a fertile breeding ground for overly simplistic attribution of blame where it doesn't belong. In the US, a mob of thousands stormed the Capitol building in Washington, D.C. to attempt to

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keep Congress from certifying Joe Biden's election victory. They were galvanized by Trump-fueled conspiracies undermining the legitimacy of mail-in ballots, a measure implemented in light of the pandemic. By all accounts at the time of writing, it doesn't appear that the US is out of the woods yet, with so many Republican elected officials and Trump supporters continuing to challenge the results of the election.

It's a little easier to understand Trump's behavior when observing primates. Among many primate species, alpha males only remain alphas till they show signs of weakness. In a way, Trump's behavior, insisting he's the winner against even the hardest of evidence, is biologically ingrained in all of us. But as the great American-Dutch primatologist Frans de Waal points out, it's typically not enough simply to appear to be an alpha male. Most alphas are large and strong, but some can be rather physically less impressive, and many times strong females are best suited to assume the role of the alpha. How do they remain in power? They successfully keep the peace among the group and provide for the well-being of even its weakest members. Like in politics, the alpha males and females need to be astute strategists who know how to build coalitions. If all the alphas do is strut about and enforce dominance through terror, they'll soon enough lack loyalty and be challenged at the first sign of weakness.

During the pandemic, people made daily demonstrations of appreciation for society's newest superheroes, who in fact have been superheroes forever, healthcare workers. Across the world, people would go to their balconies and into their yards at a set time every day to applaud health-

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care workers as a sign of gratitude. In France, it was every night at 8 p.m., and it lasted for several weeks in the early days of the pandemic. When we see doctors and aids so committed to our healthcare systems and going to every length to provide the best care possible despite harrowing circumstances, it offers us a major sign of hope. Why is it then that we take this for granted in normal circumstances? It's only now that we're aware of just how critical they are, not only to our health but to the basic functioning of society. It's a good sign, but the next step is to go from appreciation to action, and it's a big step to take.

There's a quantity-over-quality culture that has taken root in the medical field, and even prior to the pandemic the pitfalls of such a culture had been coming home to roost. Not only does the effectiveness of patient care diminish with the quantity-over-quality approach, but healthcare professionals themselves suffer perhaps more than anyone in such an environment. The field is in need of structural changes with regard to hospital organization, namely with administrators giving doctors more freedoms in how they want to treat patients. Put another way, care professionals are in need of care themselves. This requires a change in attitude, meaning more empathy and kindness, as well as structural changes, meaning more delegation, more teamwork, and more preventive medicine. This is how we can show healthcare workers true appreciation.

It's telling that the care ethics starting to gain traction in the science and healthcare fields were developed by feminists in the 1980s. Whether in the family or at work, women are typically expected to take on the primary role as carer and nurturer, and as healthcare workers experi-

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enced prior to the pandemic, it's largely a thankless job. And let's face it, even during the pandemic, many of the professions that kept society running in our greatest moment of need were jobs in which women are over-whelmingly represented, *i.e.* nurses, caretakers, babysit-ters, cashiers, and cleaners. These are called pink-collar jobs. They're 75% to 95% female and they're grossly underpaid.

Looking at society through the lens of caring for those who care for us can help us reshape and re-engineer society in a way that better accounts for our vulnerability. Mammals are born more vulnerable than other species because there is a longer incubation period following birth in which newborns rely on others for food and protection. We humans may be born the most vulnerable of all mammal species because our incubation period lasts longer than any other, and once we're adults every facet of our lives is dependent on an immense network of cooperation across the species. As infants we need love and attention from others in order to survive. Who would then be so delusional as to think we didn't need the same all throughout life? Who would then be so delusional as to think we can lead satisfying lives in brute competition with our fellow humans, relying on our worst urges to get ahead and trample everyone else underfoot?

It's only through cooperation that we can end the Covid-19 pandemic. Unless we come up with a plan to distribute vaccines throughout the world, we will all continue to pay a heavy price. Pockets of contagion will linger and come back to strike us like a boomerang. All it takes is another deadly mutation of the virus and all the progress and the sacrifices we've made will have been

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in vain. As it stands now, children are relatively immune to the worst side effects of the virus, but by letting the virus continue to spread in vast populations across the world, we're giving the virus an opportunity to mutate into something that could threaten the health of children.

To keep ourselves safe from future pandemics, part of that cooperation effort will have to extend to cooperation with the planet, which means preserving biodiversity—*i.e.* all the different forms of life on Earth—and the environment—*i.e.* the ozone, the quality of the air, etc. When we look at pictures of the planet from outer space, we understand that we are all afloat on the same ship. And what a frail vessel it is. In the same way that nations draft declarations of independence, we as a species should draft a declaration of interdependence, to refer to when drafting regulations and laws to protect our species by protecting the planet and vice versa, and this should apply to us both individually and collectively as societies.

The military acronym VUCA, for Volatility, Uncertainty, Complexity, and Ambiguity, gets used when discussing the unpredictable nature of our complex, multilateral world. I want to replace it with another acronym, VICCCCCCCA, for Vulnerability, Interdependence, Care, Compassion, Citizenship, Cooperation, Creativity, Constructive Criticism, Communication, and Awareness. It goes farther than simply referring to the unpredictability of our world; it spells out a new universal ethics we desperately need in a complex and multilateral world.

Some of the elements of VICCCCCCCA I've already discussed; others I will address later on. For now, I'd like to focus on compassion, which too often we think about

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as doing things for others. I encourage you to think of compassion as consciousness of others' emotions.

Fritzi Horstman, known for being a Grammy-award-winning TV producer and writer, had a far less chummy life as a child and adolescent. She suffered a great deal of trauma in childhood and acted out on that trauma as she grew up, landing herself in juvenile detention centers as a young woman. After she figured herself out and became successful, she started a foundation called the Compassion Prison Project that works with incarcerated persons and people in reentry-assistance programs to help heal the childhood trauma they have suffered. Her organization also works outside the prison walls lobbying to overhaul the isolating and dehumanizing aspects of the prison system.

She sums up her approach in a short film she made called *Step Inside the Circle* shot in a California maximum-security prison. In the prison yard, she has 235 incarcerated men form a large circle she calls a compassion trauma circle. Standing in the middle, she asks an introductory question to all of them. "Is everyone ready to face their past?" "Yes," they respond in unison. In the exercise, she reads out a series of statements, and the incarcerated persons are asked to step closer into the circle if the statement applies to them. The first statement goes, "While you were growing up, during your first 18 years of life, if a parent or other adult in the household often or very often would swear at you, insult you, put you down, or humiliate you, step inside the circle." Everyone takes a step in. She continues, "If a parent or other adult in the household often or very often pushed, grabbed, slapped, or threw something at you, step inside

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the circle." Again, everyone takes a step in. "If a parent or adult hit you so hard it left marks or injured you, step inside the circle." "If you often felt that no one in your family loved you or thought you were important, have often thought that no one in your family liked you or considered you special, step inside the circle." By the final statement she reads out, everyone in the circle is standing tightly together elbow to elbow.

It's proof of what we perhaps already knew without conscious awareness, that most incarcerated persons are victims of childhood trauma and many of them suffer from mental illness. In the second half of the video, the inmates break off into small groups to discuss their pasts. "I'm a traumatized child raised by a traumatized child," says one man. Another shares, "My mother didn't want me. She tried to hide her pregnancy and she tried to flush me down the toilet… I've always asked myself, 'What is wrong with *me*?'" When asked about how they experienced the exercise, one man says, "Our traumas kept us separated… We were all standing apart. But once we began to acknowledge our traumas publicly, it brought us all closer together." Another man says, "In prison, you're not supposed to show your weaknesses. But to want to do that, to walk in that circle like that and take each step forward, that was a reminder to ourselves that we still have a humanity and we're worthy of being loved."

Because childhood is such a crucial time for developing compassion, Canadian educator Mary Gordon has created a program called Roots of Empathy active in more than ten countries that aims to hone children's abilities for observation of and empathy for others. In the program, a volunteer mother and her infant child visit a participating

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classroom once every three weeks, and students are asked to observe changes in the baby's development over time, try to guess at what the baby is feeling, and evaluate what's happening in the mother-child relationship. The students are confronted with the vulnerability of the child, which subconsciously gets them to confront and accept their own vulnerability. From there, the program tries to get students to see their fellow classmates as equally vulnerable beings as themselves. Participating classrooms have reported significant drops in bullying, harassment, and violence as well as an increase in student self-esteem. Mary Gordon's book *Roots of Empathy: Changing the World, Child by Child* [viii] is a call to teachers and parents alike not to give up on underprivileged children who grow up seeing violence every day in their environment, reminding us that they too have the capacity for empathy, only first they need compassion shown to them to set the example.

In Mexico, Gilda Henriquez Darlas runs the Fundación y Centro de Investigación en Desarrollo Ético y Discernimiento (Foundation and Center for Research in Ethical Development and Discernment), which likewise works to foster empathy and respect among both students and teachers using an approach called the *Universal* Education *Model for Ethical* Development. The program begins in early-childhood education and lasts three years in which students participate in a range of activities and games designed to help them learn how interdependent they are and how their individual success depends on their compassion for other students. In one exercise, the children are all asked to draw an everyday object, say a glass bottle, from memory. Then they all show their drawings

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to one another to see how different each bottle is from another. This operates as a metaphor for how children should see differences between themselves, that in diversity there's unity. Though one bottle may look different from another, it's still a bottle, no better and no worse than the others. In the third and final year, the program culminates with a classroom-wide game in which you can only win if everyone wins.

Programs like these are ways of helping develop awareness and mindfulness. Mindfulness is often invoked relating to meditation, something science has shown heightens brain activity in areas key to meta-awareness such as memory consolidation, emotion regulation, etc., which are all associated with well-being. French Buddhist monk (with a PhD in genetics) Mathieu Ricard has published a series of books, many of which have been translated into other languages, that discuss the importance of meditation as a means to bringing about an absence of conflict. Put another way, meditation is a means to realizing others' concerns are our concerns too, though they may at first seem opposed to our own. That's not to say, as he notes, that too much empathy doesn't destroy empathy. He says that when naturally empathetic people get overloaded with accounts of traumatic experiences, they tend to experience the trauma themselves. We see this happen with healthcare professionals and caretakers sometimes. While many go into the healthcare field out of compassion for others, they find their capacity for empathy quickly overtaxed from sustained close proximity to trauma and death in the workplace.

While it's not possible for society as a whole to meditate in order to gain empathy and compassion, we can create

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compassionate public policy and fashion our economy, workplaces, schools, etc., in a way that better respects the traumas and needs of others. This is how we can embrace our common vulnerability and equip ourselves to face the challenges of this century, which are greater and are more pressing than any humanity's ever known.

But in order to do that, we need to recognize that everyone is equal.

What if at last we recognized that men and women are equal?

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What If We Recognized that Men and Women are Equal?

Covid-19, while a silent and invisible assailant, wreaked havoc on our lives in ways that were very visible and mobilized a global response the likes of which the world has never seen. Stay-at-home orders were implemented to halt the Covid-19 pandemic, but these exacerbated another age-old pandemic that has traumatized countless generations of families irrespective of race and nationality: the pandemic of violence against women. The UN uses the term "shadow pandemic" for the spikes in all forms of violence against women since the outbreak of Covid-19, but the term could have well applied even before the pandemic. The UN's gender-equality entity UN Women is unequivocal about the seriousness of the issue, stating, "One in three women experience physical or sexual violence mostly by an intimate partner. Violence against women is a human-rights violation."[ix] While hospitals around the world were overburdened in their attempts to keep up with ever-rising infection rates, so too were

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shelters and aid centers for battered women overwhelmed with spikes in domestic violence. The cause? Lockdown.

Lockdown measures, necessary for stemming the spread of the deadly virus, amplified occurrences of violence against women. The primary front of the shadow pandemic was in the home. Not only were partners forced to isolate in close quarters for weeks on end, but mounting financial worries in the pandemic-devasted economy turned already tense living situations on high heat. The second front came in the form of deserted streets and public areas such that when women did go out to do necessary shopping or other errands, they were easy prey for men to assault with no eyewitnesses around. Like the viral pandemic, the shadow pandemic was not isolated to one region or country. It was reported the world over.

In response to the early reporting, UN Women launched a public-awareness campaign, recruiting the likes of Kate Winslet to raise the alarm. The campaign focused on the domestic-abuse side of the issue. "In one weekend, calls to domestic-abuse helplines in the UK went up by 65%," she says in the campaign's minute-long public-service announcement. The message is clear. Women are in danger, and it's on us to help them. It's on us to detect violence against women in our communities and among those close to us. The defense strategy is simple: get educated on violence against women (the UN Women website is designed for just that purpose[x]), know your local aid services and helplines (done in a simple internet search), and call friends and loved ones to ask how they're doing and if everything is OK. If they tell you directly or, with your education on domestic violence, you sense that they are in danger, take action by getting in touch with

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your local helpline and finding out what can be done. It's no overstatement to say that intervening as early as possible could be the difference between life and death.

The spike in violence against women during lockdown, and indeed the high pre-pandemic figures on violence from intimate partners, points to a deeper problem underlying our society. Call it toxic masculinity, call it patriarchy, call it what you will, the fact is that men are apt to use violence, intimidation, and coercion to get what they feel they deserve. It's one of the darkest stains on our history that women have been so discounted and oppressed over the centuries.

And sadly, active oppression of women is not yet in the rearview mirror of history (for more on the early history of male chauvinism, at least as it pertains to ancient China, check out this great article[xi]). Efforts in our era to call into question male dominance have unsurprisingly sparked violent backlash. Even as early as 1989, a man in Montreal carried out an antifeminist shooting of 14 women at a university before turning the gun on himself. The suicide letter in his pocket outlined his motivations for the attack, saying that feminists were to blame for his sexual frustration and needed to be stopped from seeking social changes that would afford them too much control in society.

What in 1989 was a fairly rare attack on women has become all too common in the age of social media. Behind the cover of online anonymity, antifeminist groups glorify the kind of misogyny found in the Montreal killer's sentiments and function as an online army trolling women who they feel need to be "put in their place" by trolling

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them, often times with threats of rape and murder. Similar antifeminist massacres are in the unfortunate process of settling into the media landscape as online communities of the self-identifying involuntarily celibate men, or "incels," blame women, feminists specifically, for their inability to find a sexual partner. These men would look to terrorist groups like the Islamic State and Al Qaeda as models to follow for their open oppression of women's rights, writing into law women's reduction to the state of chattel to their husbands or other men in their family. For the liberal-minded in the West who feel a sense of superiority to the Middle East for the open patriarchal domination rife in many communities there, equally venomous disregard for women's rights has its seeds planted in our own backyard, and it's not always behind closed doors.

Social commentators talk about "masculinity in crisis." What this appears to mean is that, while Islamic extremist groups and the West's ethno-nationalist groups are on the rise, both glorifying a violent and oppressive fantasy of masculinity, so too are the numbers of men who are willing to state frankly that real men are feminists and that society is strong when women are strong. For all the dark clouds brewing on our horizon, let's not forget that there are many signs of hope, with countless examples of women and men working together to change received gender roles for a more equal, enjoyable coexistence.

But we still have a long way to go.

To start with, it's unsettling how prevalent open oppression of women still is in society. Gender inequality is both a systemic and political issue—meaning visible in the workplace, in the media, and in politics—and must be dealt with as such. Let's just start with politics. Despite

nations around the world setting quotas for female leaders in government, men still hold the lion's share of positions in office. France has only one female minister, and, go figure, it's the Minister of the Armed Forces, Florence Parly. In regional- and municipal-government elections, the law requires equal numbers of male and female candidates on the ballot, but only four out of France's 20 regions are governed by women and only 12 out of our 42 major cities have female mayors. In the world of business, many countries have passed measures to improve gender parity on boards of directors and corporate-governance committees, but despite this the glass ceiling has remained firmly in place. In the UK in 2021, only 6.3% of British corporations are run by female CEOs, a marginal increase from 6.2% in 2020 and 6% in 2019[xii]. The arts typically have a better record on gender equality than others, but there's still a lingering imbalance. Take museums for example. Women make up the majority of museum employees, and in recent years we've seen a flurry of female appointees to chief curator positions in major museums, but the gender pay gap persists. According to the 2017 National Museum Salary Survey in the US, male chief curators made a median salary that was $15,000 higher than their female counterparts.[xiii] While more and more exhibitions celebrating women are taking up exhibition spaces, these are a drop in the bucket of male prevalence in entertainment and the arts at large. The world's top orchestras feature very few female conductors, the number of female film directors working on the top 100 grossing Hollywood films hovers around 12%[xiv], and in the music industry record companies have been found to make more substantial investments in male artists than

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female.[xv] Lastly, looking at universities, only 30% of U.S. universities are presided over by women, a reflection of the meager 31% of women in full-time faculty positions.

Will Covid-19 force us to become more aware of glaring inequalities? I certainly hope so considering how critical women have proven to be in keeping society functioning during the pandemic.

In the same way that the pandemic has heightened geopolitical and economic tensions already strained by climate change, so too has it set back a gender-parity landscape that had made major strides in the wake of the #metoo movement. In case you were living under a rock, the #metoo movement was a global indictment on the pervasiveness of abuse, often sexual, perpetrated by males in positions of power. It began in the Twitterverse, empowering sexually assaulted people to break their silence online and see a massive community of support and solidarity build around them within seconds through replies and likes. It soon found its way off Twitter into the world, becoming a social movement that swept through our lives almost like a pandemic, but the viral pandemic came just in time to set the movement back considerably. We cannot simply stand by and let this happen.

While in practice feminism seeks an end to violence against women, it inscribes itself within the larger effort to counter violence and abuse of power in all its forms. After all, what's the difference between the violence that feminism seeks to redress and the violence of, say, genocide? They're both instances of someone in power dehumanizing other persons, obliterating their humanity and reducing them to dirt so as to justify their abuse with impunity. At its base, feminism is a humanist endeavor

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and in that regard a universal endeavor, something to be upheld by all men and women who are committed to ending violence and know that gender equality means a better quality of life for both sides.

How can we win back the ground that the pandemic took away from us?

On its own, solidarity among oppressed peoples isn't enough to overcome those who oppress them. Once again, it comes down to education, both inside and outside of the classroom, before and after graduation, and in every instance of professional training, starting with the most violent professions, *i.e.* police and military. As a society, our instincts are so masculine that it took multiple murders of unarmed black people and the ensuing Black Lives Matter movement to spark widespread debate about fairer policing practices. Without mass movements like these, the system will remain in the hands of those who have traditionally held power. Their power is lent to them by the culture and is not written in stone.

Nature has programmed all living things to maximize chances of survival for both themselves and their offspring. Among mammals, this manifests in a number of different ways. Division of labor in animal groups tends to run along the lines of females caring for the young while males hunt and protect. There are, however, notable exceptions to this traditional model, such as societies where males are the nurturers, females pool resources to provide food for the group, and many others.

Ideally, humans try to order their societies in such a way that economic and political systems ensure the survival and well-being of the greatest number of people, and most especially our children. Nurseries, pre-schools,

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schools, and pediatric healthcare are all sophisticated ways of ensuring the survival of the youngest members of our species. Women are overrepresented in childcare and childhood-education professions, but it's really in the home where women are typically unfairly saddled with the majority of childrearing responsibilities. Notwithstanding giving birth and breastfeeding when elected, the division of childrearing labor in heterosexual couples tends to overburden women. We've all seen it. Mothers are typically overinvested, partly out of a sense of fulfillment and satisfaction, partly just out of necessity because the father is underinvested. Thankfully, more and more couples are consciously seeking a better balance, but we continue to see traditional gender roles reproduced in society at large. While a century of feminist outcry has seemingly buried very traditional roles in the past once and for all, many still find it difficult to achieve perfect parity.

The year of our first experience of mass lockdown, 2020, just so happened to be the centennial year of the 19th Amendment to the U.S. Constitution that gave American women the right to vote. It makes the reversion back to the gender status quo under lockdown all the grimmer. Working women much more so than working men made the sacrifices necessary to look after infants, children, and teenagers, all while dealing with the stress of the pandemic and worrying about the well-being of their parents. A London School of Economics report showed women were more likely to be left with childcare duties, homeschooling, and house chores than men.[xvi] Another survey by the Boston Consulting Group calculated women on average spent 15 more hours than men on parental tasks during lockdown.[xvii] In cases where there was one office or work-

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space in the home or apartment, it was typically the man of the house who got to use it while the woman had to work from the living room or other common areas. In situations where women were raising children alone, to quote Julia Jäkel, head of German publishing house Gruner + Jahr, "home office mainly means home and little office."[xviii] And this isn't without a toll on mental health, as reported by the World Bank and others. In a study of Croatian women, 67% reported increased stress compared to 55% of men, specifically concerning the family's economic stability. "Women said they feel like they are fighting this pandemic on multiple fronts by supporting the children's education, taking care of household chores, and contributing to the family's economic well-being, and they feel like they are failing at all of it."[xix] And that's just looking at women who were able to keep their jobs. Pink-collar occupations in which women are disproportionately represented in low-wage, in-person jobs meant that most women couldn't transition to remote work. In the US between March and April 2020, women with college degrees saw their employment rate drop 15 percentage points compared to 11 points for men.[xx]

We've established that the pandemic ratcheted up existing inequalities, but it also gave us an unexpected glimpse at our own hypocrisy. While on the one hand we came out in droves to applaud healthcare workers for preserving our health, on the other we ignored women, mothers, and pink-collar workers, who were doing just as much to preserve the health of the future generation.

Canada's Pay Equity Act was passed in 2018 but came fully into force during the pandemic, just in time for the economic-recovery effort. It targets the pink-collar

phenomenon in the hopes of reversing unequal pay in professions held by women. In that way, it's different from legislation seeking to ensure equal pay for equal work. This act goes further in ensuring equal pay for work of equal value. To understand the difference, the Canadian Human Rights Commission explains it this way: equal pay for equal work is like comparing apples to apples—two CEOs, one male, one female—whereas equal pay for work of equal value is a way to compare apple and oranges, "different, but equally nutritious."[xxi] It's important to be able to compare apples and oranges in this case because women tend to get relegated to positions that pay less, though they represent equal value to the employer. Employers will have three years to develop their own pay-equity plans, which will then be enforced by a Pay Equity Commissioner—who will of course be a woman!

It comes as no surprise to anyone that Canada is emerging as a leader in pay-equity initiatives, but what may surprise some is how much the sentiment has been mainstreamed in less-progressive governments like in the US and the UK. However, much like allowing hundreds of millions of people go without vaccines, it's not enough to see pockets of progress in a sea of inertia on the issue of pay equity, and, furthermore, legislation to ensure pay equity has to go hand in hand with addressing the larger systemic issues that give rise to pay inequality, which are the same sources for most of the major challenges we face today in our world. It only makes sense to trace the problem back to its source. Just like in the body's immune system, it will take a holistic approach to fully heal our diseased society.

The UN's 17 Sustainable Development Goals (SDGs) are that holistic approach, addressing "the global chal-

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lenges we face, including poverty, inequality, climate change, environmental degradation, peace and justice."[xxii] Looking at the fifth SDG goal, which is aimed at "empowering women and girls and ensuring their equal rights," we see that it's inseparable from the other sixteen, because female empowerment is tied up with all the other issues: world hunger, poverty, health, and quality education, to only name a few.

The UK-based NGO Women's Budget Group has developed a tool called gender-responsive budgeting, gender budgeting for short, that evaluates public spending based on how it impacts gender equality, identifying where women and girls are most and least affected in government spending. Take, for example, increased housing subsidies for the least well-off. While gender-neutral in theory, this policy benefits women directly because women account for around 85% of single-parent households, and a third of those women live below the poverty line. In traditional budgeting, this subsidy would fall under a government's housing budget, but in gender budgeting, it can also be ear-marked in the women-and-equalities budget. Italy has been one of the fastest-progressing EU countries in terms of gender equality, and this is in part due to gender-budgeting tools the country adopted back in 2016. All public expenditures in Italy get "tagged" into one of three categories: neutral, such as debt expenditures that have no impact on gender equality; sensitive, such as expenditures on education, which has a different impact on women than on men; and targeted spending to reduce gender inequality such as investing in women's entrepreneurship funds.[xxiii] In short, it's adopting a gender-equality perspective in what we tend to see as the most wearisome function

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of government, budgeting. What gender budgeting shows us is that, though a perfunctory part of governance, allocation of revenue is the most fundamental way governments can impact inclusivity and economic growth.

Australia was the first country to adopt gender budgeting back in 1984. A host of gender-mainstreaming organizations have cropped up in the ensuing years, the most well-known of which being the Women's Budget Group. It was started in 1989, and by 1995 received the endorsement of UN Women and by 2009 the Council of Europe. According to a 2016 survey by the Organization for Economic Co-operation and Development (OECD), "almost half of OECD countries that responded (15 out of 34 members) report that they have introduced (Austria, Belgium, Finland, Iceland, Japan, Korea, Japan, Mexico, Netherlands, Norway, Spain, Sweden), plan to introduce (Italy), or are actively considering the introduction (Turkey, Czech Republic) of gender budgeting."[xxiv] Iceland is the stand-alone gender-equality champion in Europe. After all, their current prime minister is a woman, Katrín Jakobsdóttir. As of 2019, the female percentage of the total labor force in Iceland is 47.2%[xxv], women are better represented in Icelandic government than in any other country, and parents get equal parental leave after the birth of a child. Every year, the World Economic Forum rates Iceland among the top countries in the world for gender parity.

What's interesting is that countries that have adopted gender budgeting are seeing overall inequality decline, just not gender inequality. Indeed, the two have long gone hand in hand.

In ancient Greece, the influential Athenian Aspasia rivaled Socrates for brains and was one of the first femi-

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nists in the Western tradition. She had an influence in all spheres of public life, including in the military. In the 18th century, French feminist hero Olympe de Gouges fought to make feminism part of the Enlightenment mood sweeping Europe at the time, challenging the patriarchy and gender inequalities, and for this she was eventually guillotined despite championing the Enlightenment. Her 1791 pamphlet "Declaration of the Rights of Woman and of the Female Citizen" is her indelible mark on history, but she was likewise a fervent abolitionist and spoke out against empirical dictatorship. Both of these women rose to the occasion to put gender equality on the democratic agenda. Had their voices only been taken more seriously in their times, we might have inherited a more equal society, one better equipped to understand our vulnerability, interdependency, and the fact that being compassionate towards ourselves means being compassionate toward our community and our planet. What if there were no better time than now to start building that equal, inclusive society?

The countries that have had the best record fighting the pandemic have two things in common, empathy and long-term vision. Perhaps unsurprisingly, most of these countries have been led by women. At the time of writing, Taiwan, New Zealand, Iceland, Lithuania, and Estonia all fall in the top 10 list of countries with the fewest deaths per capita.

Taiwan's example is all the more striking because its digital coordination effort was led by the country's first transgender minister, Audrey Tang, who emerged on the political scene in 2014 during the country's Sunflower Student Movement.

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Tang spoke at the Techsauce Virtual Summit 2020 to break down the government's fast, fair, and fun strategy for mitigating the virus.[xxvi] The Taiwanese government's response to Covid-19 was indeed fast, perhaps the fastest of any country. As soon as warnings of an emerging virus in Wuhan appeared on the government's civil-society discussion forum PTT, it immediately began limiting flights from mainland China. Fun refers to what Tang calls the "humor over rumor" strategy to counteract fake news. When misinformation begins to trend on Taiwanese social media, the government has a goal of responding within 20 minutes with a humorous counter-message. The emphasis on humor is not only to lighten things up a bit but also to get the information to travel faster. For example, when people began panic-buying toilet paper due to a rumor that it was being taken off shelves to be turned into face masks, the country's premier Su Tseng-chang released an internet cartoon of him wiggling his bottom beneath the slogan, "We only have one pair of buttocks." It immediately went viral—in the figural sense. In another example, following reporting that boys were refusing to wear school-issued pink masks because they didn't want to get bullied, the country's all-male Covid-response team held a press conference wearing pink masks, saying, "It's fine for a man to wear pink!"[xxvii] Fair refers to efforts to make sure no demographic in society is disproportionately affected by the pandemic. For example, everyone had access to masks because they could be bought with public health insurance.

In New Zealand's 2017 prime-minister elections, no one thought Jacinda Ardern had a chance, but since taking office she's become an international celebrity and won

re-election in 2020 by a landslide, in part thanks to her expert crisis management. Covid-19 was far from the only disaster she's had to face down in her tenure. What one hears resoundingly about her appeal and leadership style is first and foremost her focus on empathy and compassion. "She's very good at reading public mood and putting out unifying messages," says one of her political opponents.[xxviii]

What makes these female leaders and their counterparts in other countries particularly apt to rise to the occasion is not their "nature," but their experience. If more leaders had their experience in compassionate politics, it's doubtful there would ever have been the *Gilets Jaunes* ("Yellow Vests") movement in France or the drift toward authoritarianism that we're currently seeing. Compassionate politics means treating the least well-off with dignity.

In the digital era, it's now easier than ever for leaders to have real-time interface with those they serve. Leaders can gage the needs of their constituents and govern in a way that shows them respect and compassion.

What if we all showed respect to one another?

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What If We All Showed Respect to One Another?

The pandemic has held up a magnifying glass to not only gender inequalities but inequalities of all kinds, starting with economic inequalities. Another term we've had to come to grips with in these pandemic times is "immunocompromised" or having underlying medical conditions that make you more vulnerable to severe illness from Covid-19. Obesity is one of these very risk factors. When you hear "obesity," you may think of people who eat too much fast food, but obesity is more complicated than that. Socioeconomic status is a major predictor for adult obesity. People who haven't gone beyond high-school education are much more likely to become obese as low-income communities lack nutritional literacy and access to affordable fruits and vegetables. In a way, we could say being poor makes you more vulnerable to severe illness from the virus, but that might be too hard for some to swallow. We'd like to think it's an individual's decision whether or not to eat fatty foods, but when public-service

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announcements telling people to eat balanced meals are followed by advertisements for harmful food products, we're sending mixed messages. We should mount a similar publicity campaign against harmful food products as we did against tobacco products, with disclaimers on packaging that warns consumers about a given product's harmfulness to health. After all, the obesity epidemic is no less serious.

The reason that this is hard to pull off is the Big Food industry, equipped with mighty legal-defense budgets and stout teams of lawyers to litigate against any law aimed at curbing unhealthy eating. In the US, nearly half of the adult population suffers from chronic diseases such as heart disease, cancer, and diabetes. These disease are preventable, meaning they can be avoided by eating well, being physically active, avoiding tobacco, not drinking too much alcohol, and getting regular health screenings.[xxix] Yet even the US CDC talks about poor nutrition as a "risk behavior" in the same way excessive alcohol use is a risk behavior,[xxx] putting the onus on the individual when in fact there's a larger systemic issue at play.

As hard as it may be to swallow the idea of a socioeconomic status as a predicter for severe illness from Covid-19, there's another harsh reality that's even harder to swallow: race is a factor as well. Racial disparities were well documented throughout the pandemic, with the Infectious Disease Society of America reporting that all non-white racial groups except Native American saw "rates of incidence and mortality more than twice as high than for whites."[xxxi] Blacks in the US experienced the greatest burden from Covid-19, with an incidence rate of 1,626/100,000 people and a mortality rate of 244/100,000

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people, the highest of any demographic. Many factors contributed to these racial disparities, principal among them pre-existing health conditions due to lack of access to healthcare as well as the fact that, in the CDC's words, "racial and ethnic minorities are disproportionately represented among essential workers and industries."[xxxii] Unless you want to consider being an essential worker an individual risk behavior, it's clear that the problem is systemic.

When I talk about respecting one another, I'm not talking about the "individual behaviors" of treating others with dignity, empathy, and compassion, though that is important. I'm also talking about political systems that intrinsically leave huge swaths of the population more vulnerable to disease, if not downright deny their humanity altogether.

While slavery still exists in various forms throughout the world, we can say civil society has progressed considerably over the centuries. From Antiquity until the 19th century, slavery was a socially acceptable and common practice. Despite correcting these systems of outright oppression, economic oppression still stains our society, and the symbolic violence of economic oppression is hardly less gruesome than the physical violence of slavery. And let's be honest, the violence of economic oppression isn't always symbolic either; it's often physical as well, except it's no longer a so-called slave master cracking a whip but deplorable conditions at work combined with dangerous housing in dangerous communities. And the use of excessive force by police is an integral part of the danger to that community. It comes as no surprise that the latest CDC data shows life expectancy for whites at 77.8 years compared to a meager 72 years for blacks.

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Systems of oppression from the past leave deep wounds in a society. The US remains the most fervent breeding ground for civil-rights movements protesting the harsh legacy of slavery because being the descendant of slaves is still a key determining factor for quality of life in the US. As a young country, the US's prosperity was largely built on a system of slave exploitation without which the US might never have become the major world power that it is today, making it all the more ironic therefore that black Americans won't enjoy the same privileges and opportunities as white Americans for several generations more, and that's being optimistic. The undercurrent of racial bigotry persistent in American society, as elsewhere, flies in the face of the fact that most people don't consider themselves racist. It speaks volumes that the black civil-rights movement of our time has to march in defense of the most basic and inarguable of propositions, *i.e.* that Black Lives Matter.

Nonetheless, there is hope. As Black Lives Matter (BLM) co-founder Opal Tometi drew attention to in a *New Yorker* interview, "We see these [BLM] rallies in solidarity emerging all across the globe… People are really trying to show up in this moment for black people… [T]his pandemic was a pause, and they were able to think about what would justice look like, and what is actually going on, and they have been able to reflect on what is going on."[xxxiii] That is the order of the day, extending to all people the common decency we wouldn't hesitate to show to our nearest neighbor.

Social inequalities do exist in nature. Hierarchies exist among gorillas, but in other great apes species such as bonobos we see more egalitarianism and cooperation.

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As Yuval Noah Harari illustrates in best seller *Sapiens*,[xxxiv] social inequalities began appearing in human communities in the Mesolithic era when we first began farming, whereby certain people could stockpile food and animals and thereby create the earliest form of wealth. The more food and livestock you owed, the more powerful you became. Once the door to wealth inequality was opened, it became possible to found empires that would deepen wealth inequality for centuries. The only people who were spared were those who managed to continue leading a hunter-gatherer lifestyle and to a lesser extent those who lived in democracies. Authors like French economist Thomas Piketty show that, with the way global capitalism is currently structured, it's impossible to reverse social inequality.[xxxv] He recommends a global wealth tax on corporations, fortunes, and inheritance as well as keeping a global registry of financial assets to keep the ultra-wealthy from hiding their fortunes in tax havens.

A respectful society is not the same as a society where people behave respectfully. A respectful society is one that all people believe in. Religions are respectful in that all believers are truly equal in the eyes of their absolute deity or deities. We all believe in the convention of money, which curiously derives its value from the fact that we believe it has value. We believe in the nation we come from even though the only thing really defining a given nation is a set of laws, as often the disparate communities federated within that nation have little to nothing in common.

The things we collectively believe in have the power to change the world because when we believe in them they develop political power. But they start out as ideas.

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Early-20th century lesbian social activist Eglantyne Jebb was a champion of children's rights, inspired in part by the novels of Charles Dickens and his depictions of childhood poverty in London. She would go on to draft what the UN eventually adopted as the Geneva Declaration of the Rights of the Child. Similarly, Emile Zola's novels *The Beast Within* and *Germinal* helped to launch the workers' rights movements of the turn of the 20th century. Throughout history, art can show us the things we see without seeing and make us believe in them.

Childhood is when our belief systems are formed.

What if every child could have the childhood it deserved?

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What If Every Child
Could Have the Childhood
It Deserve?

As a species, we're biologically programmed to protect our young. It starts during pregnancy when mother and child are one. Later on during feeding, the bond grows even stronger. And let's not forget the fact that our species undergoes the longest period of incubation and development in the entire animal kingdom. In civil society, it takes 18 years for a child to reach independent adulthood.

In those 18 years, we learn how to be independent from the example of those around us. In tribal societies, it's the small tribal community that imparts wisdom onto its sons and daughters. In civil societies, it's the education system. Ancient Egypt established formal education as early as the first millennium B.C.E. Teaching methods were a rather brutal by our standards, with teachers encouraged to hit students when they failed to answer questions correctly. This is perhaps where the idea of "teaching someone a lesson" comes from, as the Egyptian hiero-

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glyph for "teach" can also be translated as "beat with the right hand." Teachers could also hit students with sticks. Discipline ruled the day.

For much of history, physical violence was part and parcel of the education process. France outlawed corporal punishment in schools in 1880, but the practice remained common until longer after. Canada didn't outlaw it in schools until 2004, and in Japan it was outlawed in 1947 but high incidence numbers have been reported as recently as 2012. In most countries throughout the world, the US, the UK, Russia, Italy, and India to name only a few, parents and legal guardians still have the right to beat their children. The first country to outlaw all forms of corporal punishment of children was Sweden in 1979, starting a trend that most European countries would follow in the ensuing 40 years, with France joining those ranks only in 2019.

How can we educate without recourse to physical violence? Clearly it's an age-old question, but progress was only made on the issue in more modern history. The first advances came in the late 18th and early 19th centuries with Johann Heinrich Pestalozzi in Switzerland and Dr. Jean Itard and Marie Pape-Carpantier in France. After them, a whole generation of innovative educators came to the fore in the late 19th century, fine-tuning what the pioneers of progressive education had started. Some of their names you may be familiar with: Anton Makarenko in Russia, Janusz Korczak in Poland, and Maria Montessori in Italy, again to name only a few. Perhaps most surprising is how, in each one of their cases, they developed their own methods of progressive, non-violent education while working with the most troubled and hopeless youths

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one could be confronted with in their time. Pestalozzi, Pape-Carpantier, and Korczak all worked with orphans. Korczak even denied himself sanctuary during World War II to stay with his orphans when they were sent to the Treblinka extermination camp, where he eventually died. Itard worked with deaf children, and François Truffaut gives a stellar performance playing Itard in the film *The Wild Child*, which tells the story behind Itard's most celebrated case educating a young deaf child by the name of Victor de l'Aveyron. Makarenko worked with street children and juvenile delinquents orphaned by the Russian Revolution. His orphanages were governed by the children themselves. Montessori started out working with developmentally disabled children in Rome.

If you ask me, it's no coincidence that many of these great education reformers were trained in medicine. Where others saw hopeless cases or ungovernable children, they saw patients in need of treatment, and as every medical professional knows, the first step in treatment is listening to patients talk about their suffering to try to understand it.

While she never worked in children's education, Eglantyne Jebb was a British children's-rights activists in the same generation as Montessori. In 1924, the League of Nations, precursor to the United Nations, adopted Jebb's *Declaration of the Rights of the Child*. Like Pestalozzi, Makarenko, and Korczak, Jebb was first touched by the dire situations of children orphaned by war. She organized a fund, the Save the Children Fund, to raise money to aid children in enemy countries after World War I, the success of which prompted her to create an international movement for children that she would call the Interna-

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tional Save the Children Union. One of Jebb's greatest supporters was playwright George Bernard Shaw, who attended the volunteer meetings that would set it up. Addressing controversy over providing aid to children in enemy nations, Shaw said at one meeting, "I have no enemies under seven." His statement humorously captures the essence of Jebb's activism. Through the Save the Children union, she proved herself a natural in harnessing what was then the latest in communication technology, hiring an advertising executive to buy whole-page ads in newspapers featuring photographs of famished children and destitute mothers in countries in need.

Her Declaration of the Rights of the Child is short and sweet, but it cuts to the quick:

"The child must be given the means requisite for its normal development, both materially and spiritually.

"The child that is hungry must be fed; the child that is sick must be nursed; the child that is backward must be helped; the delinquent child must be reclaimed; and the orphan and the waif must be sheltered and succored.

"The Child must be the first to receive relief in times of distress.

"The child must be put in a position to earn a livelihood, and must be protected against every form of exploitation.

"The Child must be brought up in the consciousness that its talents must be devoted to the service of fellow men."

The League voted unanimously to adopt it. In France, the Minister of Public Education ordered it be posted in all schools. When in 1946 the UN created UNICEF co-founded by Polish epidemiologist Dr. Ludwik Rajchman, who studied under the same physician as Janusz

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Korczak, Julian Kramsztyk—it adapted Jebb's Declaration verbatim, and the name of the organization borrows from the name of Jebb's International Save the Children Union: UNICEF stands for United Nations International Children's Emergency Fund.

Korczak's approach to children's education likewise championed children's rights. Dr. Daniel Halpérin, Swiss pediatrician and president of the Janusz Korczak Association, explains, "That means having the right to a budget, the right to be taken seriously, to play, to make mistakes, to be supervised, to share an opinion, to have a secret, to tell a lie from time to time, so on. Some may laugh, but to me children need these things, and the fact they don't have them is the reason why the school system is having such a hard time." Korczak was extremely attuned to children's needs. He knew that in order to grow children needed to explore what was off-limits and feel empowered to do so. There's a lot of nuance in that approach, but Korczak was a master of it. For example, while society cannot tolerate violence, it's nonetheless important for children to get in touch with natural feelings of violence and anger and be able to express them. Korczak's solution was to provide an outlet for anger governed by basic rules of decency. If a classmate made you mad and you wanted to fight him, you could do so, but you had to tell him first, and after you told him you had to wait 24 hours before fighting him. If the fight did indeed take place after waiting, there would be a time limit set on it, and no shots below the belt were allowed. It was an attempt to trace a middle path between expression of emotions and controlling impulses, teaching the lesson that you don't have to act immediately on impulses because your first

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instinct isn't always your best; you have to force yourself to be as rational and disciplined as possible.

While the adoption of Jebb's Declaration by the League of Nations was momentous, not much progress has been made on the children's rights front since. Just before the pandemic broke out, UNICEF co-authored a report with the WHO and the medical journal *The Lancet* called "A Future for the World's Children." Its pages contain bitter truth heaped on bitter truth. "No country is doing enough," said WHO Director-General Dr. Tedros Adhanom Ghebreyesus. "The health of children everywhere is at risk." Why? The usual suspects. Environmental degradation, climate change, predatory marketing that makes children desire fatty foods, sugary drinks, alcohol, and tobacco. "An estimated 250 million children younger than 5 years old in low- and middle-income countries are at risk of not reaching their developmental potential," the report states. Dr. Helene Clark, former New Zealand Prime Minister and current co-chair of the UNICEF-WHO-Lancet commission, makes a call to action. "Governments have to get real," she says. "They have to get real about the commercial determinants and they have to get real about the impact of the climate crisis on people's health." The commercial determinants she mentions are economic incentives to get children hooked on harmful food products. The food companies rack up short-term profits while society pays the long-term costs. "There's now credible forecasts," Dr. Clark continues, "which say that, on existing trends, the full global cost of diabetes by 2030 will equate to 2.2.% of global GDP. That's a staggering figure."

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Furthermore, the report says, it's not enough to address what currently affects children's health. "Investment in sectors beyond health and education—such as housing, agriculture, energy, and transport—are needed to address the greatest threats to child health and well-being." There's even room to create a children's-rights equivalent of gender budgeting, as "children's issues should be considered in all policy issues" according to Dr. Tedros Adhanom. "It should be mainstream because it touches almost everything."[xxxvi]

The scathing report was published on 18 February 2020, the day I began to have hope for the world after the pandemic. Only here, once again, the pandemic has only compounded an already bleak situation. We have already seen the worrying figures about declines in children's cognitive, mental, and physical well-being during the pandemic, and nothing's to say these figures won't continue to plummet as, at the time of writing, variants of the virus are becoming increasingly dangerous for children and adolescents, who were largely immune to the alpha strain and early variants.

In addition to environmental and healthcare shortcomings, children face numerous other threats to their health and safety from the adults who are supposed to care for them. Many children have been victims of molestation by their spiritual leaders, namely in the Catholic and Protestant churches, whose leadership bodies only want to do the bare minimum to right past wrongs chiefly in the interest of placating an outraged public. What are they doing to prevent future abuse? The recent Sauvé Report in France estimated that French Catholic clergy have abused about 330,000 children in the past 70 years.[xxxvii]

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Children are also too often abused by their moral leaders. In the United States alone, 100,000 former boy scouts have reported instances of sexual abuse within the Boy Scouts of America. More internationally, we've learned about the many children, mostly girls, abused by their athletic coaches and training staff. Hundreds of teenage gymnasts training at the highest levels of the sport have reported mental and/or physical abuse going all the way back to the 1970s. In some instances, they were raped and threatened with murder. US gymnast Simone Biles sparked controversy when she withdrew from the Women's Team Final at the Tokyo Olympics 2020, saying she needed to "focus on [her] mental health."[xxxviii] Later in the summer she joined a host of other US women's gymnasts to testify before the US Senate on the FBI's mishandling of reports of abuse by former USA Gymnastics team doctor Larry Nassar. If it wasn't clear when she dropped out of the Team Final, it certainly became clear then how profound her and other gymnasts' mental-health burden really was. Nassar is just one despicable name in a long list of abusers in the sport: Viktor Klimenko, Renald Knysh, John Geddert, Bela and Marta Karolyi, Nicu Ceaucescu, the list goes on. These names come from gymnastics programs in the former Soviet Union, the US, and too many places in between where mistreatment, hitting, insults, humiliation, psychological abuse, panic, addictions, eating disorders, and depression were normalized as part of the process of "getting tough."

Unfortunately, gymnastics is not the only sport or extra-curricular to bear a dark history of abuse—I'm thinking namely of swimming and dance. The acts of abuse in themselves are contemptible on their own, but

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one can make the argument that they're committed by individual "bad apples." If that's the case, then the greatest evil is the decades-long cover-up by the governing bodies not only to preserve their names but also to avoid paying out damages to children who were abused. It fosters a culture of silence around abuse, which only emboldens the individual abusers, making the governing bodies complicit and equally responsible for the crimes.

Perhaps worst of all is abuse within the tight-knit community that's supposed to provide the very bedrock of a child's identity, the family. This sometimes takes the form of abuse by other children, as in siblings or cousins who engage in physical abuse or incest. Likewise, abuse between children in the form of bullying can be some of the most malicious of all abuse, and in the digital age in which online bullying is extremely hard to police, children are left to fend for themselves.

There are three stages to combatting child abuse. The first is perhaps all-too-simply stated: prevention. It requires training both children, parents, coaches, and those who work with children to understand what is and what is not abuse as well as the devastation abuse causes. The second line of defense is recognizing signs of abuse while it is on-going. That means that the adults in the child's life need to be equipped to read the tell-tale signs. When children have been threatened not to tell anyone, it's always their silence that speaks volumes. With proper training, adults can sniff out these signs and know where to turn when the time comes.

Ideally, this is all it would take to end child abuse, but unfortunately we don't live in an ideal world. There's a third line of defense equally as important, and that's being

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able to recognize the signs in adults who have suffered childhood trauma and treat them with compassion so as to not aggravate their already fragile state.

Once again, it can't come down to individual acts of kindness and empathy. We need systemic change in this regard. When a child drops out of school, it's never simply because that child doesn't like school, the same way obesity is never just about food.

In 1998, the CDC and health consortium Kaiser Permanente released a major study on what they term ACEs, or Adverse Childhood Experiences. It shifted the paradigm on how we understand the correlation between our emotional experiences[xxxix] as children and our health as adults, both mental and physical. Dr. Vincent Felitti is a physician specializing in childhood trauma and obesity who created the Department of Preventive Medicine at Kaiser Permanente San Diego, and he led the famous study. In it, 17,421 people received physical exams and answered a confidential questionnaire. What struck Dr. Felitti most was the power of social taboos and how vastly more prevalent ACEs are than acknowledged. Roughly one in five people in the study were victims of childhood sexual abuse, which is a risk factor for chronic depression, which itself is a risk factor for morbid obesity. That's what we mean when we say obesity is never just about food. Dr. Felitti even notes that many people used their obesity as a defense mechanism to make themselves invisible and thereby avoid future sexual abuse.[xl]

If you remember Fritzi Horstman's Step into the Circle exercise, part of her intervention also includes confidential surveys asking prisoners about their childhood traumatic experiences. Dr. Felitti's survey had participants

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respond to eight different kinds of ACEs, three having to do with personal abuse (recurrent physical abuse, recurrent emotional abuse, neglect, and sexual abuse) and four having to do with dysfunctional households (an alcoholic or drug-addicted person in the house, a mentally ill person in the house, the mother was treated violently, or the parents were divorced or separated). The participants were then monitored for five years to compare reported ACEs to pharmacy costs, doctor's visits, hospitalization, and death, from which an ACE score was calculated. An important finding in the study was that ACEs rarely occur in isolation, or put another way, "a child does not grow up with an alcoholic person or with domestic violence in an otherwise well-functioning household."[xli]

Of the adults surveyed, 61% reported having been exposed to at least one type of ACE, and nearly one in six had suffered four or more,[xlii] with women and minorities being at greater risk of suffering four or more ACEs. What's important to glean from the study is the evidence that unhealthy children become unhealthy adults. The CDC says "up to 1.9 million cases of heart disease and 21 million cases of depression could have been potentially avoided by preventing ACEs." In total, the social and health costs of ACEs are in the hundreds of billions of dollars annually, which far exceeds the overhead costs of the prevention clinic Dr. Felitti started and others like it. It's important to remember as well that victims of childhood abuse are more likely to abuse their own children, thus helping those who have suffered ACEs is a way of protecting future victims.

As Fritzi Horstman's initiative shows us, the justice system is perhaps where empathy and compassion is most

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lacking. Scotland is getting a head start on infusing these values into the correctional system. The Scottish Ministry of Justice uses ACEs in their analytics in order to better understand "justice users," *i.e.* incarcerated persons, in the hopes of reducing reoffending rates as well as recommend government or third-party interventions to keep at-risk youth from entering the justice system. As alluded to in the previous paragraph, victimization is often intergenerational, and given the prevalence of ACEs and their correlation with criminality, it means criminality is also intergenerational. Policing is often criticized for being reactive rather than preventive, but as we can see the ACE epidemic is too much for one department of government to tackle on its own. Factors that create greater resilience among at-risk youths are things like having good social skills, high self-esteem, strong attachment to a parent or carer, involvement in positive activities, and high levels of school attainment.[xliii] No justice department can provide these things. It takes coordination and collaboration across government departments to intervene in at-risk families at the earliest stage possible. Governments are as in need of joining the learning-society revolution as the rest of us, for the sake of at-risk families and, by extension, society at large. According to one 2014 study published in *BMC Medical*, preventing ACEs could cut incarceration rates in half.[xliv]

How can we guarantee the well-being of our children? Who is equipped to listen to them? How can we give them a voice? How can we help them escape intergenerational cycles of violence, believe in themselves, and lead happy lives?

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What if, in order to answer these questions, all we needed to do was listen to them?

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I can't quite look ahead at the "return to normal" after the pandemic with rose-colored glasses. I know as an evolutionary-systems biologist that there are points of no return in evolution and that this moment of compounding crises is just that. The world is not ending, but an era is. In this time of evolutionary transition, we need to be reminded of what connects us all.

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Part 2

There's No Such Thing as True Social Distancing

-1-
What If We Raised Our Collective Level of Awareness?

The two things most unique to our species are consciousness and our capacity for socializing and cooperation. A gorilla is stronger than a human, but one hundred gorillas are not stronger than one hundred humans because humans are better at communicating, planning, and executing. Getting increasingly large populations to cooperate with one another has been key to the survival and proliferation of our species.

Our knack for communication grew out of evolutionary imperative, something we learned the true meaning of during those early, stringent lockdowns before masks, testing, hand sanitizer, and vaccines were widely available. Deprived of the precious freedom of movement and face-to-face socializing we'd come to take for granted, we showed unprecedented creativity coming up with alternatives for maintaining and strengthening social bonds.

Technology saved our emotional lives and our world by allowing us to work and attend school from home,

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then enjoy a virtual evening cocktail or hang-out with coworkers and classmates in the evenings. Technology made the constraints of lockdown easier to weather because it attenuated the loss we felt when we could no longer visit with each other in person. Unfortunately, the greatest benefactor in this massive uptick in online activity has been Big Tech, whose algorithms are designed to feed on our clicks in order to understand what we want and how they can get us to spend money. Worse still, a lot of recent reporting has revealed the extent to which social-media companies are aware of the mental harm their platforms are causing users, especially teen girls.[i] The Facebook Files reports even showed that, far from being an unfortunate yet unforeseen consequence of its business model, Facebook deliberately chooses profit over the health and safety of its users.

Sherry Turkel is a professor of the social studies of science and technology at MIT who for the past twenty years has studied how computers are changing human society. More recently, she's been looking into how social media changes the way we interact with others and the world around us. About her early interest in digital worlds in the 1980s, she said, "I was very positive on the whole about machines that you physically went to. That you had to pull up a chair to. But once these things were with you all the time, I really wanted to study how the world changes with that possibility."[ii] We see those changes manifest in the documentary *The Social Dilemma* available on Netflix featuring interviews with former Big-Tech executives who now campaign against social media. Tim Kendall, former exec at Facebook and Pinterest, offered up the frankest indictment you'll hear in the film: "These

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services are killing people. And causing people to kill themselves." Although she wasn't interviewed for the film, Frances Haugen is another Big-Tech whistleblower whose name you should know. She worked at Google, Pinterest, and Facebook and was one of the brains behind the Facebook Files, gathering the documentary evidence exposing the company's weak responses to stopping human-trafficking and vaccine misinformation.

Lockdowns were especially hard on those living alone. For them, not being able to go out and see friends meant not being able to see anyone at all. Quality of life can shrivel up very fast when that happens. Early on in the pandemic, April 2020, Australian National University conducted a survey on reported levels of loneliness in Australia. Half of respondents reported they had felt lonely in the previous seven days and 40% reported "an increase in the amount of time they felt socially isolated or lonely."[iii] In September of 2020, the UK government released a surveillance report on population mental health which they regularly updated throughout the pandemic. Their surveys found that young people, women, and people in low-income households represented higher-risk groups as they reported greater rates of depression compared to the pre-pandemic baseline.[iv] At the international level, the Collaborative Outcomes study on Health and Functioning during Infection Times, or COH-FIT,[v] surveyed people in 40 different countries and likewise found increased levels of stress and feelings of loneliness and anger across the population, but more acutely among women and young people: 27% of women felt increased stress compared to 14% of men, and 23% reported greater feelings of loneliness compared to 12%

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of men. A quarter of young people reported feeling lonelier than before the pandemic.

We previously mentioned the need for broader awareness of ACEs in order to better empathize with people and help them become more resilient. That's the agenda for the future. In the here and now, there are real mental-health risks on our hands, and even the CDC states that investment in mental-health systems "are significant not only for public health but also for economic development and social welfare."[vi] The reason economic development hangs in the balance is, on the one hand, mental disorders are responsible for direct losses in economic output and, on the other hand, young people, the future of the economy, represent a higher-risk group for depression and other clinically diagnosable mental-health problems, as we've seen. What's more, only 70% of children and adolescents with a diagnosable problem receive intervention or treatment.[vii]

There's a two-fold mental-health and social crisis seeping up from the ground, and in no moment was that clearer than in the summer of 2021 when people came out in droves in cities across the world to protest against vaccination. Unlike with most protests, these protesters were not united by any particular creed or political persuasion. Many were not even politically active. What brought them all together was a feeling of distrust—of government, the media, and science. As we all know, there is no more fertile ground for verbal hyperbole than social media, and epithets like "Nazis" and "murderers" hurled at public-health organizations and "dictatorships" at democratic governments like those in the UK, France, etc., get tossed around as if these words had no value. Regardless of one's

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opinion of government policy, perverting these words so casually and irresponsibly is an insult to people who have lived or are currently living under *real* dictatorships and who could only dream of having a fraction of the quality of public service and freedoms we enjoy.

Though it took considerable effort, I have chosen to give these verbal caricaturists the benefit of the doubt and interpret all their pith and vinegar as disguised frustration over social distancing and being deprived of comradery and community for several very trying months on end.

Our need for in-person social interaction is irrepressible. Our bodies are programmed to feel good when we have positive, face-to-face interactions with others. Canadian psychologist Bruce K. Alexander famously demonstrated this in his Rat Park experiments in the late 1970s and early '80s. For a bit of background, Alexander was interested in the science of addiction, which at the time was understood as a matter of pure chemical vulnerability to certain substances. This belief was based on studies exploring the self-administration of morphine in rats. Typically in one of these experiments, a rat would be isolated in a small cage where it had the option of drinking from a dispenser of tap water or a dispenser of water laced with morphine. Over time, rats would get hooked on the morphine, often to the point of overdose and death.

Alexander, however, had a suspicion that the conditions of the experiment was playing a role in the results. The rats were kept in isolation during and in between trials, which Alexander felt brought about neurological changes making them more prone to addiction. He designed an experiment in which about twenty rats lived together in a

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"rat park," complete with wheels, balls, space for mating, and plenty of food. When these rats were given the choice between water and water laced with morphine, the differences in the results were staggering.

Swiss-British writer Johann Hari explains the significance of the Rat Park experiments in his 2015 TED Talk called "Everything you think you know about addiction is wrong." "In Rat Park," he explains, "[the rats] don't like the drug water. They almost never use it. None of them ever use it compulsively. None of them ever overdose. You go from almost 100 percent overdose when they're isolated to zero percent overdose when they have happy and connected lives."[viii] Happy *and connected*. Connection can be lifesaving.

Professor Alexander's experiment got people to recalibrate how they thought about addiction. Maybe addiction isn't purely about chemicals, but rather about our level of environmental enrichment and whether or not we feel dislocated. Loneliness and emotional isolation in a very real sense are a kind of cage and addiction increases dramatically when we are trapped in those conditions.

Dr. Nora D. Volkow, director of the US National Institute on Drug Abuse, defines addiction as no less than a brain disease. If that sounds preposterous, consider the fact that addictive drugs target the regions of the brain that regulate emotion and feelings of pleasure by flooding their circuits with dopamine, the so-called "pleasure chemical." Natural levels of dopamine get released when we make love, eat great food, or even just have a pleasant conversation.

Overstimulating the brain with dopamine is a common coping mechanism for people suffering from anxiety

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and depression. Johann Hari knows this perhaps better than anyone, as he himself has suffered from depression since childhood, an experience he discusses in his 2018 book *Lost Connections: Uncovering the Real Causes of Depression—and the Unexpected Solutions*.[ix] In his second TED talk,[x] he shares his experience of traveling 40,000 miles crisscrossing the planet to meet leading experts on depression and anxiety to try to get to the bottom of the causes of and solutions to this all-too-common mental ailment that has embittered the lives of so many.

He says the most important thing he learned is that there are nine causes of depression, only two of which are in our biology, meaning some people are born with genes that make them more prone to depression, and once depression sets in, changes often occur in the brain making it harder to get out of. The other factors, he says, are caused by lifestyle, things like isolation, losing touch with nature, living to work, junk food, and emotional dependance on social media. "We are the loneliest society in human history," he says. "There was a recent study that asked Americans, 'Do you feel like you're no longer close to anyone?' And 39% of people said that described them."

So, what's Hari's answer? Rejecting the old adage of "Be yourself" and replacing it with "Be us, be we. Be part of a group." He describes a therapy pioneered by British doctor Sam Everington called "social prescribing" in which chemical antidepressants are coupled with a social activity to improve patient outcomes. Dr. Everington had one patient named Lisa to whom he prescribed, in addition to drug therapy, time working at a community garden. In her first outing with the garden group, she was

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so anxious she suffered a fit of vomiting, but over time, she said, "as the garden began to bloom, [the group] began to bloom."

We have to invest in things that provide for our deep, underlying psychological needs, the need to have social bonds, to feel like we belong, etc. Before you let yourself think it sounds like pie in the sky, consider a few examples of simple policies feasible at the federal and local levels that address these issues. At the federal level, these include bolstering national health systems, improving training for healthcare workers, and overhauling education systems to put more focus on soft skills such as compassion for both self and others. At the local level, this includes lifting barriers, financial and otherwise, to social and cultural community spaces.

It can even be that the more social groups we have the better. A study from Australia showed that not only does group membership promote well-being, but that multiple group memberships predict higher self-esteem for individuals over time.[xi] This effect comes from a phenomenon in psychology called "collective self-esteem" discovered by Ohio State University professor of social psychology Jennifer Crocker. The most important factor predicting higher self-esteem benefits is how "psychologically internalized" a given group identification is. For example, group identity as women or as Colombians will be more psychologically internalized than group identity as fans of a given rock band. The internalized group identity can serve as a psychological resource that the individuals in the group can draw on to make their sense of social identity more positive. Collective self-esteem is opposed to individual self-esteem in which people define them-

selves in terms of their own unique personal traits. While a certain amount of focus on the self is certainly crucial, the more social groups you identify with, especially deeply internalized ones, the more self-understand you'll have and the more comfortable you'll feel about your place in the world.

In normal times, questions of meaning and one's place in the world tend to take a back seat to more concrete, day-to-day concerns, but the pandemic forced those questions to the forefront of our minds and made us stare the crude reality of life's fragility in the face. Despite the threat of economic uncertainty during the pandemic, many skilled workers, e.g. IT professionals, people in the finance industry, etc., suddenly found themselves longing for a fresh start in a new industry. Research from the UK, Sweden, and the US showed that up to seven in ten people in skilled positions were considering new opportunities during the pandemic.[xii] Prior to the pandemic, the events that typically drove people to make radical career changes were nasty break-ups or deaths in the family, *i.e.* moments of intense emotional duress, which only goes to show that Covid-19 was an equally poignant shock to the emotional system. We all had to confront the fact that life is short and can get taken from you at any moment, which gave many the extra little push to go try something they always wanted to try because it might just make them happier. The result has been a mass movement toward more purpose-driven jobs and companies. Millennials had started the trend pre-pandemic, but Covid-19 kicked it into high gear.

Not only has work-life philosophy changed in the converging climate-Covid-19 crisis, but consumer philos-

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ophy is changing as well, with increased demand for products and services that are respectful of the planet. The financial sector can see the writing on the wall. In spring of 2021, the Blackstone Group, one of the world's largest private-equity groups with ownership in some 200+ companies, on the one hand issued a directive to all its companies to start regularly reporting sustainability numbers while on the other hand investing heavily in alternative fuel sources, all this due solely to increased "public demand for climate accountability."[xiii] They and other groups like them know that if investment continues funneling into companies that degrade the environment and biodiversity, those companies won't be around much longer.

So, how can we go even further to align our professional and economic decisions with our moral and ethical values?

Long before the pandemic, a few of us students and faculty here at the Learning Planet Institute became very transfixed by the Japanese concept of *ikigai*. It's somewhat similar to the French expression *raison d'être* (literally, "reason for being"), as in a sense of fulfillment one has by pursuing a passion, only *ikigai* offers a pathway to finding that fulfillment and purpose. Your *ikigai* is the point of convergence between what you love, what you are good at, what the world needs, and what you can be paid for. It's a call to ask yourself two very simple questions: What do I like and what do I not like? Though the questions are seemingly obvious, they're harder to answer than you might think. Once you find the true answers, it could change your life and have a major impact on the world. Revolutions are started when entire populations ask

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themselves these questions and come up with a common set of answers.

If finding the *ikigai* is an individual search of purpose, let's term "we-kigai" a collective search for purpose. Where do all our disparate needs converge to create a common sense of fulfillment? Typically, when we try to bring our disparate needs together, it only creates disputes. How can we "conscientize" or raise general awareness about where we're headed and how close that is to where we want to be? Can we give people the time and means to find their *ikigai*?

Once we've each found our *ikigai* and work toward establishing a we-kigai, can we then move toward a search for an "iki-Gaia"? Gaia is the personification of the Earth in Greek mythology, thus the iki-Gaia would be the *ikigai* of every living organism on the planet. Can we look past our own species to ensure every organism has a home here on Homeland Earth?

I don't pretend to think these are easy questions to answer. We'd have to overcome major political differences as well as the general mistrust of leaders, the media, and science if we want to even start to dialogue on these issues. We'd have to likewise agree on the "big picture" of where humanity stands based on everything we know in physics, biology, evolutionary science, history, sociology, political science, etc.

We're in no position to pull off such interdisciplinary dialogue because the tradition of separating knowledge into individual silos is too deeply entrenched. From our very earliest days in school, we learn that history is separate from math which is separate from physical education, and the best students are the ones who can adapt quickest

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and best compartmentalize the different subject areas, going from memorizing an important date in 1674 to learning a formula in geometry, and never the twain shall meet. Many are likely familiar with the central thesis of Yuval Noah Harari's book Sapiens that the success of our species is due to our ability to be united by shared stories on scales impossible for other species. The emerging discipline of Big History offers the biggest story yet on the stages of human history. Where Harari's book starts with the Agricultural Revolution, Big History starts with the Big Bang over thirteen billion years ago. Historian David Christian has become something of the figurehead of Big History, starting out as a scholar of Russian history who meandered his way into a new field in which he developed a defining theory to explain the conditions necessary for complex life on Earth called the "Goldilocks principle." That's right, as in the children's story "Goldilocks and the Three Bears."

The name is particularly well chosen because it illustrates the theory so well, *i.e.* that in order for complex life to emerge and then the different stages of evolution to occur as they did, an extremely delicate balance was required, as in the tale: the porridge mustn't be too hot or too cold, etc. The point of the Big History is, in Christian's words, "to show us the nature of our complexity and fragility," but also our extraordinary power as we're the only species that has taken "collective learning" to such a developed stage.[xiv]

The fragile balance necessary to get us here is no less fragile now that we're here. If the planet gets too hot or too cold, we're goners. The story of Big History is one we can look to as a planet to overcome the more

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narrowly focused stories of national pride that divide the global population and are too simple to account for the mind-boggling complexity of our world. What they are effective at is keeping a given society glued together and ensuring that the national culture continues to get passed down from one generation to the next. In that way, they serve an important purpose, but if they interfere with the broader narrative of planetary history, they're in need of revision. Zooming out to inscribe ourselves in the broader story of the planet is not only key to establishing global cohesion but also to breaking down silos between fields.

The author and book that perhaps first mainstreamed the then-nascent intellectual approach of interdisciplinarity was Jared Diamond and his best-seller *Guns, Germs, and Steel: The Fates of Human Societies.*[xv] In his attempt to answer the question "How did it come to be that the West dominated the world?", he extended the scope of his investigation all the way back to the Last Glacial Period and parses through the minutiae of the different phases of knowledge accumulation in geography, biology, history, economics, history of technology, anthropology, etc. Most notable are his investigations into geological and meteorological phenomena on the Eurasian landmass that provided key competitive advantages for inhabitants in the discovery of steel, the manufacture of weapons, and the development of stronger immunity to—you guessed it—zoonotic diseases starting in the early days of agriculture when humans first start keeping close quarters with animals.

Broader-scale investigations like these are key to grappling with the dizzying pace of progress in the Digital Age because they help us see it in perspective, *i.e.* as part

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of a lineage that began with the Agricultural Revolution whose legacy is coming back to haunt us in dramatic ways.

For thousands of years, we lived primarily in tribes in villages and small communities based around families where everyone more or less knew one another. As in any family, values of fairness, reciprocity, and compassion arose naturally in that context (think back to Jonathan Haidt's cultural universals from the introduction). Our brain, psychology, and biological systems were formed over thousands of years in the crucible of that environment, and that's likewise where our models of political and economic organization sprouted from. On the scale of Big History, the transition from intimate agrarian communities to global connectivity took place in the blink of an eye. Yet it's funny to think that, even one hundred years ago, the things we take for granted today—being able to fly anywhere in the world, staying in touch with any part of the globe at any time, etc.—would have been thought magical or touched by the hand of God.

With a more comprehensive understanding of our long evolutionary history, we can start to see our common destiny a little clearer. For the first time in history—and I mean broad-scale, 13-billion-year-old history—we have the means to genetically modify living organisms, build artificial intelligence, and create new forms of life. We have the means to irrevocably change the future of the planet, and even the future of life itself. We are the first-ever species with the means to consciously choose how we want to evolve, something Australian systems theorist John Stewart calls "intentional evolution" in his "Evolutionary Manifesto."[xvi] Even as an evolutionary-systems

biologist, I find this latest development a little hard to stomach. If we are to go about intentional evolution, it has to be something deliberated on by the greatest number and not left in the hands of transhumanists and Big Tech. Before we can address where we want to go, we have to understand where we come from along with where we are currently and, most importantly, who we are.

What if we were just one big family?

–2–

What If We Were Just
One Big Family?

To try to grasp the complex interworkings of our world today, it helps to understand the complex webs of interdependence that got us here. I'm not talking about researching the history of global trade or anything too stuffy. I'm simply referring to being in awe of the number of blood ties you have within a radius of a few miles the next time you visit the community your family comes from. That's the feeling I get when I return to the village my family comes from in Corsica. I'm in some degree cousins with everyone there. Look back into your family history and you'll find a similar community, if not several, where you're related to just about everyone in the vicinity.

Genealogical DNA testing has gotten very cheap in our day and age, but before you get one yourself if you haven't already, make sure you understand the risks in entrusting your genetic profile to a private company. While the major international companies like 23andMe and Ancestry say that consumer information is not shared

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without customer consent, their privacy statements can change at any time and you run the risk of that information being hacked. On top of that, police can obtain your genetic information by subpoena; that's how the Golden State Killer in the US was caught. If you can find a company with a privacy policy you can get behind, I have to say a personal DNA profile going back hundreds of thousands of years is one of the most stunning ways of locating yourself on the grand evolutionary map. You see the proof in black and white that you're genetically related to people living on the other side of the world in regions you've probably never heard of or could never have imagined being tied to.

To take things even further into our evolutionary history, it's worth it to take a brief look at the work of American microbiologist Carl Woese. In the late 1970s, he was a pioneer in analysis of ribonucleic acids or RNA, a molecule that has entered dinner-table conversation in every household since the emergence of "messenger RNA" Covid-19 vaccines. Woese and his collaborators set out to find the most recent organism from which all organisms we now see on Earth sprang, *i.e.* what in science is termed a Last Universal Common Ancestor, or LUCA. And they found it.

LUCA is thought to have lived three billion years ago, but it was far from being the first-ever living organism. It's actually a rather sophisticated, later-stage organism resulting from genetic combinations of earlier organisms. Regardless, it is, in a way, the "parent" organism we all have in common, and by "we" I mean the three families of today's living organisms: bacteria, archaea (single-celled organisms without a nucleus), and eucarya—with humans

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belonging to this last tree line, along with all animals, fungi, and plants. For a brief history of this tale of life, look no further than Richard Dawkins's *The Ancestor's Tale: A Pilgrimage to the Dawn of Life*[xvii], which Dawkins dedicated to one of my mentors, geneticist John Maynard Smith. In the book, Dawkins details how all species originate from a single life form, transforming ever so gradually through the process of natural selection, otherwise summed up in Darwin's famous phrase "survival of the fittest." In short, it's the process by which variation in a population—say, birds with sharp beaks vs. birds with dull beaks—favors one trait, for example the sharp beak, over the other because it better ensures survival in a given environment, and individuals with that trait go on to have more offspring. One of the most impressive things about Darwin's famous theory is that, at the time he came up with it, science hadn't yet discovered genetics, and it's really at the genetic level where this selection process takes place. The genes in your body are a collection of all the genes that have helped our species to survive to this point. Each successive generation is like a sieve through which the most-adapted genes stay in the sieve and the rest wash out.

I don't know who needs to hear this, but it's worth remembering that we are so genetically similar to one to another that any genetic differences are essentially negligible.

And it all started with LUCA. It's curious how early creation stories seem to bear a kernel of primitive knowledge of LUCA. Take the creation story from the Book of Genesis, in which all human beings are said to have descended from the original parents, Adam and Eve, the

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Judeo-Christian version of LUCA. The creation story in the Koran is essentially the same, differing in only a few particulars. In Buddhism, all humans are fundamentally connected to each other because we are all part of the same cosmic force. The point is that the message of brotherly and sisterly love endorsed by many of the world's faiths is based in the idea of common origin or ancestry. I don't think it's any coincidence that we refer to our homeland as a "motherland" or "fatherland." These refer to the country of our origins, but as we see in the words themselves, it goes beyond our geographic origins to refer to a community we are genetically related to.

In his book Homeland Earth: A Manifesto for the New *Millennium*[xviii], French sociologist and philosopher Edgar Morin attempts to recalibrate our territorial allegiances by zooming out, as far out as possible in space and time, to get a real sense of just how miniscule not only we ourselves are but even the history of life on Earth and the importance of our planet in the universe. Our greatest allegiance should not be to some trifling spot of dirt on the planet; it should be the planet itself. The Earth is our true motherland, and until we understand that, our common fate will continue to be endangered. There is virtually no society on Earth that exists independently of any other, and we cannot begin the next era of our development until we see the global human community as our own. That's when we grasp our common planetary destiny. "This," says Morin, "is Homeland Earth."

While there's a kernel of the genetic reality in the great creation stories from religion and mythology, those stories are still too tied to one culture or one region to be viable today. Best to stick with the true genetic creation story

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of LUCA. British mathematical evolutionary biologist (and my former mentor) John Maynard Smith identified the properties common to all evolutionary transitions,[xix] which are based on increasing magnitudes of cooperation. Life emerged from individual molecules cooperating to create complex molecular structures, which coordinated between themselves to create proteins, and so on and so forth until you reach complex organisms like mushrooms and human beings. A key part of the cooperation process Smith identified is self-sacrifice for the sake of kin, something as common to bacteria as it is to humans. Of course, too much self-sacrifice creates a disadvantage because the population won't be large enough to ensure survival. Natural selection seems to favor species with the most optimal cost-benefit ratio, *i.e.* the least amount of sacrifice for the most amount of ensured survival. What we find from ants to bees and so many organisms in between is that there's rarely sacrifice without benefits for kin.

"Kin altruism" is another major Darwinian theory. It states that the greater the degree of kinship between two individuals in a species, the greater the willingness for self-sacrifice or to behave altruistically toward the other. Naturally, we're prepared to sacrifice ourselves for our children, and while we're also willing to sacrifice ourselves for our cousins, it's to a lesser extent. Nonetheless, we're more prepared to make sacrifices for our cousins than for friends, more sacrifices for friends than for acquaintances, who in turn get preferential treatment before complete strangers. While it feels like pure altruism the way we experience it, biology tells us it's really a way of protecting our genes. In a way, we could say kindness is rooted in kinship.

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Since we no longer live in tribes of a few dozen people, the challenge for our society will be figuring out how to expand our feeling of kinship to all those we encounter, all human beings everywhere, or, to go even further, every living thing everywhere, because it is all interdependent.

We've seen a million different ways of trying to establish bonds of trust over the ages. It's a challenge to find someone we can trust and feel sure the feeling is reciprocated. It was less of a challenge when we lived in small tribes where everyone shared the same values. Establishing trust and kinship is the function of social grooming among primates. I groom you, you groom me, now we know each other and I can trust you.

In human societies, language does the heavy lifting to establish trust. British anthropologist Robin Dunbar theorized that language developed for this reason alone, *i.e.* as a tool to figure out who's trustworthy. Communication allows us to spread information about the reputations of others so that we don't have to know someone personally in order to know whether or not he or she is trustworthy. In our day, we get the same job done with letters of recommendation and the like button on social media, modern forms of communicating the trustworthiness of those around us.

Yet perhaps the most important role language and communication has played is in allowing societies to grow larger and larger through shared belief in the same stories. That's how religion gets started, a word which shares the same Latin root as the words "rely" and "rally," *religare*, meaning to bind together. German-Swiss psychiatrist Karl Jaspers coined the term "the Axial Age" referring to the period between 800 and 200 B.C.E. when

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most of the world's great religions today cropped up. American anthropologist David Graeber built on that idea in his major work on the history of debt and credit systems *Debt: 5000 years of history*[xx] by pointing out that coinage and currencies also appeared at the same time as religion. Curiously, currency achieves the same ends as shared group stories in that it can get exchanged over large swaths of land and be used to unite people. Rulers had little else to rely on to guarantee social cohesion other than brute force.

Dunbar posited a cognitive limit to the number of people with whom we can maintain stable relationships, with a stable relationship defined as knowing another person and how that person relates to every other person we know. For humans, that number is about 150 stable relationships. "This limit is a direct function of relative neocortex size,"[xxi] he theorized, which explains why he didn't need to experiment on humans to derive it. He instead experimented on primates and extrapolated the results. With Dunbar's number in mind, we can see then why reputation is so important in social relations and why bad reputation is so damaging. The 150 stable relationships in our lives are likely reserved for family and friends. If you fall outside my 150, you better have a good reputation if you want me to trust you.

While 150 stable relationships may seem like kind of a lot, it's almost nothing in terms of the global population. It makes it seem impossible to be able to count the global population as kin. How will we know if they're trustworthy? The answer comes from the field of game theory and Canadian mathematician Albert W. Tucker's famous "prisoner's dilemma" experiment. It's based on

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a strategy you may have seen in crime shows on prime-time TV. Two men are arrested by the police on minor charges. They're suspected of having committed a more serious crime together, but there's no evidence to prove it. The two men are separately interrogated, and they're each offered the same bargain. "If you rat on your partner and he doesn't rat on you, you can walk free while he gets ten years. If you both rat on each other, you'll both get five years. If neither rats on the other, you'll each serve six months on your minor charges."

If it were you, it'd be in your best interest to rat on the other, even if he's innocent, because if you don't get ratted on, you walk free. The catch is that if you both rat on each other, you both get five years, so there's actually more to be gained in having faith in the other person, even though you'll have to serve six months regardless. It's still jail time, but considerably less than if both of you were to rat on each other. Indeed the study has found over and over again that, despite the more rational course for each individual in betraying the other, the bias for cooperation is much more common.

Cooperation bias is something young Dutch historian Rutger Bregman insists underpins the human condition in his book *Humankind: a hopeful history*,[xxii] defending the argument that people are inherently good with documentary evidence from security camera footage and real-life examples that, at the first sign of disaster, the majority of people do what they can to intervene and help those in need. The pandemic gave us an opportunity to see cooperation bias in action. Despite the difficulty we each went through personally during the pandemic, we generally helped others in any way we could. In fact, altruism was

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so pervasive we hardly even noticed or questioned it. We could say Bregman is something of a Rousseauian optimist as opposed to a Hobbesian amoralist. So how does he explain all the hate in the world? Hate is a product of certain ideologies according to Bregman. In the West, that ideology is neoliberalism. "If we assume that most people deep down are selfish and cannot be trusted, then you'll start designing your institutions around that idea. And you'll create exactly the kind of people that your view of human nature presupposes."[xxiii] Neoliberalism is an ideological undercurrent operating in Western thought since the 1970s that believes people are inherently selfish. "Now," recommends Bregman, "maybe we can move into a different era, because this whole idea that most people are selfish is simply unworkable during a pandemic."[xxiv]

Might the health crisis be the greatest opportunity we've ever been presented with to come to terms with our natural cooperation bias, ignore our negligible differences, and start defending the great family that is the descendants of LUCA? And might the climate crisis in its turn be our greatest opportunity to realize we're all equal passengers on this "pale blue dot," to borrow Carl Sagan's term for Earth as photographed from four billion miles away by the Voyager 1 space probe?

While our news cycle seems constantly ablaze with crises, real and otherwise, what doesn't get reported is how unprecedented the scale of humanity's cooperation is in this very moment. Information, services, food, and goods are crisscrossing the globe every second of the day. Open up a Wikipedia article on your smartphone and the smorgasbord of knowledge you have at your fingertips is the product of cooperative scholarship on a

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global scale. For better or for worse, humankind is more connected and interdependent than ever before. When the flow of information or goods gets interrupted—say, by a major cyberattack or a cargo ship getting stuck in the Suez Canal for six days—the repercussions on the global economy, and therefore on our lives and livelihoods, is immediate.

In December 2020, the Weizmann Institute of Science in Israel published a study in *Nature* magazine that provided perhaps the most striking picture yet of just how impactful our global commerce and development frenzy is. According to the study, "the mass of all human-produced materials—concrete, steel, asphalt, etc.—has grown equal to the mass of all life on the planet, its biomass."[xxv] Let's unpack that just to be clear. The Earth's total natural biomass—mud, rocks, animals, trees, you name it—the researchers calculated at approximately 1.1 teratons (1.1 trillion tons). Everything humans have ever created, which the researchers term "anthropogenic mass," likewise weighs 1.1 teratons. And there's no sign of our production slowing down. In fact, by 2040, the authors say, anthropogenic mass will triple as production of cars, airplanes, household appliances, and computers will only increase. In case you didn't before, perhaps now you have a clearer notion of what we're talking about when we use the word "unsustainable."

While there's a great many people making serious efforts to try to steer global trade and corporate behaviors toward sustainability, they're finding themselves facing mightier and mightier headwinds. Conspiracy theorists and bad state actors engaged in "active measures" are manipulating information to deceive the public on the

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pandemic and the viability of democracy. Ethno-nationalists are defying the liberal ideals of equality and justice. Too many corporate governance committees continue lusting after increased profits despite detriments to the environment, then they hide their wealth in tax havens, deepening socioeconomic inequalities. Many speak of Covid-19 as the great equalizer because it does not discriminate based on race, creed, or class, but according to a 2021 Oxfam report, "billionaire fortunes returned to their pre-pandemic highs in just nine-months, while recovery for the world's poorest people could take over a decade."[xxvi] The title of this breakthrough Oxfam report, "The Inequality Virus," says it all, and, as we know, inequality is as lethal if not more than Covid-19.

To an extent, it's natural to want to hoard everything you earn and keep on making more of it because we have a basic instinct for protecting ourselves and our kin, and fortune isn't guaranteed to last. But today's wealth is completely astronomical compared to anything before in human history. Some today have so much money that if they spent a million dollars every day, it would take them several centuries to spend all their fortune. Billionaires Warren Buffet and Bill Gates began a philanthropical movement called the Giving Pledge to try to get the ultra-wealthy to donate the majority of their fortunes to charitable causes.[xxvii] Given how disastrous inequality is both in terms of social cohesion and public health, redistributing the wealth of the ultra-rich is the easiest solution out there for leveling the playing field and improving quality of life for the greatest number of people.

Our big human family has a key advantage in tackling the pressing issues we face, and that is that we can try

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to understand them with science and critical thinking to guide us. Sharing a planet implies a responsibility to preserve not only for our own needs but those of the next generations. Are we truly aware of just how big of an impact each one of us can make individually?

What if all it took was 40 seconds of compassion to change someone's life?

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What If All It Took was 40 Seconds of Compassion to Change Someone's Life?

If I were to tell you that compassion saves lives, you would think either that I was crazy or that you would need to see evidence in order to believe it. In the case of the latter, head to your local library or bookstore and pick up *Compassionomics: The Revolutionary Scientific Evidence That Caring Makes a Difference* by American physician-scientists Stephen Trzeciak and Anthony Mazzarelli. [xxviii] It draws on studies in the medical literature as well as the authors' own professional experience to show there are quantifiable differences in patient outcomes when doctors treat their patients with even a minimum of compassion.

The title of this chapter takes inspiration from one of the studies the authors cite, a randomized controlled trial conducted at the oncology department of the Johns Hopkins Hospital in Baltimore. Doctors participating in the study delivered a scripted 40-second message to each

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patient they saw that basically said, "We're going to be here with you, we're going to get through this together, I'll be with you every step of the way."[xxix] The effect of those 40 seconds of compassion was astounding, with patients reporting drastically lower levels of stress and anxiety just knowing that they're doctor actually cared about them. And the authors' list of examples goes on and on. A similar compassion-focused approach was implemented with heart-attack patients that saw mortality rates drop 75%, with measurably lower blood-pressure and stress levels to boot. Positive outcomes in trauma recovery improved fourfold. Patients suffering migraines had faster recovery rates, as did back-pain patients. Even diabetes patients had sugar levels drop by up to 80%! Compassion isn't measurable, but its effects in the patient-doctor relationship are, and this is because well-being isn't an either/or phenomenon between psychological and physical health. It's both in interplay with one another.

And the benefits aren't just on the patient side. Doctors with stronger patient relationships and improved patient outcomes get more satisfaction out of their job. Considering the numbers of healthcare workers who leave the profession due to high rates of depression and burnout and the fact that healthcare support frequently ranks in the top ten of occupational groups with the highest suicide rates,[xxx] any proven strategies out there for protecting health-care professionals deserve to be embraced. According to Trzeciak and Mazzarelli, doctors with unsatisfactory patient relationships are 22 times more likely to suffer job burnout. Trzeciak would know since he had his own bout of medical burnout that he struggled to deal with. "Historically, the thinking is

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escapism. The way to get out of burnout is to get away… I decided to lean in more rather than pull back, to connect more rather than detaching. That was when everything changed for me, and I felt burnout symptoms begin to lift."[xxxi] While on the surface the doctors are the ones "offering" compassion to the patient, the approach actually helps doctors overcome their own feelings of distress.

Compassion is more than just empathy. Compassion makes us to want to do things for others. It's the difference between medicine as a science and medicine as an art.

The good news is that compassionate approaches to patient care can be learned, and once learned, the improvements in outcomes are immediate. The only catch is that it can't be forced. All the research suggests that healthcare providers have to find their own approach to compassion on their own terms. We all speak our own unique language of compassion.

As more and more hospitals are being run like for-profit companies, the focus is changing from saving lives to saving money. Burned-out caregivers offer less quality treatment and even put their own health at risk in the process. Many hospitals were already overburdened and understaffed when Covid-19 came and pulled the rug completely out from under them.

Financial pressures are affecting quality of care in private and public hospitals alike. Even the UK's stout National Health Service (NHS) is not immune (no pun intended) to the for-profit trend, seriously affecting specific areas of care—hip-replacement, neonatal services, and more. [xxxii] We tend to think of healthcare providers and patients as separate entities, but it's really a symbiotic relationship.

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A widening gap between demand and available treatment doesn't mean that patients go without; it means that healthcare providers have to work longer, more intense hours to satisfy patient needs. Despite the tireless efforts made on the provider side, patient risk can only increase because overburdening healthcare workers impairs their coordination, attention spans, critical-thinking capacities, and communication and decision-making skills. These are the main causes of malpractice, with fatigue being particularly pernicious both because fatigue is normalized in the hospital environment and because its impact on performance tends to get underestimated.

In short, neglecting healthcare workers means neglecting patients, and that comes at a heavy cost. Again, these concerns far predate Covid-19. If driving down hospital budgets correlated with real benefits for providers, patients, or both, it would make sense, but stress and malpractice only increase in strained hospitals, which winds up being very expensive. A few recent studies in the US estimated malpractice was responsible for 251,000 deaths annually, making it the country's third leading cause of death.[xxxiii]

In order to give healthcare providers the headspace to practice compassion with patients, the healthcare system itself has to be compassionate toward healthcare providers, or at least create an environment where compassion has a fighting chance.

Buurtzorg (Dutch for "neighborhood care") is a Dutch home-care nursing company started by former nurse Jos de Blok. It's been incredibly successful since it started, and the big innovation driving its success is self-governance among its teams of nurses, an idea software devel-

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opers will be very familiar with. The organizational structure among the nursing teams is flat, meaning there's no top dog calling the shots. Teams run between 10 to 12 nurses responsible for providing care to 50 to 60 people in a given neighborhood. From drafting up individual care plans to recruiting new nurses, communicating with doctors and hospitals to setting schedules, mapping treatment to evaluating patient outcomes, each team is left to its own devices. They even manage their own finances. The keyword is trust. It's rooted in a philosophy that medical services are most effective when care providers can decide for themselves what a patient needs. The company has the highest rate of employee satisfaction in the Netherlands, patients outcomes are strong, and, contrary to what you may think about this boutiquey-sounding healthcare option, costs are average. It's a win-win for everyone. Because the nurses alone are responsible for results, they're incentivized to develop relationships with patients in order to provide the absolute best care possible. The company has been able to find traction well outside the Netherlands, branching out to Sweden, Japan, France, and the US, while the NHS is testing a pilot program in Wales.

Fortunately, there's a way to adapt this management style to any field. The roadmap was laid out in Frédéric Laloux's 2014 book *Reinventing Organizations: A Guide to Creating Organizations Inspired by the Next Stage of Human Consciousness.* Taking examples from companies like Gore-Tex, Patagonia, and Whole Foods, he shows that their strength lies in their Buurtzorg-like management structure, giving everyone in the company the power to be an agent of change whenever inspiration strikes

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them. He says the reason self-governance works in business is because that's how nature has worked for millions of years. Change never starts from a central authority and branches out according to a set plan. It takes place in mutations or when an individual senses a change in the environment and takes individuals steps to adapt to it.

Here, we have another case of the Rousseauian optimism versus Hobbesian amoralism, or the belief in our innate goodness versus the belief in the power of self-ishness. Rutger Bregman, the author of *Humankind: A Hopeful History*, first came to international fame with his first book *Utopia for Realists*[xxxiv] in which he shows the economic benefits of compassionate policymaking, e.g. reducing working hours, providing universal income, combating inequality, fighting poverty, taxing the top 1%, opening borders, etc. Irish-Catholic-nun-turned-journalist Karen Armstrong started a movement in a similar vein, getting political organizations and religious communities to sign her Charter for Compassion, a formal commitment to embracing compassion as a core value. As a former nun, she's seen the best and the worst of what organized religion has to offer. She lays the blame of religious oppression at the feet of political perversions of the core spiritual message. According to her, that core message, at least for the major religions, is compassion. For Buddha, compassion leads to Nirvana. In the Abrahamic religions, it is compassion that leads to an experience of God or Allah. When we care for others, we cease to feel like we're the center of the world, which is where holiness lies for believers. In the Christian world, many are familiar with the Golden Rule as stated by Jesus in the Gospels, but what you may not know is that Confu-

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cius' version of the Golden Rule, "Do not do to others what you do not want them to do to you," predates Christ by five centuries. Confucius went even further by saying every one of his teachings leads back to this rule.

Armstrong's charter asks signees to:

— uphold compassion as the center of all ethics and religion

— resist any interpretation of holy text that promotes violence or hatred

— teach children comparative religion in a manner that is respectful to other traditions and cultures

— develop a positive outlook on religious and cultural diversity

— learn to understand and empathize with the suffering of all humans, even those considered enemies.[xxxv]

It's a message designed for the religious and non-religious alike. It establishes a zero-tolerance policy toward hatred and bigotry, saying compassion is the greatest of all alternatives to scapegoating one's problems onto other people.

Kim Polman is mover and shaker in the world who wants us to extend the Golden Rule to the environment. "Treat the whole planet as you would wish to be treated," she says, and her Reboot the Future Foundation[xxxvi] is working to do just that, offering training to young people and influential leaders alike to build a more compassionate and sustainable future. She's like Karen Armstrong in that her core values are rooted in the ethical teachings of the ancient religions and philosophies, drawing from every tradition, even the ancient Egyptians and the Incas. The foundation's guiding metaphor for the global pivot to compassion is the transformation of the butterfly. Imag-

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inal cells are the special cells dwelling in the caterpillar already present at its birth that spark the process of metamorphosis, and Polman says compassion is the human equivalent of imaginal cells. It's deeply rooted in all of us starting at birth and we need only activate it when the timing is right to undergo the most profound change.

The Native American legend of the Story of the Two Wolves expresses the same idea. In the legend, a grandfather tells his grandchildren a story: "There are two wolves, and they're always fighting each other. One is darkness and despair, the other is light and hope. Which one wins?" The grandchildren don't know what the answer is. The grandfather says, "Whichever one you feed." Science has confirmed what the tale posits, that when we suffer trauma, especially in childhood, we're at greater risk of feeding the bad wolf. When we practice self-awareness and only feed the good wolf, both we and the world start to heal.

French Buddhist monk Mathieu Ricard wrote a book all about feeding the good wolf called *Altruism: The Power of Compassion to Change Yourself and the World*[xxxvii]. Before becoming a monk, Ricard got his PhD in molecular genetics, and in the book he draws on neuroscience literature (remember he has a PhD in genetics) to show that we can observe increases in attention span, emotional balance, benevolence, compassion, and other cognitive characters through functional MRI, which lets us see the areas of the brain associated with the most activity based on blood flow.

For Ricard, the best way to cultivate these cognitive and emotional capacities is through meditation, which does require more than 40 seconds of compassion. More and

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more doctors are recommending meditation, specifically mindfulness meditation, for reducing stress and fighting off depression.

Despite this, many people are turned off by meditation because on the surface it appears isolating. They argue, Wouldn't a more productive practice for developing compassion be doing something out in the world? Cancer specialist and PhD student at the Learning Planet Institute Cloé Brami is an advocate of meditation as a complementary health practice for its proven benefits in reducing stress. With less stress and anxiety, she argues, we can get in touch with our true compassionate selves, making us better equipped to go out into the world to meet people and tackle profound human problems. And she can back up her position with examples from the medical literature too. Changing our own lives is the first step to changing the lives of others.

One last example of the under-emphasized power of compassion comes from a woman who's in my personal pantheon of the greatest to have ever walked the earth, Dr. Cicely Saunders. Born in 1918, she went to Oxford as a young girl to study politics, philosophy, and economics. When World War II broke out, she began training as a nurse and working at St. Thomas's Hospital in London, an experience which inspired her to become a doctor and medical social worker. In 1948 she fell in love with one of her patients, a 40-year-old Jewish refugee from Poland who had escaped the Warsaw Ghetto and lay dying of cancer in her ward. There on his death bed, he couldn't escape questioning the meaning of his life, and Cicely was there for him in every moment of his anguish, doing the only thing she could do, lending a willing ear to his

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distress and being a true friend. It was her first experience with mitigating the suffering of the dying, and it would become her lifelong passion. In the ensuing years, she laid the foundations of a new field in medicine, what we now call palliative care. Her movement went against the grain of the medical community in its day because it treated terminally ill patients with compassion, guided by Saunders's philosophy that you matter until the very last moment of your life. One of the many difficult aspects of terminal illness is not the illness itself but the emotional, mental, and spiritual duress of living day to day with knowing your death is imminent. Saunders found that simply by listening attentively to her patients, she could alleviate *physical* pain symptoms. She also observed that worry on the part of the patient's family caused great stress in patients, which in turn could block the therapeutic effects of even the strongest drugs. In palliative care, as in all medicine, the body and mind work in tandem, and so it is the doctor's duty to treat both.

In 1967, she started the world's first stand-alone hospice for the terminally ill, St Christopher's Hospice in London, designed to be a home away from home where patients can garden, write, talk, and make art. It launched what became an international hospice movement culminating with the WHO recognizing palliative care as a medical subspeciality in 1990. Not only did she found a new medical discipline, but it's the only field that has strategies to mitigate suffering for both patients and their families. The lives of millions of patients and families have been transformed by her compassion. As far as I know, no filmmaker has ever tried to make a biopic of her epic life story of death, compassion, and love (she later fell in love

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with another of her patients), but I'll be first in line to see the movie if one does get made. I'm simply astounded at the boundless love and compassion she offered to people society wholly deserts when they're most in need, the dying.

There's no reason why Dr. Saunders's approach to palliative care should be restricted to the hospice. The factors that affect the quality and efficacy of hospice care apply equally to every specialty. In conventional healthcare practice, a patient is defined by his or her illness. Dr. Saunders's care philosophy of "you matter to me" could revolutionize treatment efficacy if every patient encountered it at the doctor's office and in the hospital.

Perhaps Saunders was so inspired to treat the dying with compassion because, as evidence suggests, it's in old age and in our time of dying that we typically feel the most compassion. A 2015 Brazilian study entitled "Patterns of Value Change During the Life Span"[xxxviii] took a sample of roughly 35,000 Brazilians aged 12 to 65 and asked them to state the values they held most dear out of a few options. The options were of six different kinds, values of Excitement, Promotion, Interaction, Normative (tradition, religion), Actualization (knowledge, maturity), and Existence. Perhaps to no one's surprise, values of Excitement and Interaction were most endorsed by adolescents and young adults. Promotion and Actualization became more important to people through middle age, and late in life Normative and Existence tended to rule the day. The study showed how values change depending on the tasks people are faced with on a day-to-day basis. Late in life, after responsibilities have mostly faded and people are faced with declining health, what choice does one

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have but to contemplate existence? Endorsement of religion became particularly strong at this stage, perhaps because people are afraid of death, but likely also because faced with our own mortality, we're less interested in the "selfish values" of Excitement and Promotion, and more so with altruism and compassion for others. So, why wait until late in life to practice compassion?

What if we were actually good to one another for a change?

-4-

What If We Were Actually Good to One Another for a Change?

In 2007, a team of researchers in developmental psychology, Esther Hermann et al., published a paper in *Science* magazine positing the "cultural intelligence hypothesis"[xxxix] which states that humans have a unique set of cognitive skills for dealing with the social world, meaning exchanging knowledge and participating in culture, that our nearest primate relatives, chimpanzees and orangutans, lack. The researchers submitted primates and human two-year-olds (pre-literate, pre-educated) to the same series of tests. The study found that primates and humans fair about equal when it comes to skills for solving problems in the physical world, but the human children had far more sophisticated cognitive skills when it came to socializing. The researchers concluded that our evolutionary success comes down to these unique cognitive skills, which are responsible for our having developed a larger brain and the ability to acquire language, mathematics, and scientific reasoning.

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Ontogeny is the study of the development of an individual organism—an individual organism such as yourself, for example—as opposed to phylogeny, which is the study of the evolutionary history of a species. Ontogenetic studies of humans tend to say that our naturally prolonged vulnerability as infants and children is what catalyzed our need to develop culture. Attributes of human culture are things such as speech, beliefs, the use of tools, etc. Humans remain dependent on parents for much longer than other species, and it's in this developmental period that we first become familiar with the hormones serotonin and oxytocin through nurturing and socialization, which create in us feelings we associate with happiness and love.

Intellectuals such as Yuval Noah Harari, Rutger Bregman, and others argue that this capacity alone is how we gained our competitive advantage in evolution, but it's important to investigate how they come to that conclusion. They say our ability to feel happiness and love makes us more averse to hurting others, let alone killing others. Bregman refers to studies dating back to World War II showing that only 20% of soldiers used their weapons, or a similar anecdote dating back to the US Civil War in which many of the guns recovered at the gory Battle of Gettysburg were still loaded, suggesting that many of them had likely not been fired. In World War I, French and German soldiers are known to have drunk and made merry in the trenches during brief truces in the fighting. Humans have a natural predisposition toward conviviality over killing. Bregman's examples drawn from security-camera footage show that in no matter what situation we find ourselves, as soon as we see someone in danger, our first instinct is to try to help.

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Ernst Fehr is an Austrian-Swiss economist who, unlike most of his colleagues, believes that it's actually unselfish motives that drive economic decisions. These beliefs are conclusions he's drawn based on experiments in his field of behavioral economics, namely the Dictator Game, which shows that humans have a bias for sharing money even in situations when it's not required. An important exception to this bias is when we feel we are working within a corrupt or unfair system. Jonathon Haidt's universal cultural value of fairness keeps resurfacing.

Tax-paying is a perennial apple of discord in society, a debate that centers around fairness. Everyone says they're willing to pay taxes, but only if the taxation system is fair. If politicians appear to be squandering tax revenue or if certain groups are perceived as unfairly benefiting from the tax system, people will refuse to pay or try to commit tax fraud to avoid taking part. The taxation system works somewhat similarly to the electoral system. We don't like paying taxes, but so long as the system is fair, we'll do it. Similarly, we don't like when our candidate loses, but so long as the election system remains fair, we can accept the result.

Childhood is when we learn the positives of socialization, but if we grew up in a broken home, if the schools we attended and the neighborhood played in were dangerous, it can seriously sour us to any ideas of wanting to socialize and extend compassion to others because in rougher socialization environments we typically learn to only rely on ourselves. We typically learn not to trust anyone.

In the medical field, there's an analogy to this willingness or unwillingness to trust others: the placebo and nocebo effects in drug trials. In blind controlled

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studies, some in the study group will receive an active drug while others receive an inert substance such as a sugar pill with no molecule impacting health. Typically, everyone in the study group thinks they're taking the active drug. Placebo effect is when people who have ingested the inert substance begin reporting positive health outcomes. Nocebo effect is the opposite, when those who have ingested the inert substance report negative health outcomes. The difference is based on levels of trust in medicine. In 2009 in France, a big case of nocebo effect made the daily news. French telecom company Orange had built new cell towers in the vicinity of a residential community just outside Paris, and residents of the community filed a lawsuit against the company complaining that the cell towers were causing sleep disorders and nosebleeds. The case was thrown out when it was discovered the cell towers hadn't yet been turned on.

A nocebo effect you may be more familiar with in your own life is when you see police. Many feel suspect when the police are around, as if the police inherently distrusted them. Any institution that appears to inherently distrust people will only cause resentment on both sides. I'd even go so far as to say any top-down structure inevitably fosters resentment and distrust to some extent because those on top can only act like police to those lower down. People aren't typically resentful and violent toward police until police are resentful and violent toward them. Just look at the difference in reoffending rates between prisoners from traditional punitive prisons and prisoners from more progressive, humane ones. In the 1990s, Norway began reforming its prison system to turn away from punitive-approach imprisonment to

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something a bit more compassionate, and reoffending rates have plummeted as a result. This comes out of a belief that punishment is about suspending prisoners' freedoms, not their human rights. In Norway, prisoners can still vote, take classes, see the doctor, etc., and this is because Norway sees prisoners as human beings rather than dead weight on society. Are Hoidal is the warden of Norway's Halden Prison, and he feels that when we break the law there are consequences to be paid, but that does not mean we are anything less than human. According to Hoidal, after Norway began moving away from vengeful imprisonment, "recidivism in Norway has fallen to only 20% after two years and about 25% after five years. So this works!" In comparison, the reoffending rate in the UK is 50% after only 12 months following release. But of course, more humane treatment comes at a price. The annual cost of a place in a Norwegian prison costs twice as much as in an English one.[xl]

School and family play a key role in how trusting we become as adults. German educationalist Katharina Rutschky warned against what she termed *Schwarze Pädagogik* or "poisonous pedagogy," which refers to any and all violent or psychologically manipulative methods used to instill lessons in children. Swiss psychologist Alice Miller's book *For Your Own Good*[xli] builds on Rutschky's ideas by drawing clear correlations between traumatic childhood education experiences and harmful behavior as adults. Miller even offers up an analysis of Hitler's troubled upbringing with his severely violent father and how that upbringing shaped the man he would become. What's more, according to Miller, is that in early 20th^Scentury Germany as a whole, poisonous pedagogy

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was the rule and not the exception, making the traumatized adult population more receptive to Hitler's hateful politics and more willing to blindly obey his authority.

While blind submission to authority can result from a traumatic childhood, a famous experiment conducted by American psychologist Stanley Milgram in the 1960s shows that there's a natural willingness in all humans to obey authority, regardless of how much it may conflict with personal conscience. Most everyone has heard of this experiment. It's the one where subjects were oblivious to their status as subjects at all, believing instead they were being hired as assistants to an experimenter (an actor dressed in a lab coat to convey authority). The experimenter, aided by his "assistant," posed questions to a "subject" strapped to an electric chair (another actor, the torture device a phony). Every time the man in the chair answered a question wrong, the assistant was asked to administer an electric shock, adding 15 extra volts with each wrong answer. Despite the man's blood-curdling screams, the assistants in the study put up surprisingly little resistance to commands to administer deadly levels of electric shocks. The key to getting the "assistants" to go along with it was the experimenter's promise to the assistant that he or she would not be held responsible for any consequences. The experiment has been reproduced several times, and in every case the majority of "assistants" are willing to carry out the experimenter's orders in full.

What's at play here is not simply our social programming that trains us to respect and obey authority figures, but rather an innate desire to want to please authority figures. In his youth, Christian Picciolini was a leader of one of the most violent white supremacist groups in the United

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States. He tells his story in a TED[xlii] talk about being born to a family of Italian immigrants who came to Chicago in the 1960s. His parents "struggled to survive with raising a young family and a new business, often working seven days a week, 14 hours a day […] Even though I knew they loved me very much, growing up, I felt abandoned. I was lonely, and I started to withdraw, and then I started to resent my parents and become very angry." He's far from the only child to have ever felt abandoned by parents hamstrung by social inequalities. He began acting out as a teenager in an attempt to get their attention. That need for attention from an authority figure is what made him so ripe for the picking when Clark Martell, founder of the Chicago Area Skinheads, approached Picciolini smoking a joint in an alley. Martell snatched the joint from Picciolini and said to him, "That's what the communists and Jews want you to do to keep you docile." Picciolini didn't know what communists or Jews were and didn't even understand what the word "docile" meant, but the attention Martell gave him Picciolini says was "like a lifeline." He soon began running with white supremacists because he couldn't resist the sense of community and camaraderie that they offered him after feeling so isolated for so long. He absorbed their rhetoric like a sponge, began recruiting for the group by preying on other marginalized, vulnerable young people, carried out attacks against minorities, and stockpiled weapons for the race war he believed he would see in his lifetime.

Then at the age of 19 he met and fell in love with a girl who was not part of the movement, nor had she, in his words, "a racist bone in her body" for that matter. They married and had a son, and he recounts that it

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was while holding his son in his arms that he was able to reconnect with the innocence he lost, forcing him to question his identity. "Was I this neo-Nazi hatemonger, or was I a caring father and husband?" He didn't have the courage to step away from the movement then but managed a compromise instead. He stopped taking part in the group's street activity and opened a record shop that promoted white-power music with some heavy metal and hip-hop on the shelves as well.

It was the record-shop clientele that eventually broke him down. He remembers a black teen coming into the shop visibly distraught, and he decided to ask what was wrong. The guy's mother had just been diagnosed with breast cancer. Picciolini instantly felt a connection to him because his own mother had had to battle breast cancer. On another occasion, a gay couple came in with their son, and Picciolini was touched by their boundless parental love, reminding him of his love for his own son. After a while, he couldn't keep squaring the circle to justify his bigotry. He took the white-power music off his shelves and later formally abandoned the white supremacists.

Unfortunately, by the time he finally managed to cut ties, it was too late. His wife had left him. She'd been begging him to break from them for years. Soon his shop went under and he was left a broken man who would have to battle depression for years.

Eventually, one of his few remaining friends was worried he might take his own life and she encouraged him to get a new job to turn his life around. IBM was hiring. "Here I was, a closeted neo-Nazi covered in hate tattoos. I didn't go to college. I'd been kicked out of multiple high schools multiple times. I didn't even own a computer." But lo and

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behold, IBM hired him, and as luck would have it, he got sent to install computers in a high school he'd been expelled from twice for getting in fist fights with students and faculty. The second time he got expelled, it was for fighting a black security guard at the school named Mr. Holmes. It was only a matter of minutes after stepping foot inside the school that Picciolini spotted old Mr. Holmes. He decided he needed to make things right. At the end of the day, he approached Holmes in the parking lot as the man was getting into his car. Holmes recognized him right away and was preparing to have to fight him again, but Picciolini quickly apologized for what had happened and the man didn't hesitate to embrace him. He told Picciolini he needed to forgive himself and made Picciolini promise he would tell his story "to whoever would listen." A TED Talk and several books later, including the critically acclaimed *Breaking Hate: Confronting the New Culture of Extremism*[xliii], Picciolini's spent his life trying to do just that. Much of what he concludes about his experience with white supremacists and why he got tied up with them are things sociologists likewise find in their studies of extremist groups. The people most at risk of falling in with extremists are people who were isolated as children.

Picciolini doesn't stop at traveling around sharing his story. He also works with vulnerable youths, primarily those at risk of getting mixed in white-supremacist extremism, but he also works to prevent jihadist extremism as well. He's developed a framework for understanding the situations of his proteges, and it sounds a lot like the ACE framework. He says he asks the kids about their upbringings and looks for "potholes" in their stories. We all have potholes in our past, he says, *i.e.*

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things that "nudge us off our path," he says. He's found that young people allow themselves to be radicalized because they're desperate for a role in society and violent ideology offers them a seemingly powerful one. It lends itself to Crocker's collective-self-esteem theory that one of the keys to lasting happiness is embedding ourselves in a community, and when that's a moral community, to paraphrase Jonathon Haidt, we're more prepared than ever to make enormous sacrifices.

I wanted to take the time to go into detail on Picciolini's story because so many of the ideas we've discussed so far are reflected in it: how the individual self relates to the community, how the biological self is influenced by the environment, and how shared stories establish deep bonds across large groups. The shared stories and beliefs of the white-supremacist community or any extremist community for that matter are frankly nauseating, but these stories have the same function as, for example, what we tell ourselves about why Europe should be unified under the EU, *i.e.* that the Union was established to keep fascists from rising to power on the continent ever again, and we owe it to ourselves to remain united for that reason. It's the power of that story that erected all that glass and concrete in the EU quarter in Brussels. The power of that story is what sends students on Erasmus exchange programs in countries all across the continent. Erasmus isn't just an opportunity to gain experience in a different education system; it's meant to provide young Europeans to meet so together they can foster a sense of European community. Familiarizing ourselves with people considered foreign is a way of combating intolerance and hatred.

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The Erasmus program is an example of public policy aimed at building trust. There are policies that can also destroy trust, and I'm not just talking about isolationist policies. Governments that fail to take the needs of the voting populous seriously will commit major public-policy errors, and when those failures go uncorrected, the risk of reactionary outrage grows, and this is the moment populists wait for to swoop in to gather up the discontented, just like Clark Martell did to the young Christian Picciolini. That's how dictatorships are born. Populists come to power against much opposition, and in order to silence that opposition they have dole out violent repression as soon as it rears its head. It calls to mind Machiavelli's famous aphorism, "All armed Prophets have been victorious, and all unarmed Prophets have been destroyed." Dictatorships then endure because they can count on another human instinct we've discussed, the need to protect kin, this time through a culture of submission. If by submitting to fascism I give myself and my loved ones a better chance of survival, not only will I submit willingly but I'll teach my children to do so as well.

In this very moment, democracies everywhere are at risk of falling prey to the age-old populist recipe of chaos and disaster. In pre-pandemic France, the *Gilets Jaunes* movement started as an outcry against a bill to tax fossil-fuel-burning cars, but it quickly transformed into a mass resistance movement against what they called a "government of mistrust." The movement first started in rural France at roundabouts where people would gather to protest by wearing reflective vests the government had mandated for all vehicle owners. Demonstrators built a strong feeling of solidarity with one another, which was

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in stark contrast to how they felt they were being treated by the government, *i.e.* overlooked for moneyed interests. The *Gilets Jaunes* are the respectable, honest people that make up a healthy democracy who, when betrayed by hubristic policy, are left feeling abandoned, vulnerable, and desperate for a sympathetic ear and a tight-knit community.

This is one of the reasons why the fight against fake facts, fake news, and conspiracy theories is so hard. The common thought is that only idiots get tangled up in the alternative realities of QAnon and the like, but the sheer number of conspiracists far outweighs the percentage of people we can reasonably deem lacking full intellectual capacity. So, why do rational people buy in? Because it's not about the facts, it's about a community, one in which they don't feel judged, condescended to, or despised. Marie Peltier of the Galileo Higher Institute of Education in Brussels posits that, unlike the 20ᵗʰ century, the 21ˢᵗ century is lacking a grand, unifying narrative, leaving a vacuum that conspiracies have rushed in to fill. Many have likewise observed that in fact throughout history feverish belief in conspiracies is common in moments of upheaval.[xliv] The reason why is hard to explain because every culture is prone to its own set of anxieties and prejudices, and these remain dormant until moments of crisis jolt them awake. For proof, just look at the number of times Jews have been scapegoated during societally stressful periods in Christian history.

Up until World War One, people principally looked to divinities to explain catastrophic events, but in the wake of advances in modern science and the monumental destructive capacity humanity demonstrated in

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the 20ᵗʰ century, science and nihilism were able to by and large elbow out the divinities. Some say politics has also filled the void left by religion in that, from an anthropological perspective, one can say communism and fascism offer unique social identities and interpretations of world history that resemble those of religion.

While it's important to look to history and anthropology for explanations of the current conspiracy, there is a measure of stupidity that we cannot ignore either. Which isn't to say it shouldn't be taken seriously. Fascism, Nazism, and Stalinism are likewise made up of certain parts of stupidity, but no one's laughing when it comes to the unrivaled destruction these movements wreaked on humanity. Conspiracy theories offer all the magic and miracles of religion, just without the god. It lets people indulge that apparent human need to explain the fates through the agency of dark forces. God gets taken out of the equation, but the devil, alongside cannibalistic child-sex-trafficking elites, lizard people, and, as ever, Jews continue to factor in the complex, diabolical calculus governing the ills of our world.

A similarly fanciful but decidedly more optimistic group out there are the transhumanists, who believe through technology we can overcome the limitations of natural evolution and therein guarantee our survival. Counterposed to transhumanism is declinism, the belief that civilization is crumbling and our species may not be long for this world. It's perhaps a natural reflex to turn to utopian or dystopian fantasies during times of major societal change and social upheaval represented by the forces of globalization, de-industrialization, global pandemics, etc. There is no shortage of periods throughout history

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when the observers of the day were certain the sky was falling. We even find Roman historians, writing at the height of the Roman Empire, griping that their civilization had declined from its prior glory.

The recipe for concocting these fantasies and short-sighted interpretations of history is rather simple: toss together a little fact, naiveté, and fear of the unknown—in the form of death, another race, another culture, another gender, etc.—then shake it all up and serve it hot. Let's replace far-fetched fantasy with new shared stories rooted in science derived from a simpler recipe with only two ingredients, collective intelligence and coexistence.

The grand narratives with which religions explain the world are not based in science, which is why their credibility has slowly eroded since the Enlightenment. Unlike scientific explanation, however, religious narratives provide believers with meaning. Science can explain the how of history, but it falls short of being able to help us understand the present, let alone what the future will look like—except when it comes to the climate future, as that unanimous verdict has already been handed down. The 18th^Scentury Enlightenment gave us incredible tools for pursuing human progress, but precious little for understanding more modern phenomena like the climate crisis, evolution, and even the vastness of space. It's time to re-outfit the Enlightenment so it can better grapple with the modern world, and in the process we have to build it back better to make it more inclusive and environmentally focused. The New Planetizen Enlightenment must provide meaning while offering us the tools to take action against what threatens humanity and the planet at large.

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Finding, or perhaps rediscovering, great unifying narratives will be a key catalyst for getting us all on the same page. Yuval Noah Harari, in a fantastic conversation with Rutger Bregman for the Yalta European Strategy Online Conversations,[xlv] talks about "our ability to convince millions, sometimes billions, of people to believe in the same story" as the engine of our survival. The danger here, as we've seen above, is that "it doesn't even have to be a true story," says Harari. "To put it in a provocative way, I would say that we control the planet and not the chimpanzees because we believe in a lot more fictions, a lot more nonsense, than the chimpanzees." Bregman rebuffs Harari's outlook in his critique of neoliberalism, saying, "Our view of human nature tends to be a self-fulfilling prophecy […] If you really believe that people are just selfish and lazy… that's the kind of behavior that you're going to get out of them. If you turn it around and if you have what I think is a more realistic view of what people can do, I think you can get a very different kind of behavior."

The Bregman vs Harari debate at times reflects the Rousseau vs Hobbes debate we've been looking at throughout this book. To counter Bregman's "survival of the friendliest" premise, Harari notes that oppression in the form of dictatorships, slavery, and genocide have been more common throughout history than friendliness. Apart from the brief democratic moment in ancient Athens, it took till relatively recently in our history, the 18th century, for large-scale democracies to take shape that at least nominally were concerned with the well-being of all citizens, though even then democracies have been rather few and far between in modern history, despite the fact that quality of life in democracies is consistently

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higher than under other forms of government. Bregman emphasizes a "distinction between hope and optimism" and identifies himself on the side of hope because it shows you "things can be different […] There's nothing inevitable about the way we've structured our economy and society right now. It can all quite radically change […] How do we actually change the world? I also agree it starts with telling a different story…. I'm trying to tell this different story that might change how people behave. If they would actually believe in it, that people are— not angels—but fundamentally decent or at least pretty good, I think could have really positive consequences and may even help us to survive in the next couple of centuries."

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How do we capitalize on what is fundamentally good in us? How do we optimize our instinct for friendliness at the global scale? What stories are powerful enough to convince us, at least as many of us as possible, that it's better to be kind than selfish? How do we expand the circle of people we care for from around a handful to the whole of humanity?

Ironically, the shared stories and motivating factors that can drive us to do good can also drive us to do evil. I think it's time to explore new ways of cooperating on the small scale and outfit those initiatives to operate on increasingly larger scales like Russian dolls, all different sizes but all identical to one another. This is the fractal phenomenon I've already mentioned.

What if we could transform the chaos of the masses into collective intelligence?

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Part 3

Thinking Fractal, Acting Viral

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What If We Could Transform the Chaos of the Masses into Collective Intelligence?

While upsetting, one person's ignorance I don't get too worked up about because it's as good as guaranteed that we can banish ignorance through education. We know on the one hand that the right education, training programs, and access to the right information can help everyone break the chains of irrationality. On the other hand, the chaos of the masses, the ignorance of the masses, I find terrifying. It's the ignorance of the masses that leads people astray, into violence and cruelty sparking vengeance and atrocities. In our current age, we're more at risk of winding up in such a scenario than perhaps ever before.

The Renaissance came about through the invention of printing and improvements in transportation, allowing creeds, knowledge, and ideas to spread on a scale never before seen. Prior to the printing press, only monasteries, universities, and the wealthy could afford to buy and keep books, but in the Renaissance books became a house-

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hold item, and newspapers and pamphlets could circulate across Europe. Within a few centuries, the Industrial Revolution took Renaissance progress and distributed it to every corner of the globe. Education got institutionalized and came under the control of the state rather than the church. Improvements in shipping, first by boat, then by train and eventually plane, expanded trade. The telegraph, then the radio, and later the television moved information at unprecedented speeds. Now we're in the age of the internet and social media, which has brought about two fundamental changes.

The first change is open access to publishing. Prior to the internet, you had to go through a major publishing or broadcasting company to reach mass audiences. To get printed in a science journal, you had to be established in the scientific community; to get a book published, publishers had to know who you were and distributors had to have faith your work could sell; newspaper editors had to sign off on your articles; political parties had to endorse you to get your ideas shared, and so on and so forth. In short, your success depended on the approval of your peers.

For as many advantages as this system had, history is fraught with examples of powerful peer groups corrupting and wielding their power like dictators in their field. There are so many scientific and other breakthroughs that got silenced because the predominant peer group disapproved for whatever reason of the new information and refused to propagate it. Fortunately, even when the dominant peer group hobbles the field with its conservative bias, audiences and consumers can themselves wield a great deal of power in deciding what should get printed

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or produced and what shouldn't. Think of the job of a television producer: it's to get as many eyeballs as possible on your TV channel in order to get advertisers to want to advertise with you. The producer's personal preferences for content and aesthetics matter not.

This system runs its own risks of getting out of hand. Because sexual and violent content garner the most viewership, the television market, the news especially, can tend to get carried away. Enter your typical government communications commission to keep things civil, and this is the rough framework for achieving freedom of the press. TV producers of every stripe and conviction have to follow the same rules, and in reality most television channels self-regulate anyway *via* their own ethics committees to promote diversity of opinion, though of course this form of regulation is strictly on their terms. It sets up a situation in which, while every media outlet may be biased to some extent, the media landscape as a whole does not have one particular bias.

Society was already prone to the dissemination of false information before the Digital Age, but the internet came and blew the doors off. Now anyone with a computer can spread far and wide anything that comes to the top of his or her head. No communications commission can regulate what internet users share, and even if one tried, users will always have anonymity and VPNs on their side. Publishers and media outlets meanwhile don't have that luxury since they're held liable for everything they put out.

The second major change is that, unlike traditional media, social media is not subject to regulation. They have the same interest in getting as many eyeballs on their platforms as possible, but none of the checks and

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balances, therefore they don't have to verify that the data is correct or ethical; in fact, for the sake of their revenues they have an incentive to keep misinformation circulating if that's what users engage with more. The powerful algorithms these companies build take advantage of our cognitive biases, or in other words they target our flaws and try to appeal to our worse angels. In the West, the culprits are known collectively as FAAMG (Facebook, Apple, Amazon, Microsoft, Google) and those in Asia as BATX (Baidu, Alibaba, Tencent, and Xiaomi).

The products these companies build may be digital and virtual, but they create real problems in the physical world. The first is addiction to technology, and this often starting at a young age. The UNICEF-WHO-*Lancet* report "A future for the world's children?" found that children could name more commercial brands than they could plants and animals, and most of the brands they could name were companies that sell junk food. Children's online exposure to harmful commercial marketing is "enormous" according to the report, and while data for understanding the long-term effects of social-media advertising on children isn't yet available, it's well established that television advertising of junk food is a direct contributing factor to childhood obesity. "The average young person in the USA sees 13,000-30,000 advertisements just on television each year […] The link between television viewing and poor diet was strongest for children who watched the most commercial television, and for those who were actually exposed to advertisements embedded within programmes."[i] On top of this, many kids around the world are exposed to advertisements for adults-only products such as alcohol, tobacco, e-cig-

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arettes, and gambling, and a study showed that children were just as easily able to identify these brands.

Governments were quick to want to harness the power of social media, algorithms, and AI as hybrid weapons in wars of influence both within and without their borders. Russia is perhaps the prominent example. While we can point the finger at internet companies for preying on users, they did not create bad state actors. The US and the USSR fought a contentious influence war, the Cold War, for half a century, but the means of doing so were analog and therefore indirect as they had to work through human networks of political sympathizers, publishing houses, and media outlets. Today, governments can main-line their influence campaigns.

In an ideal world, the internet would only contribute to the public good through its unequalled capacity to share information and foster online discussion. Of course the internet is often used to do just that, but with commercial and political interests maniacally competing for attention, good-old Enlightenment values of learning and debate tend to get crowded out. Thomas Jefferson championed the marketplace of ideas where freedom of expression allows differing opinions to vie for position, but ulti-mately only the best ones get embraced by the public and go on to dominate the intellectual market. The internet has made his theory appear short-sighted. Certain ideas are dominating the current intellectual market, but they're far from being the best or most rational ideas. In fact, the least rational ideas seem to be winning out.

That said, it doesn't mean you and I will be staying off the internet today or anytime soon, or, if we do, it won't be for very long. The internet can be as lovely as

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a summer's day, but the 2020 Netflix documentary *The Social Dilemma* indeed counted the ways we're being manipulated by big tech. More frightening still, as the documentary shows, is the fact that many of the programmers don't actually understand how the algorithms work, even though they helped design them. The September 2021 Facebook Files reports proved this was the case at Facebook. In one instance, it was shown that the company's algorithms designed to remove hate speech and misinformation fail to detect a majority of the content that should have been targeted because the algorithms have become such behemoths after so many years of tinkering the programmers can't fully understand them.

Four years before his death, theoretical physicist Stephen Hawking warned that "the development of full artificial intelligence could spell the end of the human race."[ii] The following year, he signed an open letter with 700 of the top scientists in the world to express their concern that "technology is giving life the potential to flourish like never before, or to self-destruct. Let's make a difference!"[iii]

At the time of writing, artificial intelligence has not yet taken over the world. It has, however, figured out how to manipulate us and cause severe damage to institutions and people's lives. Tim Kendall, the former Facebook and Pinterest exec cited earlier, has even said they're a threat to democracy that could cause civil war should they go on unreformed. As we saw on 6 January 2021, only a few weeks after the Netflix documentary came out, he was almost proven right. The Trump supporters who stormed the US Capitol that day had been conditioned by social media for years, ramping up their blood thirst against the

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opposing party. The worst part is there's no telling if the storm has passed or if we're only in the eye of it.

Social media played an especially deleterious role in spreading misinformation throughout the Covid-19 crisis, especially as regards the vaccine. Now I am a scientist. While it's of course not unusual to pore over health options and the efficacy of given treatments, it is unusual when that debate is fueled by unscientific data. The threat to democracy that Kendall evoked lies in the fact that, with nothing but social media, the ignorant and the conmen of the world can overload the public with misinformation. They say every castle has a breach and, though it took a while, democracy's has been uncovered. We need to rush to defend it.

We can only do so as a united front. Over centuries, scientists and journalists have devised means for establishing facts and communicating them to the public. These are comparing research results, replicating experiments, broadening research, and coming to a consensus or, when consensus can't be reached, defending a given hypothesis while remaining open to a better one when it arises. There are a number of prerequisites for establishing truths in this way. First, it takes experts in conducting experiments, and second, a community of knowledgeable peers to scrutinize their work. That's the key to collective intelligence. Smart people are smarter in groups.

The peer-review process can't survive if it's only upheld by a small group of scientists. It's a cornerstone of the Enlightenment, whose revolutionary idea was to live by verifiable truths rather than monarchical whims, and this was upheld by the institutions of education, scientific research, and journalism. These are the very institutions

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under attack in our current age of online misinformation, and anyone who believes in the more inclusive and eco-friendly Planetizen Enlightenment must help find ways to defend these institutions.

As an educator, I always feel the first step to be taken should come in the form of education. An education rooted in rote memorization is no education at all. A real education teaches students to create new knowledge starting from a young age. This is how education can play its part to undermine the virulence of misinformation. In my previous book *Learning in the 21st Century*, I spoke at length about a program we developed at the Learning Planet Institute called The Savanturiers (a play on French words *savant* or scholar and *aventurier* or explorer). Run by translator and educator Ange Ansour and her team, the program meets children in the classroom, whether that's in kindergartens or high schools and every grade in between, with activities designed to help children master the scientific method and learn about the state of the world in the Anthropocene era. Since the first book got published, the program has become part of the Climate Academy in Paris, an initiative started by Paris mayor Anne Hidalgo that seeks to educate what she calls "the Climate Generation," *i.e.* today's 9- to 25-year-olds. One of my favorite aspects of the Savanturiers approach is the discussion session held at the end of each activity in which students are asked to reflect on the activity and answer questions about how they like to learn, their experience in the classroom, and if they feel they're progressing.

The Savanturiers is one of many initiatives out there trying to offer kids more agency in their education environment, but the methods of conventional education

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still predominate because teacher training is still very conservative. Emphasis in teacher training is typically put on knowing the rules of the classroom rather than on creativity and encouraging teachers to be innovative. We like to talk about education as a pathway to freedom, but that starts with teachers being free to teach not so much lessons as critical thinking. The conventional, one-size-fits-all approach is nowhere near adequate for educating future generations on how to coexist in a complex world.

Most students aren't taught critical-thinking skills until they reach higher education. If in a Planetizen Enlightenment world children can develop critical thinking at an earlier age, we can then repurpose universities for even greater things. One of the towering figures of the enlightenment was Goethe, but contrary to popular belief, his greatest contributions were not literary. He was lauded by Napoleon I as representing "the boundless measure of man" for his prowess across disciplines. Not only is he famous for his literary milestones Faust, Werther, and the like, but some even consider him the father of biology[iv] due to his breakthrough studies in morphology (a term he invented), and the likes of no less than Darwin stands on Goethe's shoulders with his discovery of the intermaxillary bone in humans. Up to that point, the absence of this bone in humans was thought to be a mark from God that humans were separate from the animal kingdom. His discovery helped establish an argument for the shared ancestry of all species, which propelled Darwin's later research. His discoveries aside, what's relevant to education today is Goethe's approach to knowledge. In Goethe's Germany as well as in Scotland, the universities were the engine of the Enlightenment, and

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his maxim "Only everyone can know the truth" is a call to inclusivity that universities need to revisit today. He made that statement in defiance of the cult of worship that had developed around Newton in Goethe's lifetime. Cults of worship suspend scientific progress by making people passive in the discovery of it. Even major literary figures can be scientists because every one of us is a scientist. Science is collective, generated and regenerated by mobilizing collective experience and intelligence.

Universities are perfectly positioned to help drive the inclusive and sustainable Planetizen Enlightenment. They can be laboratories for the world of the future by bringing together researchers and faculty from a diverse array of disciplines to work alongside inquisitive, impassioned students who want to solve the problems of our time. Faculty and students have to work together as peers to design the campuses, curricula, methodologies, and diplomas of the Planetizen Enlightenment. As during the Enlightenment, universities will have to play a major part in reshaping how we think about intelligence, civic engagement, and democratic decision-making.

For anyone who wants to see such an institution in the flesh, please come and see us at the Learning Planet Institute. We started 15 years ago as part of the University of Paris offering bachelor's, master's, and PhD programs as well as a research laboratory affiliated with the French Institute of Health and Medical Research (INSERM), France's only public research organization dedicated to human health. The Learning Planet Institute's purpose is to help students, teachers, researchers, administrators, and partner schools and higher-education institutions devise new pedagogical approaches that incorporate

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research and problem solving for real-world application. We created the University of Paris Cité "Challenge Institute", and my co-director Vincent Dahirel and I are finding the institute's work increasingly in-demand both locally and internationally to help education and other institutions of all shapes and sizes revamp their operations to make their programs and initiatives more relevant to the next generation, a generation that insists on coming to personal fulfilment by contributing to a better world.

In traditional education, the learning-through-research approach is the prerogative of post-graduate students only. At the Learning Planet Institute, we want to implement it at every level of education, including in continuing education. The way to do that is as simple as getting learners to look critically at their community and their surroundings, note where things can improve, and come up with research projects that harness citizen science and open science to alleviate the problem if not eliminate it entirely. Our role is merely a support role, empowering individual learners and the communities they are helping. It's a way of reconciling the sciences with the humanities and of fusing action with ethics. The projects seek cross-pollination with as many disciplines and sectors of society as possible because "only everyone can know the truth."

When you go in depth into what the Climate Generation, or "Greta Generation" as some call it, is calling for, there's a persist demand for creating education opportunities that allow students to marry study with action. Or, to borrow a phrase from founder of the European Research Council Helga Nowotny, it's to make students into "competent rebels," *i.e.* young people with the requi-

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site knowledge to understand today's challenges and reverse our untenable status quo.

Another institution where you see these ideas in action is Arizona State University, home of the Sun Devils.[v] Twenty years ago, they were a regional school totally under the radar if you lived outside the US, but in that time their student body has doubled and their research funding quintupled with 40 ASU-affiliated interdisciplinary research centers now in existence. Ask them the key to their success, they say it "rests on the belief that inclusivity and excellence are not mutually exclusive."[vi] The university is rebranding itself as a 21st^Scentury public research university. It's become a leader in seizing partnership opportunities that tackle challenges both local and global for the mutual benefit of students and community. With their more than 200 EdTech partnerships, they can develop digital education tools to modernize the learning environment and improve student outcomes (student drop-out rates have been cut by a third in 20 years). And their digital prowess doesn't stop there. Relying heavily on digital has allowed them to establish institutional relationships internationally, and the US News & World Report even named them the US's most innovative university for the past seven years in a row.[vii] A little later I'll talk about ASU president Michael Crow's visit to the Learning Planet Institute and how our two institutions plan to work together to bring a touch of Sun Devil to the City of Lights and vice versa.

Despite some foreboding forecasts we've discussed so far, one Enlightenment value that's thriving in our era is fact-checking in journalism. Expert proofreaders are hired for the exclusive job of going line by line through

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articles to verify their claims. It's a heartening sign to see that, though much maligned, responsible media outlets are insisting on their uprightness through fact-checking, which is a baseline for transforming chaos into collective intelligence. There's no better example for our children than journalists defending Enlightenment values because they show children the importance of knowing the difference between a credible source and an uncredible one.

As with so much in life, education, research, and the media are at their best when they don't have to worry about profit and productivity. Just think how in the classroom not all cognitive skills, creativity for example, get reflected on a report card. Similarly, not all research leads overnight to commercial applications and not all journalistic investigations result in articles that can compete for attention at the top of the news cycle.

Public funding is crucial for preserving Enlightenment institutions, but contributions from foundations and endowments are likewise necessary to set students, scientists, and journalists up for the most success. Wikipedia offers the best example in terms of an ideal funding-to-output scenario. In just a few short years, it has eclipsed every major print Encyclopedia and not just in the West but around the world. I think Denis Diderot, the author of the first encyclopedia in 1751, would be proud. The architects of Wikipedia are millions of scholars across the world incentivized by an ethical funding model. With so much misinformation floating about on the internet, how fortunate are we that the world's preferred reference resource is a free, open-collaboration encyclopedia that manages to keep misinformation off of its pages? That's not to say it isn't assailed constantly by bad actors (and

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sometimes benign actors just trying to have a laugh), and the editing community has had to develop a series of defenses over the years to keep information accurate.

Allow me to offer an example of how fortunate we are to have Wikipedia. We've just discussed Goethe. During the writing of this book, a friend texted me an inspirational quote that reads,

"Until one is committed, there is hesitancy, the chance to draw back. Concerning all acts of initiative (and creation), there is one elementary truth, the ignorance of which kills countless ideas and splendid plans: that the moment one definitely commits oneself, then Providence moves too. All sorts of things occur to help one that would never otherwise have occurred. A whole stream of events issues from the decision, raising in one's favor all manner of unforeseen incidents and meetings and material assistance, which no man could have dreamed would have come his way. Whatever you can do, or dream you can do, begin it. Boldness has genius, power, and magic in it." – Goethe

When I first read it, I found the quote so inspiring I immediately wanted to add it to this book. Just as an oversight, I went to find what Goethe work it was pulled from, when I realized that this quote, like so many others commonly attributed to great names in history, didn't came from Goethe. Wikiquote (from the Wikimedia Foundation) has an article on the misquotation because it's somewhat frequent. It's actually taken from book by Scottish mountaineer William H. Murray, who only quoted Goethe in the final two lines: "Whatever you can do or dream you can, begin it./ Boldness has genius, power, and magic in it!" The quote is no less inspiring after you learn who the true author is, but it's less likely to

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catch people's eye than when it has the gargantuan name of Goethe behind it. As you perhaps noticed on the dedication page of this book, I added the parenthetical note that the quote often attributed to Margaret Mead has yet to be tied to one of her works or lectures, and the Pierre Curie quote is often misattributed to French author of The Little Prince Antoine de Saint-Exupéry.

The misquotation above is a relatively harmless error; it's the more pernicious ones that we need to be weary of. Thanks to Wikipedia's editing system, only a few of those pernicious errors have ever gotten traction on its pages. And of course, there's even a Wikipedia article on Wikipedia's "misinformation scandals." There's the one in which American political figure John Seigenthaler's biography falsely presented him as a suspect in the assassination of John F. Kennedy, which remained uncorrected for four months. A more complex Wikipedia misinformation scandal was the one concerning the Warsaw concentration camp. A Warsaw judge tasked with investigating Hitlerite crimes committed in Poland issued official testimony that Nazi gas chambers had been discovered within the city limits, but this turned out to be a conspiracy theory politically convenient for the Polish far right. Wikipedia failed to pick up on the misinformation in its article on the Warsaw concentration camp. The camp did exist, only outside the city limits. Regardless, Wikipedia's credibility suffered as a result. Both stories of misinformation in Wikipedia articles show the intense level of scrutiny and cooperation necessary in order to get information right. Wikipedia knows that the more it grows, the bigger target it will have on its back for those of every political persuasion looking to propagate misinformation.

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Traditionally, media outlets are privately owned, and so responsible news sources will provide a disclaimer when contributors are shareholders in the media group. But not all news-media outlets are responsible. The first victim in this cloaking of private interests is, well, the truth. A lack of transparency can only feed more conspiracy. Unlike in the media, science has no room for lack of transparency. Studies are not considered credible unless all public and private funding partners are listed lest there be "merchants of doubt," to borrow of term from Naomi Oreskes and Erik M. Conway,[viii] out there looking to cause confusion and muck up the works. In a world where some are all too willing to dishonor their profession for the highest bidder, we need funding transparency everywhere we can get it.

The consequences of letting money talk louder than the truth can be disastrous. Let's not forget Australian-American press magnate Rupert Murdoch launched conservative American news channel *Fox News* with the full weight of his entertainment empire behind it not out of political conviction (he's described Barack Obama as "a rock star" and held fund-raisers for Hilary Clinton's re-election campaigns) but because its inflammatory info-tainment model has proven highly profitable.

While *Fox News* is perhaps the worst offender out there, it's certainly not the only media outlet owned by an entertainment mogul apt to use incendiary tactics to win viewership. A new financial model is certainly in order in the media landscape, and the alternative that strikes me as the most promising is that devised by economist Julia Cagé in her book *Saving the Media: Capitalism, Crowdfunding, and Democracy.*[ix] Following a brief economic

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study of how news media operate and why that model is failing, her book presents a new hybrid model that mixes the structuring of a foundation with that of a joint-stock company to allow companies to leave shareholders and advertisers out of the equation. In short, the idea is to treat news like education, *i.e.* a public good. Cagé is a French economist with a PhD from Harvard and her ideas are already taking root with certain French media outlets such as daily newspaper *Libération.* We're crossing our fingers they'll catch on across borders and overseas.

   Another possible solution, and one that includes fact-checking, is that ethics oversight. While social media companies initially all wanted to treat their platforms like the wild west, the rise of populism, foreign election inter-ference, and conspiracy theories have forced them to face the music and take responsibility for the societal erosion their algorithms are fostering. It all came to head with the January 6th Capitol riots when Facebook and Twitter banned Donald Trump from their platforms. While society can certainly be glad Mark Zuckerberg and Jack Dorsey decided to do the right thing at least in this instance, it scares many, especially in the legal community, that there's no government oversight of these companies forcing them to do the right thing. Quinta Jurecic is a precocious senior fellow in Governance Studies at the Brookings Institution in Washington D.C., a bipartisan policy research group. Once a special correspondent to *The Washington Post*, she now runs a blog and podcast entitled "Arbiters of Truth" exploring the national-security concerns surrounding Silicon Valley's lack of accountability with regard to content moderation. She interviews other experts about what a legal framework around online speech could look like in

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order to protect public safety.[x] The title of her blog comes from a statement Mark Zuckerberg made in an interview on *Fox News* in which he said, "I just believe strongly that Facebook shouldn't be the arbiter of truth of everything that people say online." This was nine months before the attack on the US Capitol.

The attack was instigated by the Trump-fueled conspiracy, largely disseminated *via* social media, that the US election outcome had been rigged (a belief still held by 36% of Americans at the time of writing[xi]). Since then, rather than remove false information altogether, Zuckerberg's platforms have been clipping disclaimers onto posts containing false information. Ideally, something more like a Wikipedia system of oversight would be in place in which false information is removed and, when opposing viewpoints are held on a given topic, both sides could be presented using neutral language.

While there's nothing outlandish about a call for more transparency with regard to funding and healthier over-site with regard to content moderation, it all seems like an immensely tall order. Traditional and social-media companies alike need to step up and assume their role as cornerstone democratic institutions that can foster a more ethical means of producing and sharing information and eradicate the cancer of fake news in the process. The January 6th Capitol attack was only a taste of what can happen when moneyed interests corrupt the information space. It's time to realign institutional policy to put greater emphasis on collective intelligence.

What is collective intelligence? It's asking the question, What if we could all learn from one another?

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What If We Could All Learn from One Another?

It certainly doesn't bear repeating, but I'll do so anyway: what has allowed our species to develop more brain power than any other species is our ability not to transmit knowledge, as all animals do, but to do it on a massive scale and on an infinite number of topics. The internet has shown us the true meaning of the word "infinite" in this regard, but in the early days of our species we learned so slowly that the growth process was almost imperceptible. Mastering the use of a few rudimentary tools took millions of years. From there, mastering agriculture took a few thousand years. We got from the Industrial Revolution to the Information Revolution at relatively breakneck speed, and in the snap of a finger we've gone from the Information Revolution to decoding the human genome.

Language and writing have played a decisive role in our evolution because these were the biological "technologies" for sharing ideas. Oral language allowed us to share our ideas with those around us, then written

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language allowed us to spread that information not only across geographic distance but through time as well with old texts being passed down over generations. Digital technology has not reinvented the wheel as it were, only amplifying the power of the old technologies of speech and writing, but this it has done by leaps and bounds. The real revolution of the Digital Age was democratizing ultra-powerful technology and putting it within reach of every person on the planet.

In the prehistoric days of telling stories around a campfire all the way to 20ᵗʰ^Scentury cable television, information transmission came from the few at the top down to the many at the bottom. The logic initially was that the elders or inner circle are in the know and the rest can benefit from their knowledge. Education systems throughout history, first with individual tutors, then with Aristotle and collective education in the *Lyceum*, were based on this same model of the knowledgeable few, *i.e.* scholars, priests, and the like with access to books, taught the many, the novices. For centuries, books remained very pricy commodities, thus it's no surprise the first universities grew out of major libraries in the Middle Ages. Students lived in the Medieval equivalent of dormitories attached to these libraries in order to study their texts, which earned these institutions the title of a college. From here began the classic model of students learning from a teacher directing a class. Not only was knowledge still passed down from the scholarly few to the numerous novices, but the poor were completely taken out of the picture because they couldn't afford education. Robert de Sorbon's Sorbonne University in Paris actually began as a free college for the poor funded by the Church.

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Throughout the history of education in the Christian world, the Church was at the tippy top of top-down hierarchy in every school and did not take challenges to its authority lightly. When the Enlightenment came valuing the brain over the Bible, the scientific revolution was born. Initially getting its legs in discussion societies, science eventually made its way into university curricula to lead the way to modern research institutions, which still today are often affiliated with universities.

Only in the late 1800s did education become a right for all children, with most public school following the Jesuit model of education, therefore it remained top-down. More student-focused alternatives such as peer instruction, which existed in England as early as the 18th century, or John Dewey's beloved learning-by-doing pedagogy, were never mainstreamed. With further advances in printing that would relegate Gutenberg's press to the museum once and for all, books and newspapers became cheap and abundant, and later radio and television made knowledge dissemination faster than ever. But not one of these innovations could shake the centralized, top-down model of knowledge transmission. If you're getting it out of a book or watching it on TV, you're a passive recipient of knowledge.

Finally the paradigm shifted with the advent of computers and the internet. Now there's no limit to data-storage availability, everyone can access that data (unless your government controls access to information), and everyone can add to that amount of data, regardless of its veracity. It's the story of the Tower of Babel coming to life wherein our tower is able reach never-before-seen heights, but the lack of a common language, or in this

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case a common set of rules and values, threatens us with self-destruction.

In the absence of a top-down model, how can we use the internet to grow our knowledge when everyone is both a teacher and a student at the same time? What I'm endorsing will not strike you as new by any means, but in the current climate it takes on an unprecedented urgency: everyone needs to be given the tools to think critically. How do we go about this?

Since I am advocating learning from each other, it would be hypocritical of me not to talk about the works that have inspired my outlook, two figures in particular. I'll start with French philosopher and sociologist Edgar Morin. Though he turned 100 years old in the year I'm writing this, his work on the "Seven Complex Lessons in Education",[xii] first published in French in 1999, shows incredible foresight. His first lesson is about combatting blind faith in received knowledge by fighting the "error and illusion" that are the perennial pitfalls of the human mind. Morin states that we can't simply accept knowledge wholesale; we have to examine its nature and develop a "knowledge of knowledge" that we can use to fortify the imperfect human mind. I've already talked about the need to understand the brain, both its functioning and cognitive biases. To add to Morin's call to understand how the brain works, we need also to understand how the brains of machines work, and in order to do so, the algorithms that run the modern world cannot remain black boxes. We need to learn how they're designed and how to wield them in a way that adheres to humanist ethics. If ever there were an interdisciplinary topic of inquiry, it's the question of algorithms, as they have sown themselves into every part of human life.

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Morin's second complex lesson in education, the "Principles of Relevant Knowledge," is about fully developing our capacity to situate information in its broader context and understanding how the parts of the whole can change based on influences within the broader sphere. To provide an example, think about where you situate yourself in time. Doubtless you don't think about yourself in relation to the origins of the universe, or even the origins of our species for that matter. Similarly, think about where you situate yourself in space. If you have nine minutes to spare, I highly recommend watching an IBM short film from 1977 that very effectively demonstrates the reality of magnitudes of space. The film is called "Powers of Ten,"[xiii] opening on a couple picnicking on the Chicago lakefront. Every ten seconds the image zooms ten times farther out, all the way till it reaches 100 million light years away, then starts over with the couple and zooms ten times further in every ten seconds to the subatomic level of the human body. The point is, when you think about where you are in space, you don't think about the perspective of 1,000 million light years away, whereas the "power of ten" approach does. It forces us to become versatile with changing the magnitudes of our comprehension as a means of decentering ourselves lest we get stuck thinking we ourselves are the end-all and be-all of existence, as we're often tempted to do.

The third and fourth lessons are about conceptualizing our identity as humans through an understanding of our "physical, biological, psychological, cultural, social, and historical" condition. Morin recommends coupling our identity with that of the Earth itself, an outlook that will be decisive for the future of our planet and therefore must

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figure in our approaches to education in light of how our lifestyles threaten the very future of the planet. I insist we exercise caution when listening to billionaires such as Elon Musk and Jeff Bezos talk about the future of humanity playing out on colonies in space where resources will be limitless. Let's not kid ourselves. There is no planet B, as climate activists say, and as far as our current technology can tell, space will be very hostile to human colonization. Astrophysicists are quick to remind us that there's hardly any water or atmosphere in the space we've been able to explore, no comfortable temperatures where we can grow food, no plate tectonics that mimic the carbon dioxide cycle we have on Earth, and no magnetic field to protect us from cosmic radiation. When people talk about colonizing Mars, while research is still underway, we've yet to even find simple bacteria inhabiting that planet. An organism as complex as we are stands little to no chance of survival. It's a perfectly noble pursuit to want to explore space and search for other forms of life, but when it's being funded by the super-wealthy, some of whom defend over-tapping Earth's resources in the interest of accelerating the development of space technologies, I hope it raises eyebrows. Given the choice between mobilizing resource to try to support life outside the biosphere or trying to protect the fragile biosphere we already have, it's really a no-brainer. After all, what does "biosphere" mean but atmospheric conditions ideal for life?

Morin's fifth lesson is about the need to face the unknown and shed any ideologies that purport to know what the destiny of humanity is. Looking back on the 20th century, all major events and catastrophes were all unexpected, and that's really the entire story of our

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species. Education should prepare us to expect the unexpected, as that's the only way to deal properly with the unknown. The pandemic primed our resilience in this regard, as we've had to come to grips with an unprecedented virus on an unprecedented scale. Let's continue developing that courage and resilience toward the unknown while it's still fresh. Morin uses a metaphor of sailing and navigating the oceans of uncertainty by way of archipelagos of certainty. During the pandemic, the desire to know the exact nature of the virus, what lay ahead, and when life would return to normal was so strong that many, including our leaders, who are no better equipped to deal with uncertainty than we are, couldn't resist proffering knowing the outcomes despite being fully aware of the science that said we couldn't be too sure too soon. Keeping a level head during the pandemic required taking a page out of the book of the Stoic philosophers, who lived by a creed of controlling what we can control and on the reverse side of the coin accepting what we cannot change (and possessing the wisdom to know the difference between the two). Education is in need of Stoic wisdom.

The sixth lesson that Morin offers are about teaching understanding, which has a lot of points in common with the chapters in this book on empathy and compassion and how to change people's mindsets in order to overcome racism, xenophobia, and hasty judgement. It all culminates in the seventh lesson, which discusses Morin's "ethics of the human race" as a means to achieving what Morin sees as the two major goals of the new millennium: 1) true democracy in terms of real balance between

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collective interests and individual freedom, and 2) forging a global, human community.

The other figure who has had a predominant influence on my outlook is Enlightenment philosopher-mathematician Nicolas de Condorcet. His writings on free public education offer lessons and suggestions that remain as relevant as ever 220 years after he wrote them. He's not just impressive for being a paragon of Enlightenment thinking as a fervent abolitionist who also defended equal rights for women and minorities, but what he claims are necessities for a profitable life are for me canonical:

"Offering to all human individuals the means to fulfill their needs, to live happily, to know and profit from their rights, to understand and assume their obligations; to help each other and everyone to perfect one's industry, to be able to achieve social and political functions, to let flourish one's natural talents, and thereby establish equality between citizens: this is the first aim of national instruction and an obligation of justice for the state."[xiv]

In other words, the purpose of education, both public and private, is to help us find our *ikigai*. His vision of education started with everyone learning the same common base of knowledge to serve as a prerequisite for going above and beyond in higher learning.

The spirit of education Condorcet prescribes is to value benevolence over competition. "Human life is not a struggle in which rivals contend for prizes. It is a voyage that brothers make together: where each employs his forces for the good of all and is rewarded by the sweetness of mutual benevolence, by the pleasure that comes with the sentiment of having earned the gratitude or the esteem of others."[xv] Noble and sensible as it is, and old as

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it is for that matter, his prescription has yet to be carried out to the full in conventional education. Rather than fostering an environment of mutual emulation between students, we have the system of ranking them by grades. He held such systems with great contempt, saying, "The habit of striving for first place is either ridiculous or unfortunate for the individual in whom it has been inculcated. It is a real calamity for those whom fate condemns to live with him."

Condorcet seems to have been presaging what contemporary American political philosopher Michael J. Sandel laments in his book *The Tyranny of Merit: What's Become of the Common Good?*[xvi] According to Sandel, the meritocracy so many of us believe we live in is really a pernicious myth that only engenders arrogance on one side and resentment on the other. It's time we re-evaluated our notions of success and failure, says Sandel, by better accounting for the role that sheer luck plays in all aspects of human life in the hopes of establishing a culture of greater humility in human affairs.

Condorcet was a man of humility, making him all the more of a quintessential Enlightenment figure for us today. Father of the encyclopedia Denis Diderot was a contemporary of Condorcet, and his great work showed that the human mind on its own was incapable of grasping all fields of knowledge. This helped undermine the rote-memorization approach to educating in favor of fostering the critical faculties in students and providing them with tools for understanding the world. Two and a half centuries on and with an ever-expanding breadth of knowledge in the world, the need for well-oiled, fully operational critical faculties is more pressing than ever.

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Science articles have increased by a factor of one hundred every hundred years since Condorcet and Diderot's time. There's absolutely no degree program out there that can prepare students to handle all the knowledge in the world. Edgar Morin adds his very valuable two cents to the conversation when he suggests preparing students at the youngest age possible to begin to make associations and draw parallels between different academic subjects, getting them acquainted with interdisciplinarity early on. The most valuable lesson of interdisciplinarity is developing the wherewithal to know when answers lie in another field or if they're yet unknown altogether.

This will at first sound overblown but hear me out when I say our survival will depend on interdisciplinarity. The physical resources our species needs and the knowledge necessary to provide for those resources are so expansive that we'll need mass cooperation and sharing of ideas to make it work. Researchers Maxime Derex *et al.* published a well-known study in *Nature*[xvii] looking at the effects of population size on cultural transmission. They found that once cultural knowledge became too complex for any one individual to master, it naturally gets split up into more manageable parts among the population. If, for example, you live on an island, fishing will be very important, attracting a lot of people to the trade. With more people fishing, cultural knowledge around fishing will grow more complex, which in turn will require more and more people to carry out the tasks of a complex fishing process. Everyone working in fishing has to cooperate in order for the cultural knowledge around fishing not to deteriorate. If it does, the population's survival may become threatened. Populations therefore need a balance of specialized

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and more menial labors, but everyone needs the skills to cooperate.

Today, that population is all of us, and our island is the entire globe. Global citizens need the skills to cooperate on a global scale. Fuse together Condorcet's common knowledge base and Morin's earthly identity and you get the sum total of the needs of our global citizenry. Supply-chain interruptions frequently prove to us just how globally interdependent we are, and what's more is there's no going back. Goods and services we rely on every day are the result of global cooperation. Just look at your smartphone. It was designed by engineers in the United States, South Korea, Japan, or Europe, manufactured in Asia or Latin America, and its most crucial raw materials are rare-earth metals from Africa.

Both a cuneiform tablet and a computer server are cultural artifacts of knowledge transfer. In the brave new world we now face, our tools for storing cultural knowledge, equipped with deep-learning artificial intelligence, will now begin to make their own decisions, decisions vital to our health and survival. I see as much peril as promise in the AI future.

Whether AI is being harnessed by a government, as in lethal autonomous military drones, or a private company, as in Uber's self-driving cars, the basic fear, barring malfunction, is a lack of transparency and accountability. Who writes the algorithms? Who decides the extent to which we depend on them? Who collects our data and to what ends? Is it possible to establish public oversight? Countries in the West are starting to come to grips with the danger of leaving these questions unanswered, and while the efforts to respond are, as ever, too little too late,

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many governments are at least showing a pulse. In their defense, part of the reason they can't respond in time is because the technological capabilities themselves progress at such whirlwind speeds that it's hard for anyone to really chart a judicious course of action.

Western democracies and capitalism are the fruit of the Enlightenment and the Industrial Revolution. In theory, both systems are founded on the belief that freedom is a prerequisite for a harmonious society. The freedom of the vote makes it possible to establish balance in the divergent interests across a population, and the free exchange of goods and services ensures provision of those goods and services wherever they are needed. Democracy is nothing to take for granted, and regulation is required in order to maintain it. There's the rub. In order to maintain freedom, we have to put one thousand and one constraints on it. In the French democratic motto *Liberté, égalité, fraternité*, (liberty, equality, and brotherhood), each one of these democratic virtues hinders the other.

The history of democracy everywhere has been beset by periods of decline, moral or economic, followed quickly by periods of progress. The setbacks have at times been unspeakably horrifying, as in the rise of the Nazis, but painting in broad brush strokes, the arc of the moral universe has bent toward justice in the democratic world, to paraphrase Martin Luther King, Jr. This is in large part thanks to improvements in quality of life through education and technology, but technology is now progressing beyond our cognitive capacities, and as a result the delicate balance of democracy is once again threatened. The universe of alternative facts on the internet undermines the voting process, reason no longer has the upper hand

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over emotion, and unbridled consumerism threatens our planet. While emotion is not something merely to be subjugated but rather channeled creatively, it's becoming more and more difficult to "know and profit from one's full rights and understand and assume one's obligations" in democratic societies, to quote Condorcet. Some thinkers, Harari among others, even go so far as to say it's futile to attempt rationally informed decisions when computers know more about us than we do and are designed to distort the decision-making process. We saw this in the Facebook-Cambridge Analytica data scandal. Many accuse political-consulting group Cambridge Analytica with interfering heavily in the Brexit referendum and Donald Trump's presidential victory in 2016.

By harnessing the power of artificial intelligence and data collection, governments and private interests have more access to people's private information than any past totalitarian regime or industrial monopoly could have dreamed of. And it doesn't stop at simply collecting the data for a rainy day. AI allows them to process and mine that data beyond any human capacity, making mass data collection a powerful weapon states and companies can use against us.

How can we democratize AI and use its strengths to our advantage?

The first challenge is looking under the hood of the data-collection economy and learning who owns our data and how it's used. When few can understand how data-collection algorithms work, as in the case of Facebook's programmers, it should be a red flag calling for implementing immediate oversight, especially when our

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information diet, mental health, and democracies depend on it. We need to make algorithms transparent, *i.e.* open source, meaning anyone can examine them and modify them as needed. Now don't worry, this doesn't require everyone becoming a computer programmer overnight. What we need is trustworthy, independent third-party auditors. Looking under the hood is an apt expression in this case, since we can draw a simple analogy with cars. Millions of people drive cars every day without knowing how a car engine works. Regardless, we have the option to look at the operating machinery when we want to, and there are third-party organizations specializing in motor vehicles who carry out audits on manufacturers in the interest of advancing marketplace trust. The manufacturers who pass the audits with flying colors attract more customers, and drivers can be happy with a superior product. It's win-win.

The second challenge for our future is harnessing AI to the mill of knowledge transfer and education, allowing all students, whether in school or not, to gather the best information faster than ever. Many are weary of AI because it's typically used to prey on potential consumers. Like in health, respecting privacy is indeed essential in education, which is why I think the use of training data, which feed machine learning algorithms, could be very positive. Using computer algorithms and AI to build education tools is called adaptive learning. It gives teachers a broad range of options for helping students and preparing lessons and homework, saving teachers time so they can focus more on one-on-one interactions with students. To me, AI's superior computing and data-storage capacities, able to learn about individual students

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and offer them tailored educational content, can only be beneficial for everyone involved. So long as the algorithms are open source and ethical, I don't see how it couldn't improve the education experience and connect students all around the globe.

Debate over education reforms can turn political very fast, and indeed it's not uncommon for politicians to get voted in on promises of education reform. On the national scale, it gets complicated trying to make federal policy square with each and every individual classroom across the country. What chance then do we have of moving from the national to the international scale? In a world where climate change threatens each one of us equally, every classroom in the world has to be on the same page. How do we educate in the Anthropocene? How can we unite classrooms to face down the crisis? It takes thinking fractal and acting viral.

What if we could create fractal global citizenship?

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What If We Could Create Fractal Global Citizenship?

The term fractal was coined in 1975 by French-American mathematician Benoit Mandelbrot, who described fractals as "beautiful, damn hard, increasingly useful." They're anything that appears self-similar at different scales, like Russian dolls or, for an example you may be familiar with, the Romanesco broccoli you see at the supermarket. The bud of Romanesco broccoli is made up of a series of self-similar smaller buds, each one composed of yet another set of self-similar smaller buds. What if we could somehow apply fractal structure to democracy, *i.e.* a democracy that functions in the same way at different scales.

In a way, we're already halfway there. According to Harari, informal democracy is the natural governance structure of small nomadic herders, which was only formalized in agrarian society starting in Athens, though arguably it wasn't a true democracy since only adult Athenian males had the right to vote. Over time, democratic rights were granted to larger and larger swaths of the

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population up to the present day with our national and transnational democracies.

Harari and others theorize that the growth of democracy correlated directly with the growth of communications, wherein the more information a society could disseminate, the more it could extend the franchise because it could trust that its citizenry would be informed. In order for citizens to make informed decisions, they have to have access to the information that's being debated in the halls of government. In ancient Athens, the debates only had to reach about 30% of the population (there were roughly 30,000 Athenian males), while today the internet has made it possible to have debates on a truly global scale. Digital technology came right on time considering the problems we face can't be solved by 30,000 people or even 300 million people; it will take all seven billion of us and counting.

EU citizenship has proven to be an important step in the development of democracy. Every EU citizen can enjoy the rights laid out in the Charter of Fundamental Rights of the European Union,[xviii] namely rights to dignity, freedoms, equality, solidarity, citizens' rights, and justice. These are the chapter headings of the charter in order, detailing every legal article applying to the EU's 445 million citizens, starting with Chapter I, Article I, Human dignity: "Human dignity is inviolable. It must be respected and protected," all the way to the right to the presumption of innocence in EU courts.

Going beyond national citizenship, you can declare yourself a global citizen, but you are endowed with no rights as such, namely the right to vote, as there's no global executive body or congress of the global population. The United Nations is the closest we get to such a body, but

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its members are not elected and it does not deal with the areas of commerce and global finance, which are tackled by the World Trade Organization, the World Bank, and the International Monetary Fund (though the UN is the parent organization of the IMF). Global governance is therefore rather fractured rather than fractal, leaving global citizens with no recourse to vote out ideas they don't feel address global problems.

It's important to remember that all democracies, global, regional, national, and local, operate on the basis of representation. Your recurring appointments at the polls put your candidate of choice in power, and when that person wins you hope he or she will represent your interests and values in the halls of government. Representative democracy is a relic of an era when information moved slowly and it was hard to organize mass voting on every individual issue. We had no choice but to endow elected officials with the power to represent us because there was no alternative. This system is inherently flawed in that truly representative democracy is impossible to achieve. For starters, there are structural biases that systemically underrepresent certain groups, typically the less educated, ethnic minorities, the poor, the young, women, immigrants, people with disabilities, etc. The second unfortunate structural flaw in representative democracy is that money often speaks louder than the voice of the people. In the United States, election outcomes are better predicted by those who raised the most money rather than those who do best in the polls.

It's time representative democracy stepped into the modern age using modern means of surveying opinion in real time. And this at every level of government.

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An easy place to start is ad hoc citizens' assemblies discussing specific issues, such as France's Citizens Convention on Climate Change, which lasted from fall of 2019 to spring 2020. A bit like jury duty, the Convention randomly selected 150 people aged 16 to 80 to represent fellow citizens in a direct dialogue on climate change with the French executive branch. These citizens deliberated and attended discussions over the course of several months, in the end submitting a total of 146 petitions to the executive, 78 of which got taken up in resolution 2021-1104 on combatting climate change and enhancing resilience to environmental degradation, which entered into French law on 22 August 2021. Of the petitions that did not get taken up, three of them were rejected outright by the executive while the rest were simply not addressed. Such a result can leave you seeing the glass either half full or half empty, and indeed many of those that attended the convention have been very outspoken about their disappointment. Then again, 78 of 146 petitions is pretty good, and one can certainly see the glass as, if not half full, then at least getting filled. Though not all the petitions were taken up, the convention helped to publicize the urgency of climate issues, and one survey showed that 70% of French people reported understanding climate issues better as a result of the citizen petitions. Many members of parliament and government ministers who groaned at the idea of a citizens' convention now want to implement them on a whole range of issues. Hélène Landemore, professor of political science at Yale University, is a proponent of open democracy and sat in on the Citizens Convention as an observer. She championed it as a major step forward[xix] in a shift toward more open democracy, the culmination of which she says would be a

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global citizens assembly on climate involving 1,000 people from every part of the globe.

Another easy in-road we can make toward open democracy is ramping up the use of civic technology, or civic tech. It's a way of using digital platforms to enhance dialogue between people and government at every scale and promotes more direct voting on issues up for debate. As a prerequisite, these platforms absolutely must be transparent and open source, with existing examples including surveying platforms allourideas[xx] and pol.is.[xxi] These two examples are very easy to use and are being adopted around the world by intergovernmental organizations such as the United Nations on sustainable-development proposals and the OECD on education proposals, as well as municipal governments such as in Calgary, Canada, on participatory budgeting and New York City on environmental proposals. Civic tech was perhaps made most famous by Audrey Tang, Taiwan's transgender Digital Minister. She was only 35 when she became Digital Minister, and in her tenure she has introduced a plethora of survey and petitioning software tools that have quickly become an integral part of democratic life in Taiwan. She says,

"People are free to voice their ideas, and upvote and downvote each other's ideas. But the trick is that we show people the main divisive points, and the main consensual points, and we respond only to the ideas that can convince all the different opinion groups. So people are encouraged to post more eclectic, more nuanced ideas and they discover, at the end of [the] consultation, that everybody, actually, agrees with most things, with most of their neighbors on most of the issues. And that is what we call the social mandate."[xxii]

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Civic tech is a means of thinking globally in order to then act locally, and it's extremely effective for combatting cognitive biases and manipulation because before taking the survey, everyone reviews a brief bulletin on the issue at hand provided in neutral language that is inclusive of all sides of an issue. It's lightyears more efficient than having to get thousands of people out to polls and having to count their paper ballots. All anyone has to do is simply pull out a smartphone and dive into the democratic process.

Participatory budgeting is a form of civic tech that's still in its nascent stages, but as seen in the cases of Calgary and New York City, a growing number of city governments are hitching their wagons to this method. The first city ever to undertake a participatory budget was Porto Alegre, Brazil, in 1989. It then took a while for the idea to grow on people, but in the past six years it's seen a surge of popularity. In France alone, 170 municipalities held participatory budgets in 2020. It's simply a form of direct democracy to complement participatory democracy, and the results in France show that citizens are most concerned about the environment. Most citizen budget suggestions were aimed directly at environmental concerns while the rest were related to environmental issues, such as fostering green urban development and mobility infrastructure like pedestrian zones, green spaces, birdhouses, etc. In true fractal fashion, the same is being tested at the regional level in certain provinces with, for example, participatory budgeting in regional high schools. The next challenge is harnessing these tools at the international level, the essential next step for tackling major environmental issues.

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A third in-road is less about state infrastructure, more so about mentality, something the Finns are pioneering called "humble government." It essentially consists of abandoning top-down management in government for a network model.[xxiii] It's something Finland started as a way to reform its national education system and later implement its health policy to combat Covid-19. The term "humble government" may perhaps sound like windy government speak, but in application it's quite radical and effective so long as four key "conditions" are in place in the policy-making culture.

The first condition is achieving consensus on broad framework goals and the values underpinning those, which is termed "thin consensus" due to the broad nature of this first step. Though it can sound vague, it's key to ensuring coherent policy across political regime changes. The framework goals are established through direct deliberation with citizens *via* an online platform rather than behind closed doors between politicians and lobbyists. A shared knowledge base is established to start debate, and according to the architects of humble government, the system feeds on exposure to opposing ideas.

The second condition, once framework goals and values are established, is delegating action to "key stakeholders," *i.e.* people in society well positioned to tackle a particular problem due to their expertise such as a teacher in education reform or a police chief in police reform. This is how to tailor national goals to local needs, and the decentralized nature of this step is its key strength.

Once the stakeholders are hard at work implementing framework goals at their local level, the third condition is an efficacious feedback loop that allows stakeholders

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to understand the real-world effects of the reforms as they get rolled out. This is where the word "humble" takes on its full significance. It's not simply a matter of evaluating performance, but rather it's about stakeholders getting smarter in the process, in large part through peer learning, *i.e.* comparing their results with their counterparts in other cities and communities.

The fourth and final key piece is allowing for a kind of permanent revision of the original framework goals in light of new events and information. In short, this is the scientific method applied to governance. In politics as in science, a culture of infallibility from the enlightened few leads nowhere. It's about consensus and constantly making efforts to revise the approach to perfection.

There's no reason why Finnish people should be more apt to practice humble government than the rest of us. One thing its architects stress needs to be adopted by every government as a central tenet "[f]or the government to [be able to] formulate policies that address the most pressing questions of the 21st century at the national level, it must first address the structural and cultural problems of its policy-making process." Every policy-making process gets mired in old ways of doing things. It's time to bring the process into the 21st century.

Citizens' conventions and town-hall meetings are more familiar ways of establishing governance goals, but when it comes down to political leaders delivering on those goals, something seems to always get lost in the wash. The role of stakeholders in the humble-government architecture act as a kind of bulwark against those losses because they function like an intermediary between politics and society. Another precious piece of

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the puzzle, peer learning, is more relevant to stakeholders than to politicians and beats systems of inspection such as school inspection, which are unidirectional, top-down assessments. They're void of listening or empathy on the part of the inspecting body, whereas a humble government requires empathizing and humility on the part of everyone involved.

The combination of civic tech, citizens convention, and humble government, implemented all the way from the municipal level up to the national and potentially international level, is how to structure informed, democratic decision-making built on shared, scientifically based data and knowledge. The feedback loop and permanent revision of framework goals make it a self-regenerating system, and when humility means listening to contrasting viewpoints and opinions, who could possibly be opposed?

To help us get to applying a fractal-democracy approach at the international level, a key piece to getting us there is fair taxation. Everyone provides revenue to their local and federal governments as well as the international organizations their country belongs to, e.g. the UN, the World Bank, etc. Taxes are central to any system of governance, but in democracies they take on a particular significance because they reflect how egalitarian a country is by the extent to which it shares wealth.

Global taxes such as the global minimum corporate income tax are decided on by intergovernmental framework agreements and help countries protect their tax bases by keeping corporate money out of tax havens. This and other taxes like it are the windfalls we need to build the global commons in order to fund research, provide access to quality information, and build collec-

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tive petitioning and decision-making tools. Money creation is another means of funding the global commons, although what I have in mind isn't printing money *per se*. The IMF can allocate to member countries something called Special Drawings Rights (SDRs), which is a kind of currency only issued to national governments to be used for investment. In my scenario, the IMF would function as a global central bank and issue SDRs in order to buy the intellectual-property rights of things like Covid-19 vaccines, digital learning tools, carbon-neutral technologies—things that will determine our future on this planet.

Having said all this, I'm fully aware that international financial institutions have controversial histories of negatively impacting the environment, safety, public health, and access to food in certain parts of the world. I'm also aware that participatory budgeting, when implemented, only ever applies to a minority of budget allocation. It's hard to imagine a world where 100% of the petitions drawn up by a citizens' conventions get taken up by a congressional bill. In Europe, our social progress is lagging far behind our economic progress. The Charter of the United Nations, a foundational treaty that prescribes peaceful settlement of disputes and social cooperation above all, our leaders all too often treat like empty words. Taking full account of every criticism to be laid at the feet of international institutions, it's a fact that without them, we'd never have seen the progress we have made in the last 70 years. The process of taking democracy from the Acropolis to the Americas was a long, often bloody struggle driven by technological innovation, but as it stands, hundreds of millions of people now live in prosperous, peaceful democracies all over the world. It just takes time.

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But in our current context, there's no time to waste.

Not only do democratic processes take a long time, but anti-democratic movements are rapidly on the rise, nationalism in particular. Nationalism anywhere is the seed of crimes against humanity and genocide because it seeks to draw a line between "us" and "them," often along racial and ethnic lines, leading to open discrimination and hatred of those deemed outsiders. Taking inspiration from Haidt's ideas of universal human community, there's perhaps an argument to be made for inclusive, ethical nationalism so long as no ethnic lines were drawn within the nation and other nations were looked to not as inferiors but as democratic partners. It takes, again, a view of "us" as the entire human race, not just those we're related to or who are within our community.

We're not the only species equipped to carry out democratic processes. Bees and ants are highly democratic creatures, as their livelihood depends on information sharing and even a primitive form of voting in which bees dance to attract other bees toward sources of food. Ants use pheromones to guide their fellow foragers to food sources. Even bacteria are wired with a kind of voting system, and not only that, they have a system for collective decision called quorum sensing. It's a special call-and-response communication device between bacteria in a colony that evaluates its population density in order to adapt the expressions of certain genes once a population reaches a certain size.

While primitive and without consciousness, these are democratic processes that have existed since time eternal. In the case of bacteria, quorum sensing was a kind of early social media allowing individual bacteria to

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remain in constant contact with the rest of its community, upvoting and downvoting to influence changes in group behavior. This communication system would make parties and coalition governance useless in bacterial society and, given the lethargic response times of our political parties and governance, social media may indeed make them obsolete. Democracy has to adapt to the new world of 24/7 communication and surveying. The *Gilets Jaunes* movement in France is a clear example of digital communication enhancing the democratic process on the ground, leaving those in office reeling trying to come up with a response. It just so happens that the Citizens Convention on Climate Change was set up as a measure to appease *Gilets Jaunes* fervor.

In southeast Asia, the Milk Tea alliance between Hong Kong, Taiwan, Thailand, and Myanmar is a protest movement of "netizens" using social media to push back against the shadow of authoritarianism in China. Unlike in China, it's typical to mix milk with tea in each of the countries represented in the alliance, thus the name. The values of the alliance are defense of democracy and rule of law, freedom, resisting Chinese expansionism, and the rights of these countries to choose their own political destiny. China's regional policy under Xi Jinping has been aggressive to say the least, riding on the momentum of China's rising influence on the world stage. The alliance's skirmishes take place online between the twitter accounts of Chinese government officials and pro-China trolls against Milk Tea-alliance netizens.

In the US, Donald Trump has been the biggest innovator of using social media politically, though his approach is coupled with traditional-media appearances

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on *Fox News* and other conservative outlets. It's his way of accelerating the pace of politics. But the other end of the political spectrum answered in kind after the murder of George Floyd and the ensuing waves of Black Lives Matter and solidarity protests.

Democracy was born from the Enlightenment out of a concern for fairness, undergirded by faster information transmission through the post and newspapers. But that original version of democracy could only remain viable for so long. The internet and social media have made democracy a round-the-clock affair. While there will be no changing the length of mandates in offices so that elected officials can have enough time to implement new programs, technology can help us forge a hybrid representative-direct democracy. If democracy fails to harness the power of the internet, it will lose ground to the bad actors and influences that have done so and will continue stoking the flames of resentment and outrage. Online voting is the first, easy step to take to get started. Does it not strike anyone as strange that we can pay our taxes online but we can't vote online? If the risk there is that elections could get hacked, is there not equal risk that cash transfers could get hacked?

In order for democracy to survive and thrive in the 21st century, it must become more direct, and at every level, starting with the community we live and growing all the way to the very planet we live on. There's been a great deal of research on direct-democracy tools and the conditions needed to make them most effective. We can make them work so long as we make sure the will of the people as expressed in their votes gets carried out in full. That's what gives people faith in the system and encour-

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ages more and more participation. The old hat of creating dummy councils to give the appearance of listening to the will of the people will not work. In fact it's counter-productive. The Finnish humble-government example shows that it takes not only adopting some experimental re-structuring of the policy-making process, but first and foremost a shift in mindset as well.

Making democracy more direct and more digital is the silver bullet to put an end to one of the greatest threats to the future of democracy, the low turn-out rates among 18- to 24-year-olds.

What if we encouraged the next generation to fight for new rights?

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What If We Encouraged the Next Generation to Fight for New Rights?

Women and minorities were the last groups to get the franchise. The only demographic left without citizens' rights are kids, who in the eyes of the state are citizens in the making.

The problem is that children and youths have great ideas about how to shape the future though policies that can be implemented today. Just ask the children in your community, they're eager for a listening ear. The "What If" chapter headings in this book were to an extent inspired by an event I was invited to take part in on French public-access television where school students were asked to prepare speeches promoting new ideas in society. They had to begin their speeches with a "What If" question. I was completely blown away by how clear-sighted and clever their ideas were.

When young voters refrain from voting, it's not because they don't care. This generation is immune to

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abstract notions of voting for civic duty. They only vote when they feel their vote can actually make a difference, impacting issues they feel strongly about: the environment, equal rights, feminism, etc. Their preferred way to make their voices heard is through grassroots initiatives and protests, which is the opposite of not caring about the democratic process. Society is still grasping around in the dark trying to figure out how to incorporate the younger generation and their preferred forms of political expression, but what's something we can do in the here and now?

Anyone's who's taken a French literature class might be familiar with 17th^Scentury playwright Corneille and one of his major plays, *Le Cid*, in which the young hero Rodrigue taunts his older nemesis saying, "Young I may be, but in the noble heart, valor's no need of years." Four centuries after Corneille, Alison Gopnik and other psychologists have shown that starting in early childhood till age five, children actually peak in creativity and ingenuity. No wonder children can be some of the greatest sources of entertainment we'll ever witness. Research shows that while children have brains equally intricate and powerful as those of adults, their minds and even their consciousness operate differently because they're not designed for the same tasks as adult brains. Many think of the process of maturing from childhood to adulthood as a linear progression, but it's more like a metamorphosis from a caterpillar to a butterfly, only in reverse, as children have lively attentions that wander about like butterflies while adults have attentions more like a spotlight, seeing the world inch by inch like a caterpillar. It's even been suggested

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that formal education cuts short childhood consciousness a bit too early.

"Babies and young children are the research-and-development division of the human species,"[xxiv] Gopnik has said. In her research, little children can solve problems that perplex even her Berkeley undergrad students.

The major education innovators, from Freinet to Montessori to Korczak to Jebb, all understood Gopnik's point, and this well before psychologists came around to support the view with data. Children are independent beings, so treating them as such with student-centered and collaborative learning is a winning bet and should be made available to families of all socioeconomic backgrounds. Alternative education is typically thought of as something only for rich kids, even though the alternative pedagogies developed by Montessori and others were born from their experiences educating the poor, the handicapped, and otherwise marginalized children.

Korczak perhaps went the furthest of them all in taking children's ideas seriously. He transformed the Dom Sierot orphanage he oversaw in Warsaw into a kind of republic for children, with its own parliament, court, and newspapers. Children gained the right to sleep in every December 21st to enjoy the full benefits of the longest night of the year, and in turn go to bed late every June 21st, the shortest night of the year. Some of his methods were so experimental they got him into trouble (with the children's court), such as when Korczak found out some of his orphans had snuck out at night, and rather than go after them to scold them, he chose simply to keep an eye on them all night to make sure they stayed safe. When the other children found out, they felt he was no less culpable

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breaking the laws of the republic as the kids were, and everyone involved in the escapade had to serve a sentence.

French historian Claude Lelièvre in his study of French boarding schools from the late 19th century has found documentation of just how harsh children are capable of being in student government. In the boarding schools he studied, upper classmen typically took on roles as monitors and disciplinarians, and some of the sentences Lelièvre has unearthed are enough to make one go a bit faint. We tend to think of children as going too easy on each other, but in fact it appears they're equally capable of doing the opposite.

Let's be clear, I'm not advocating giving children the same rights as adults. I'm advocating allowing them to practice certain citizens' rights in certain measures.

Ultimately, the goal should be to make children feel included in the human community and want to take the initiative to help others and learn that when we give we actually receive. The goal should also be to allow them to experience the institution of democracy at a young age rather than spend their days stuck in a top-down education environment.

If we were to put it to the children's court, it may even be decided that conventional education breaks the law laid out in the UN Convention on the Rights of the Child, namely article 12: "When important decisions are being made, you [the child] have the right to give your opinion and to be taken seriously," as well as article 14, "You have the right to think for yourself."[xxv] Article 15 even states that "You have the right to set up or join a group and to meet together." From this convention, children seem to have more rights than any of us, and certainly more

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rights than typical school rules make them aware of. The school rulebook focuses on dress code, behavior in the classroom and hallways, when classes start, etc., while the UN convention honors their civic rights, yet as far as the children know, these rights are somehow peripherally important compared to school rules.

In a way, the title of this chapter is a bit misleading. I'm not only advocating endowing children with new rights, but actually delivering on the rights they already benefit from by law. The city of Paris is taking steps in the right direction with city mayor Anne Hidalgo signing the Parisian Charter for Children's Day,[xxvi] which was drafted by a convention of nearly 200 children and young people aged 9 to 15 presided over by deputy mayor Dominique Versini. The text is based on the UN Convention on the Rights of the Child and lays out six demands that the children came up with: participating in decisions that concern them, being protected, living free of discrimination in all forms including for children with disabilities, participating in democratic actions for a more united world, and working to protect the planet. Each one of these refers to concrete actions such as making sure school zones are safe, teaching sign language in primary school, making sure all children have a roof over their heads and a healthy home, fighting against food waste, the list goes on. While the Parisian Charter is a wonderful initiative, it's yet to be enforced, which, should things carry on this way, may only disillusion these children who have been promised a voice.

Once a government or organization is able to guarantee children more rights, it's then necessary to be able to scale up the approach to spread it across the globe. Design for

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Change, the brainchild of Indian designer Kiran Bir Sethi, is one such scalable program. In its short lifetime, the program has been very successful everywhere it has been implemented, and a main reason for this is its simplicity. You can memorize its child-friendly framework almost as soon as you read it: Feel, Imagine, Do, and Share. The first step, Feel, is about seeing an issue that inspires you to want to make change; Imagine is about brainstorming ideas to solve that issue; Do is about developing a plan and implementing it; and Share is about taking time to reflect on the results. Kiran Bir Sethi believes in acting viral in an almost literal way when she advocates spreading the "I can" bug. Her framework is designed to infect children's minds with self-empowerment by turning their education experience into something of a laboratory experience in which you identify a problem, draft a hypothesis, experiment, and assess results. She started her movement in 2009, and in just 12 years her program has spread to 65 countries. Every year there's a global I Can Summit attended by children from all over the world, and at the time of writing 1,996 Design for Change projects in total are being implemented in communities all across the world. In Singapore, one class of secondary-school children are raising awareness about the negative health effects of smog in their community; in Denmark, a class of teenagers raised money to provide the homeless with clothes and blankets and even pay for shelter when possible; in Jordan, children found a way to reuse organic waste to create fiber for clothing; the list goes on and on.

This gives you an idea of what children's civic rights in action looks like. It's about treating children as the crucial part of the democracy that they are, taking their

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ideas seriously, and providing them with the most fruitful education possible. Equal treatment leads to better education. Getting kids to participate in democratic life leads to better education, which means greater participation in elections. Michael Bruter is a political-science professor at the London School of Economics who researches youth apathy in the democratic process. He's found that youths who abstain from their first two elections have an 80 to 90% chance of becoming chronic abstainers. That's to say if we can't get youths to vote early, we may never get them to vote ever.[xxvii]

No solution to the problem of youth democratic apathy and abstention is viable without input from children and youths themselves. As ever, top-down approaches from adults to children will only generate more of the same old thing that hasn't worked. Let's listen to Colombian child-rights expert Nicolás Brando[xxviii] and lower the voting age to 16 or perhaps even younger, considering that, as he has proven, there is no valid argument against enfranchising people under majority age. The major issues of your world are issues that affect them first and foremost because they will inherit our world and their livelihoods and life expectancy will be directly affected by the issues. It only makes sense to open ourselves up to their perspective on the issues. What if we gave children the right to vote starting at birth and let their parents act as a kind of trustee over that right until the child feels ready to participate in democracy. It will compel children to want to get involved at the earliest possible age and push themselves to understand the issues at stake in the election cycle.

Key to Brando's argument is drawing the parallel between the arguments used to disenfranchise women

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and minorities and those used against kids. They are: lack of sufficient cognitive development to make an informed decision, lack of experience in the world to understand the issues, susceptibility to manipulation, and throwing the democratic landscape out of whack by opening the franchise to millions of new voters. Perhaps you know an adult voter who's guilty on one if not several of these counts.

For decades, this was the old go-to reasoning to keep women, minorities, and the poor from voting, and Brando's counter to these debunked claims are solid. One, he reminds us that voting is an inalienable right, not a conditional license (It doesn't matter whether one is a professor of democratic theory, a potato farmer, or an elementary school student; we are all stakeholders in the decisions of our governments, and we all have the right to speak and vote on what our governments do.); two, he reminds us that expanding the right to vote opens up the possibility for new perspectives and perhaps even policy areas ("confining this right to adults gives an asymmetrical power to the older generations", particularly on subjects that will concern the young first and foremost such as the effects of global warming); three, he says political engagement is by its very nature an apprenticeship (having to vote leads to taking an interest in the subjects on which one votes).[xxix] Here at the Learning Planet Institute, we've seen firsthand how capable children are of grasping the major issues at hand. In one Savanturier school program led by Philippe Frasseto, his nine-year-old students made an entire MOOC on their own that talks about major environmental issues, and his students have expressed to me personally that they wish the voting age was as low

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as seven years old so that they could make more of an impact on the issues they care about.

Spurred by the urgency of the climate situation, some groups are finding workarounds to children's enfranchisement. I'm referring to children's political lobbies. One example from the UK is the Zero Hour campaign group that organizes gatherings at the UK parliament to lobby lawmakers to pass its Climate and Ecological Emergency Bill.[xxx] The likes of Radiohead front man Thom Yorke and director of Greenpeace Kumi Naidoo have publicly advocated for the group as well, but despite this star-studded backing, the campaign group doesn't rely on heavy funding to try to get lawmakers to look their way. Instead they ask children to write letters and poems addressed to the Earth and read these aloud in the Regional Council offices in London. As of June 2021, they got the bill to be presented and read in Parliament as Standing Order No. 57 aimed at requiring the UK to achieve its environment and nature goals through the establishment of a Climate and Nature Assembly that will advise the Secretary of State. The bill is currently waiting on a second reading in Parliament.

Children and adolescents are as capable as adults to be responsible stewards of themselves, others, and the planet. From the Zero Hour lobby to the Fridays for Future protests that have fomented under the leadership of Greta Thunberg, children are proving as we speak that they can and should be taken seriously. It's no longer enough to put a roof over our children's heads and make sure they're safe. They need access to the democratic process by participating in decision-making bodies that give them a voice on the issues that concern them more than anyone. We have to encourage them to fight

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for these rights, taking the children's republic that Janus Korczak prototyped in his orphanage over a century ago and making it a reality. Civic tech provides us with the tools we need to make it happen on a global scale, which will be crucial if we want to tackle the world's problems in a democratic way that truly takes everyone's opinion into account.

It wouldn't surprise me if many of you reading this felt all this was extremely unlikely to ever come to fruition, but let me counter that by reminding you how unlikely it was to found an Athenian democracy in the 5th century B.C.E., or have successful democratic revolutions at the national level in the US and France in the 18th century. France, more so than the US currently (which is the only country that did not ratify the UN Children's right treaty), is proving very fertile ground for children's-rights advocacy. If you're unfamiliar with the Ashoka organization, it's a group of affiliated social entrepreneurs who dedicate their lives to empowering global citizens to be change-makers in the world. Take journalist Elsa Grangier, for example, who's the country representative for Ashoka France. She started an initiative called *Ta voix compte* (Your Voice Counts) that seeks to give young people a say in France's 2022 presidential election through surveys *via* their web portal,[xxxi] asking them what they feel the important issues are and holding children's debates. The Learning Planet Institute teamed up with a select committee of 12 young people aged 15 to 23 involved with her initiative, hosting them on a Saturday at our campus for workshopping ideas to turn collective intelligence into collective action. This web initiative is a brilliant way to inspire children, adolescents, and young adults to make

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their voices heard on the issues that matter to them. On the heels of this and hopefully more initiative likes it, society can start to reconsider the place of young people in the democratic landscape and give them a voice at an earlier age, for our own good as much as theirs.

Impactful initiatives like this that give young people a voice are necessary for getting society to take them into account as we tweak the levers and wheels of democracy in the age of Covid-19 and climate change. Again, it's not about granting children the same rights that adults have but delivering on the rights they already are endowed with by law. While the future may look uncertain, we can look to the past with examples like that of Janusz Korczak to take heart about the possibilities and lean into a more democratic future. Childhood education is all about understanding what previous generations have passed down to us, for better or worse. Without fail, there are always key figures in that history who we identify with and who inspire us to want to do great things in our present historic moment. Admiration is a powerful tool for catalyzing action, and so often we're only given exposure to the same old figures to be inspired by. If you've ever visited Paris, there's a chance you visited the national mausoleum of "great men" (though six women are interred there), the Panthéon, where the likes of Voltaire, Rousseau, Victor Hugo, and several others are buried. What about the figures who've touched us in more personal ways who could never dream of national recognition?

What if we built our own pantheons? Or even created our own days of celebration for that matter?

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What If We Built
Our Own Pantheons and Created
Our Own Celebration Days?

Martin Maindiaux runs the NGO Enfants du Mékong ("Children of the Mekong"), which raises money and helps build schools and sustainable infrastructure in impoverished communities along the Mekong River in Southeast Asia. Dominique Pace co-founded the NGO Biblionef, which operates in over 90 countries providing impoverished children in slums and rural areas with free books. Sister Ventura is a Mexican Daughter of Charity who has dedicated her life to helping traditional pygmy communities in northern Congo thrive in the face of sprawling urban development. Devi Shetty is an Indian heart surgeon who found a way to cut the cost of coronary bypass surgery from $106,000 on average to $1,5000, making it more affordable for the communities he serves. All these heroes and many more are featured in documentaries produced by an equally awe-inspiring NGO, The Imagine Project, founded in 2010 by journalist

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Frédérique Bedos. The Imagine Project makes professional-grade documentaries for little to know money in order to raise public awareness about initiatives that don't have the budget to do so themselves.[xxxii] They use the UN's Sustainable Development Goals to help guide them when they're looking for documentary ideas.

While the rapid-fire listing of the names and initiatives above may have been a bit much to take in, we're of course not even scratching the surface of the incredible work past and present everyday heroes have pursued simply out of generosity and good-will with no expectation of receiving anything in return. Perhaps you're familiar with the honorific used by the state of Israel "Righteous Among the Nations" to venerate non-Jews who risked their lives during the Holocaust to protect Jews from extermination. Israel created the honorific in 1953 and some 28,000 people, together responsible for saving hundreds of thousands of lives, have been awarded the honorific title.

One such hero was Nicholas Winton, called the "British Schindler," but throughout his long life (he died in 2012 at age 106) hardly anyone knew of the rescue he had coordinated, evacuating over 650 children, most of them Jewish, from Czechoslovakia the night before the Nazis invaded. It was only 50 years after the war ended that Winton's wife discovered documents in their attic detailing the operation. "There are all kinds of things you don't talk about, even with your family," was his comment on it. "Everything that happened before the war actually didn't feel important in light of the war itself."[xxxiii] When Winton's wife made the information public, the BBC invited him to participate in a special report they were doing on his rescue, interviewing him before a live studio

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audience. Unbeknownst to him, the studio audience was made up of people he'd helped rescue. In the middle of the interview, the host off-handedly asks if there's anyone in the audience whose life was saved by Nicholas Winton, and the entire audience rises. It's incredibly moving. Google "Nicholas Winton BBC 1988," you won't regret it.

Paying tribute to the people who make amazing contributions to humanity is a fantastic way to build community and celebrate the good in the world. The French Panthéon has been around for 230 years. It gives France a sense of patriotic identity and perhaps to the wider world it offers a sense of Enlightenment identity by honoring the nation's greatest figures who championed Enlightenment values in their lives, but I think it's time we created newer pantheons, "living" pantheons that we can discuss in community with others. These will be truly democratic pantheons rather than patriotic ones. In our pantheons, we can treat the figures within them not as gods, like the Romans did with their pantheon, but as human beings, holding them up to scrutiny as times change.

The Learning Planet Institute has undertaken a major initiative trying to help build a communal pantheon we're calling the Open Pantheon. Eric Chérel, Gaell Mainguy, and Olivier Bréchard have designed an app that will let users pay tribute to inspiring figures from the past or present who have been pivotal in fostering education, culture, science, peace, and sustainability on any scale. The simple interface allows users to makes personal tributes to new figure they suggest, providing links to Wikipedia pages for other users to consult.

For a more democratic pantheon, there's need to be room for debate about certain figures in the pantheon.

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No human is infallible. In this regard we disagree strongly with the Catholic Church's doctrine about the pope's infallibility or inability to commit error. However, a little known fact: it's a pope we have to thank for the expression "devil's advocate," which was initially a clerical position Pope Sixtus V created in the Church in 1587 charged with laying bare the flaws and misrepresentations of candidates for canonization. The position still exists, today called the Promoter of the Faith, and following a decision by Pope John Paul II in 1983, the Church even solicits adversarial testimony from outside the Church. In 2003 when the Church was conducting beatification (the step preceding canonization) hearings on Mother Teresa, the late British-American columnist Christopher Hitchens, an outspoken atheist and fierce critic of Mother Teresa, was called in several times to be interviewed.

New democratic pantheons could also provide an opportunity to explore the different ways celebrated figures are perceived in different countries or in different communities in the same country. This new pantheon framework would also make it possible to get in touch with pantheon figures who are still alive and ask them to talk about figures from their own personal pantheon to help build the communal pantheon.

Celebrating heroes is common to all cultures throughout history for the very reasons that the Paris Panthéon still exists today. It offers a sense of community identity, gives us a shared history told through the lives and works of these people. But celebrating important figures gets dangerous when they get elevated to the position of gods and a cult of personality develops around them. The forum aspect of a pantheon is crucial for playing devil's

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advocate or, when necessary, seriously objecting to and being critical of the flaws in the life and work of a given figure.

Holidays and celebration days are basically an abstract version of a pantheon. I must say, I don't find customs and rituals in themselves particularly interesting. They're too often abused as a way of indoctrinating people, having them submit blindly to some force greater than themselves, typically communicated through powerful symbols. In the wrong hands it can go to extremes such as in hazing ceremonies where the purpose is to humiliate so as to make initiates submissive, or when customs are focused on leveling hate at group outsiders who serve as scapegoats in the given dogma. In the right hands, however, customs can be very positive and tee up group cohesiveness through a sense of shared identity. Think of local customs like parades celebrating cherished values and groups in a given community. These recall to everyone what it means to be a part of that community. Unless I'm mistaken, there aren't yet any global customs, *i.e.* customs that bring us together to honor our common humanity and take stock of just how rich this big human family is.

The closest we come to it are the Olympic and Paralympic Games every four years. Perhaps the most poignant aspect of that particular global custom is the ritual of the Olympic Truce, which dates back all the way to the 8th century BCE. Back then, no attacks were allowed on the city hosting the games, and likewise anyone visiting the city for the event, regardless of creed or affiliation, couldn't be attacked, the athletes first and foremost. As of 1993 the Olympic Truce has become law,

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with the UN passing a resolution for all member states to honor it for the duration of the games. Leading up to the Tokyo 2020 Summer Olympics, UN Secretary-General António Guterres issued a public reminder about the truce to all nations competing. "The Olympic Truce is a traditional call to silence the guns while the Games proceed," he said. "People of all nations can build on this temporary respite to establish lasting ceasefires and find paths towards sustainable peace."xxxiv

Those who don't care for sports can at least be thankful we have the games as a global custom with a history of peacekeeping. It only goes to show we should have more global customs just like it. Social media gives us the power to create new global customs to be celebrated everywhere at once. We can think of Friday for Future as a weekly global custom in which students around the world, led by Greta Thunberg, raise awareness about the dangers of climate change. During the first Covid-19 lockdown, the custom of applauding hospital workers every night was another international phenomenon that we all practiced, showing gratitude and honoring the value of sacrifice.

If there can be sports and math olympics, certainly it's not impossible to imagine a sustainability or activist olympics. Young people could form teams in their communities focused on tackling a local issue that falls under one of the UN Sustainable Development Goals. In the same way communities provide kids with opportunities to join sports teams and practice with coaches, they could do likewise with environmental and political engagement, working with an expert to guide them as they look for answers to thorny local issues. Each community could have several different teams competing for the best SDG

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project, winners of which would move onto the regional and national rounds all the way up to something of an international competition. Of course, competition in this context is to be understood not as the cut-throat kind but more akin to cooperation, a chance to bring ambitious and creative young people together to discuss ideas and projects. Judgement criteria could be the amount of research that went into the project, how scalable it could be, and how open source it is, which would make scalability easier. Outstanding communities that pull out all the stops to help their youth teams would likewise be recognized and rewarded for their great work in a way similar to how the Bloomberg Foundation awards the Champion Cities Award to cities innovating to tackle global challenges at the local level.

Creating a brand-new youth-development initiative takes time. In the short term, let's look at the UN's designated holidays, over 200 different days in the calendar celebrating various social values, from International Women's Day on March 8th to World Wetlands Days on February 2nd to declaring the year 2021 the International Year of Fruits and Vegetables. The problem is there are no ways to celebrate these days with a group or a community because no parties get organized around them, even though they're perfect opportunities for stopping to reflect on the issue the day honors and surveilling the landscape of projects in the works and actors moving heaven and earth to address the issue at hand.

UNESCO Director-General Audrey Azoulay and Assistant Director-General Stefania Giannini are working hand in hand with the Learning Planet Institute team led by Gaell Mainguy and Olivier Bréchard to set up the

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Learning Planet Festival around the UN's International Day of Education on January 24ᵗʰ. It's a way of putting our money where our mouth is and trying to create a global celebration around a UN-designated holiday. Because it's such a tall order, we're taking a special approach, working to fuse what are called "upperground" organizations, or major institutional players, in this case UNESCO, with "on the ground" actors who are already involved in existing local initiatives. Because we are the go-between for these two, we are technically defined as the "middleground" actor in this scenario, an essential cog in the motor of institutional creativity. Middlegrounds are spaces whose freeform structure allows for a lot of creativity from any of the agile communities we foster at the Institute or among the on-the-grounds we partner with. Middlegrounds cannot be run like factories or armies. The ideal middleground is like a public park. There are very broad guidelines for park activities and everything is open for use, and it's up to creative and ambitious minds to use the venue at their disposal to do things they wouldn't be able to do on their own.

Ours is the perfect middleground for fostering local initiatives to be scaled up to the global level and vice versa. In other words, it's a place where fractal can go viral and where ideas get transformed into projects, with real boots on the ground heading out into the community. It's where brain—the upperground—meets body—the on-the-ground—providing opportunities for interface with the underground (activists) and the general public. We launched the Learning Planet initiative with UNESCO in 2020. At its inception, we envisioned a long-term initiative that would bring engaged and driven people from

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all around the world into a global community with one another. From there, the possibilities are endless. As it's a festival, the first order of business is celebration: of education, educational experiences, and to continued learning no matter what stage of life you're in. But we certainly hope it doesn't end there. We want the celebration to function as a catalyzer for growing new ideas. To use the Design for Change framework as an example, the changemakers who meet through the festival can bring their minds together to first Feel or discuss issues facing education, then Imagine solutions by pooling together their rich and diverse areas of expertise and experience, then Do by carrying out an idea for change, and finally Share at the next annual Learning Planet Festival.

We have a lot of hope for the initiative. Just in our work preparing the festival, we've already encountered so much enthusiasm and exchange between on-the-ground actors from all over the world and the upperground partners. Our major focus is making sure the voices of youths are heard loud and clear, so we'll be organizing group reflections and committees using "what if" questions to add fresh and crucial ideas to the mix.

To get to where we want to go, we need to be able to dream big together, which we can only do if we have a means of sharing projects with one another.

What if we could create a GPS for dreaming big?

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What If We Could Create a GPS for Dreaming Big?

Martin Luther King, Jr.'s "I have a dream" speech may go down as the most famous oration in contemporary Western history. In its day, 1963—the height of the Civil Rights Movement—it voiced a generational struggle for equal rights. What's remarkable about the speech is how it continues to voice the needs of the continuing struggle for true equality and true democracy. The irony of course is that Dr. King delivered the speech in the capital of a nation defined by a dream, the American Dream. What comprises that dream? The answer is belief, affirmed and reaffirmed by a thousand and one stories of Americans who made that dream come true, many of the most vivid of these providing perfect source material for screenplays to be produced by Hollywood, the so-called Dream Factory.

The foundations of the US were laid by westward expansion (or conquest, however you like to phrase it) and filling up all the "open" land with immigrants from

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all over. For the first time ever, people who were at the bottom of their class in their home countries could change their fortunes through their own hard work and cunning. That's the American Dream. Though the US is one of the most unequal developed countries in the world with staggering income disparities between the rich and the poor, it's often the poorest Americans who continue to believe in and defend most fiercely the idea that theirs is a land of opportunity. My intention is not to make an example of the US, only to point out that belief in a shared story of greatness and a willingness to dream are extraordinary catalysts for moving mountains and achieving the impossible.

I'm talking about daydreams, of course, not the dreams of the subconscious floating up while we sleep. Aspirations, hopes, vision—these are the dreams I'm talking about. The kind of dream John Lennon sang about in "Imagine," quoted in the epigraph of this book.

"You may say I'm a dreamer
But I'm not the only one"

So, imagine… just imagine being able to get in touch with anyone across the globe who shares the same dreams as you. Not only can you get in touch with them, you can work with them to make those dreams a reality. Imagine a digital space where artificial intelligence catalyzes collective intelligence, where things can start digital and ethereal only to become concrete and real. I venture to call such a space a GPS for dreaming big.

Dreaming big is not about what will happen but what could happen. Big dreams become big realities when society responds positively to your dream. If my dream is a nightmare for others, I'm not dreaming big enough.

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Dreaming big is dreaming with everyone in mind, if nothing else to keep my dream alive, because purely selfish dreams can't get very far in this world.

When you open your GPS app on your phone, it shows all the different paths you can take to get from A to B. The dream-big GPS would show you the different paths to take to make your dreams come true and who you can meet to get you there. Perhaps it's likewise similar to Tinder in that it finds matches between people with common dreams who want to make their dreams a reality.

To build an app, you have to aggregate as much data as possible. In this case, that data is, well, dreams. From there, it takes organizing the different dreams and finding yours in the digital space. Luckily, we at the Learning Planet Institute have taken care of dreaming up the app itself. It's called WeLearn.

Our deep-learning WeLearn algorithm has read and memorized the entire Wikipedia encyclopedia in multiple languages. And it doesn't stop there. It's also stored every article ever published on www.theconversation.com and continues to store up doctoral theses, science articles, social-entrepreneurial endeavors, the activity of different NGOs, companies, students, and researchers based on recommendations by peers, and high-quality journalism based on peer review. That way, our algorithm is geared only toward the best peer-reviewed content so you can be sure the suggestions it makes are substantiated.

You can also feed the WeLearn algorithm articles and literature that you find informative and relevant to your dream. WeLearn will read it and automatically provide you with links to its sources or other related content either based on subject or author.

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Jean-Marc Sevin, the Learning Planet Institute chief data scientist who built the WeLearn algorithm, has already fed it this book chapter by chapter and stored every single reference we've made here as well as other related articles and content. It's all waiting there for you to explore. Soon, WeLearn will also be able to point you in the direction of related projects, connecting you with authors in related fields, peers, mentors, and people with complementary skillsets. It's to give you a map of your knowledge and show you related areas to explore so as to complement that knowledge. This same technology we use as a consulting resource for businesses and organizations that want to be able to map the areas where they've built up strengths and others where they've yet to test the waters. The algorithm can even help them define where it would be most astute to go next.

In order for WeLearn to help you start to map out your own project, just feed it a text you've written laying out your big idea, even if that idea is in a premature stage of development. WeLearn can connect you instantly to people pursuing similar projects and plug your idea into the vast universe of knowledge and projects out there, presenting you with a way forward to make your dream a reality. It's a tool for going from your personal vision to connecting with a collective of like-minded people with skills and experience to take you to the next step, and even help you go from the deliberation phase to the brick-and-mortar phase of taking your project out into the world. At a later stage in the algorithm's development, once enough projects have accumulated, it will be able to adapt civic-tech tools for even greater participation from the public and allow the community to expand.

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While it's algorithms that make a dream-big GPS possible, they essentially just amplifying things that happen in the world on a regular basis. In fact, WeLearn's programmer Jean-Marc Sevin and I connected because he heard me do a radio interview in which I was talking about wanting to build a GPS that could connect different projects and learners all over the world, but I hadn't been able to break ground on the project yet. Jean-Marc was in a master's program studying artificial intelligence and offered to come to the Learning Planet Institute to work with digital-team head Eric Chérel to make this idea a reality. I feel very lucky our paths crossed. The dream-big GPS has been brought to life and now that others can access it, my hope is that it will create hundreds upon thousands of similar connections between people with ideas and people with the tools and skills to get them done.

It seems to me that to get there we'll need to free our imaginations.

We need shared stories to inspire collaboration and coordination on a global scale. Then might we be able to change the world?

What if we could meet people who have the same "What If" questions as we do?

What if every one of you reading this book shared your "What If" questions with other readers?

What if this was all it took to start a Planetizen Revolution?

-7-
What If We Were the First Generation of Planetizens?

LEARNING PLANETIZEN MANIFESTO

We were all taught to be good citizens but were never asked to reflect on the historical and geographical limitations of the idea of citizenship. Compared to suffering under tyranny, citizenship is clear progress that has enabled access to education, arts, science, open debate and democracy, but citizenship has always been an exclusive notion. City walls separated insiders from outsiders. Furthermore, of those living within the walls, only those able to defend the city commons from external threats were eligible for citizen status, *i.e.* no slaves, women, or children. Nature was also outside of the walls and had to be exploited to create sustenance for the citizen population and make them wealthier.

During the Enlightenment, nation states devised a new citizenship, yet it remained exclusive. Once more, foreigners, the poor, slaves, women, and children were not considered citizens and thus could not vote and decide on the laws imposed on them. Citizens of imperial states competed to exploit nature and colonize other parts of the world to maximize their wealth. This engendered the slavery,

war, and overexploitation of natural resources that ushered in our current age of democratic, economic, health, climate, and biodiversity crises, none of which stop at the walls of any city. If the citywide and statewide levels are the appropriate scales for coming to democratic decisions on local and national issues, then in order to solve borderless crises, a larger planetary scale is needed, thus in addition to being local citizens, we all need to learn to become ethical, inclusive, and respectful *planetizens.*

Planetizens of all ages are learning planetizens because we can always continue to learn to (i) care for themselves, others, and the planet, (ii) work together to overcome personal, local, and global challenges (including the UN's SDGs) by mobilizing collective intelligence and technologies that can help us to become more sustainable, (iii) recognize our global interdependence, the limits of our planet, the vulnerability of our societies, and the complexity of our world, (iv) reflect on our past, present, and future, (v) be good ancestors to the generations to come, (vi) "planetize the movement," in the words of Martin Luther King, Jr., as well as our thinking, actions, rights, institutions, celebrations, and ability to decide together how on Earth we're going to live together.

The word "cosmopolitan" comes from Greek words *kosmos* meaning "universal" and *polis* meaning "city-state." So, a cosmopolitan is a member of the universal city-state? For a better understanding, consider the ancient Greek context the word comes from. Back then, your rights as a citizen, and therefore your identity, were derived from the city-state you lived in, *i.e.* Athens, Thebes, or other. The *polis* referred to in politics or "cosmopolitan" is not to a physical place but rather a kind of moral community the individual swears allegiance to, not subservient to a particular political order, religion, or culture, but a fellow-feeling with the entire human community at large. Literally, we can translate cosmopolitan as "a citizen of the world community."

Typically, cosmopolitan is synonymous with "worldly," either in the sense of well-traveled or feeling at home anywhere in the world. Of course, the two senses of the word are not mutually exclusive, but while the word derives from Greek, the great Greeks of Antiquity were anything but cosmopolitan - save perhaps Diogenes. As discussed in the introduction to this book, Athenians tended to only really care about other Athenians. The practical reason for that was because only Athenians were responsible for Athens commons, defending it from invading armies, carrying out the functions of its institutions, etc., and their great invention, democracy, was an attempt to create

collective governance to run the city. Perhaps a kind of original sin that would repeat in every moment of democratic history, Athenians devised their brilliant invention in a context wrought with hypocrisy and short-sightedness. They managed to conquer the evil of kingship while failing to conquer their own contradictions, granting equal rights only to some as opposed to all.

Today we cherish the ideals of democracy and democratic citizenship, but once we dig a bit under the surface, we see that its roots are somewhat diseased. Democracy was forged in city-states, and up until the modern era a city was circumscribed by high walls built to keep in resources and riches extracted from farmers and nature outside the city walls. Walls were built high to keep out enemy invaders, but during peacetime, the gatekeepers at the doors were on duty to keep out plaintive farmers, for the relationship between the city and outlying agricultural areas was not often one of peace and good fellow-feeling but rather one of squabbling where the dominant cities took advantage of farmers' lack of bargaining power to drive down crop prices and levy taxes on farmers to support wars and, ironically, greater urbanization. Another word derived from the Greek *polis* is police, thus we see how the concept of the city-state and being a citizen was tied up with exclusive rights defended by the state monopoly on violence.

A citizen is someone privileged enough to live within the city walls, but what if we could create a similar sense of kinship and belonging that applied to everyone on Earth?

What if instead of thinking of ourselves as citizens, we thought of ourselves as planetizens?

Planetizens are to the planet what citizens are to the city-state. In their discourse, the democratic revolutions of the

18th through the 20th centuries sought to establish universal rights, but in practice these were reiterations of old citizenship exclusive to one people and not another and only actionable across a limited territory. The issue of stateless persons we tend to associate with the late 19th- and early-20th century Europe—Marx, Nietzche, Hitler, and Einstein, all had stateless status at some point in their lives—but according to the United Nations High Commissioner for Refugees, at least 10 million people in the world today are currently stateless. Typically, these are people born to the wrong ethnic groups in the wrong state. Such is the effect of citizenship. In its very nature, it only applies to some, not all. It's high time we got beyond the limited scope of citizenship to something more universal. Meet planetizenship. With planetizenship, there are no wrong ethnic groups. With planetizenship, rather than granting community rights in exchange for defense against an external enemy, we can forget the notion of defense and war entirely to turn to peaceful endeavors such as global efforts to feed people, improve education and quality of life, clean up our ecosystems, and bolster biodiversity.

To restate the defining phrase of planetizenship, planetizens are to the planet what citizens are to the city, meaning that whether you are a human, animal, plant, anything on this planet, you are endowed with rights in our global community. As I've shopped this idea around with colleagues and friends, I get pushback in the form of one question in particular: why stop at the planetary scale? Why not extend the community to the entire galaxy? Or even to the entire universe? The reason is because planetizens, like citizens before them, are interdependent. Some may hear talk of a creating a global community and think it's just

more empty peace-and-love talk, but I urge you to consider the issue of cooperative, global interdependence as now critical for our survival. In the age of the first citizenships, what happened on one part of the planet didn't necessarily affect another. Only regions were interdependent, not the whole world—but today that's no longer the case. What happens to the Athabasca tar sands in Canada will affect Pygmy communities in the Congo. We can no longer afford to bury our heads in the tar sands, as it were, and pretend that we don't know this. In 1516, Thomas More wrote his work *Utopia* about an ideal island separate from the rest of the world, but today that island would be under threat from rising sea levels and hurricanes triggered by climate change. It's time to look to make a Planetopia because we're now aware everything on the planet is interdependent, whereas a Galaxatopia or a Cosmotopia seem to me as yet unnecessary. We're constantly discovering new extrasolar planets, but it bears no effect on our everyday lives, whereas when we discover new deep-sea gas fields, it affects us instantly. We can approach the question of community scale using Kardashev's model, who defined civilizations based on their amount of energy use. A Type I civilization can harness all the energy available on a planet, a Type II all the energy available from a sun, and a Type III all the energy available in a solar system. Though we continue to harness more and more planetary energy sources, we've yet to even reach Type I capability, so I feel it's safe to say incorporating a larger scale for our community is a question for another day, if we ever make it that far. Don't forget the Fermi Paradox, which states that with so many planets in the cosmos, intelligent extraterrestrial life should be in wide abundance when they appear not to

be detectable. This may be because civilizations fail easily, perhaps in the very way we're failing right now.

One of the defining features of humanity is that once we're aware of something, we're then morally responsible for it. Bacteria exhaust all their resources to the point of destroying the bacterial environment because they don't know any better. Through both science and our imaginations, often with aid from stories in books and on screen, we grow our awareness of the states of things and thus grow our sense of responsibility toward the world. In 2023, Eglantine Jebb's Declaration of the Rights of the Child will turn 100 years old and her legacy of putting children's right at the forefront of the international community's agenda is perhaps more ripe for discussion today than ever before. However, there is a hypocrisy to be noted in that legacy, and that is that the Declaration of the Rights of the Children were written by an adult and ratified exclusively by other adults. While no one is blind to the hypocrisy of men deciding women's rights (a hypocrisy Jebb knew all too well considering her romantic relationship with Margaret Keynes, John Maynard Kaynes's sister, was cut short due to social pressures), few see the hypocrisy of adults deciding children's rights, especially considering it's adults who will bestow on their children and grandchildren a planet in complete shambles. It's bewildering to think that adults alive right now are the only generation that will live longer than both their parents *and* their children. In honor of the 100-year anniversary, let's embrace the genius of Jebb's work and improve upon it by writing a new Declaration of the Rights of the Planetizen, wielding the tools of the internet age to write the document collectively, which means including children to write alongside us. Voices

from all across the world, each with his or her unique two cents to add, can be heard, regardless of nationality, creed, sex, gender, or age.

Jebb was a woman whose awareness of a problem grew to the point where she felt personally responsible for fixing it, and while drafting her Declaration was an important crucial step, it remained only so much spilled ink on a page until the League of Nations ratified her text in 1924 in Geneva. Setting to digital paper our vision for a brighter plan-etizen future is the first step—arguably the most important step—toward fixing this new problem we've addressed, but without official recognition from bodies of governance, it will only remain so much code stored on a server. To go from planetizens on the page to planetizens at the podium, we have a few options at our disposal. Perhaps the best place to start is by turning to individuals in the community who are already well versed in transforming communities and moving from "I-thinking" to "we-thinking," and from "we-thinking" to "we-all thinking." I'm referring to philan-thropists. We may be living in a golden age of philanthropy with new data-driven approaches to increasing the impact of philanthropic donations and efforts known as Effec-tive Philanthropy, mentioned previously. A key part of the planetizen playbook is using the digital commons at our disposal to effect the greatest change possible on the largest scale possible. Every cent counts, including your two cents, whether you contribute them intellectually or financially.

Mo Ibrahim is a philanthropist in today's golden age. He's credited with transforming the continent of Africa single-handedly by using his wealth to promote good governance. A Brit with Sudanese roots, he made a fortune in telecommunications in Africa, then sold the company

to create with the proceeds the Prize for Achievement in African Leadership, a program that financially incentivizes African heads of state to deliver greater health, education, and economic development for their constituents, as well as respect a fair democratic election process and constitutional term limits. Recipients of the award receive a gift of millions of dollars to keep governors from turning to corrupt practices to line their pockets. Ibrahim is one philanthropist among many who deeply cares about using every means at his disposal for improving as many people's lives as possible. I'm sure there's a number of philanthropists out there we can team up with to incentivize leaders in government at any and all scales to adopt the Declaration of the Rights of the Planetizen and deliver on its aspirations. The amounts will remain to be seen, but it's real action that's within reach and that can affect real change before our very eyes.

There's only one problem with today's philanthropy, and this is that all major philanthropists are males: Bill Gates, Warren Buffet, George Soros, the list goes on. While the female numbers may be modest for now, that number will soon multiply through a major windfall of inheritances over the next quarter century when some $72 trillion will change hands with 60% of it going to female inheritors. If only a handful of them become philanthropists, it'll be just what the doctor ordered for affecting real change, as with female philanthropists we can expect to see more concern for the future of the planet. Greater wealth in the hands of greater numbers of women can literally move mountains, or better yet restore mountain ecosystems! As discussed earlier in this book, women tend to get stuck with the lion's share of family responsibilities. With so many women

bearing the brunt of ensuring the family's well-being and guarding family resources preciously so that the children always have enough, we can only imagine what women with historically unprecedented amounts of wealth can do to guarantee resources for the human family.

For a preview of what to expect from the coming age of female philanthropists, we can look to American novelist Mackenzie Scott, ex-wife of Jess Bezos. Over the two years of the Covid-19 crisis, her charitable giving amounted to upwards of \$12 billion, targeting not only organizations that help families bear the economic burden of the pandemic but also historically black colleges and universities and tribal universities, Planned Parenthood, Big Brothers Big Sisters, organizations promoting women's influence, social entrepreneurship and more. The signature of her philanthropic efforts is turning the focus away from herself as the giver and onto the associations she wants to promote. One of the ways she does this is, rather than following the typical philanthropy playbook of making a call for applications that makes organizations draft up how they'll meet the Objectives and Key Results she dictates—a process many NGOs find humiliating, not to mention tedious—she and her teams do the work of finding organizations she wants to help and offers them life-changing amounts of capital with few strings attached. Scott is only one example of a game-changing female philanthropist who knows that when children are raised in a nurturing environment, they go on to reconstruct those same kinds of environments in the future. It's not just about helping the planet now but planting the seeds for a greater world to come. Female philanthropists can help raise a coming nurtured generation of planeti-

zens who will strive in turn to ensure the security of the planet for the next generation and the next.

As we look back 100 generations to the Greeks and their narrow notions of democracy, we need philanthropists who understand the human family is not only 100 generations in the past but also 100 generations in the future—even 1,000 generations in the future. They could be among the first "good ancestors" that Roman Krznaric calls for in his book *The Good Ancestor: How to Think Long Term in a Short-Term World*,[xxxv] where he invites all of us to think and act in ways that positively impact future generations (more on that later). Let's honor the legacy of the Greeks and Enlightenment thinkers and improve on their restricted conceptions of democratic citizenship by ensuring a universal planetizenship for humanity's future. The Greeks had their agora, the public meeting place for spreading important information. Today's agora is the internet, and lest we forget that the agora was also oftentimes used as a marketplace, we too need be weary of the internet serving only commercial ends.

Talking about founding a global community takes on such epic proportions that even I get dizzy thinking about it. It's important to have tools at hand that keep one's feet on the ground, and for me that's the formula created by Kiran Bir Sethi, an Indian designer, educator, education reformer, and social entrepreneur. Her Feel-Imagine-Do-Share approach she devised for school children to help them develop projects to improve their communities, but I like to use her four-step methodology in my own work and I recommend it to everyone out there, children and adults alike. First, we *feel* there's a problem: for example, stopping at national identity and national laws is too restrictive,

and we see in the history of democracy that citizenship is a highly fraught concept. Then, we *imagine* a solution: we need to enlarge the notion of citizenship to be more inclusive, open it up like a tent canopy to allow everyone in, women and children especially. After that, we *do* something about it: we write the Declaration of Rights of Planetizens together, using the technology that each one of us wields at our fingertips to draft and edit the core beliefs and articles of the planetizen worldview, putting children at the forefront of the effort as they're the last to gain the democratic franchise and the first the suffer the consequences of a deteriorating planet. Finally, we *share* it: we try to find as many philanthropists as possible to incentivize leaders to ratify the Planetizen Declaration and produce real results in terms of giving children a say in the democratic process, retooling the democratic revolution to be more inclusive and more, well, democratic, using civic tech to make voting as easy as sending a text message on your smartphone— and many more ideas that we haven't envisioned yet simply because your voice hasn't yet been heard.

Alan Kay once said, "One of the best ways to predict the future is to create it." Who's Alan Kay, you may ask. He's a computer scientist (and professional jazz guitarist) who invented the tablet computer about 30 years before the first iPad ever came out. In the age of big data, we can quantitatively simulate future events, especially future climate disasters, with striking accuracy. One of Kay's colleagues, Alyssa Goodman, astronomer and innovative-computing expert at Harvard, started the Prediction X project to map how civilizations have attempted to predict the future throughout history. There's no predicting what the future of democracy will look like, but we do know future democ-

racy can't reproduce the same errors of hypocrisy as past democracy. One way to think about the future of democracy is Game B, a scalable model for predicting potential forms of a future civilization or civilizations. Game B is opposed to Game A, which is the current civilization we're living in now, defined by asymmetries of power that create existential risks because of a global tragedy of commons. Game B looks to create omni-win situations through omni-consideration of people's long-term interests to work toward greater cooperation and health. In short, Game B is an infinite game where Game A is a finite game.

For a clearer idea of what that looks like, let's turn to a great civilization of the past. The Iroquois peoples traditionally call home the northeast United States. While Iroquois culture shares much in common with every culture, e.g. giving thanks to a creator deity for each day's sustenance, working the land, committing oneself to one's family, their culture has a remarkable feature called the Seventh-Generation Value whereby Iroquois chiefs act on behalf of those among the nation in the present and seven generations in the future. The thought is that the Iroquois peoples of today are borrowing the world from their progeny seven generations from the present. We see a similar inclination to act on behalf of future generations with the Welsh. Sophie Howe is the current Future Generations Commissioner for Wales, a position in Welsh government responsible for protecting future generations. In the rest of the world, the public puts pressure on leaders and those in government to act today on behalf of those from whom we're borrowing our time here, but in Wales, that public outcry is embodied in a single person. Rather than pressure coming from outside government, Sophie

Howe applies pressure from within, following the day-in day-out maneuvering of Welsh public bodies and flagging trends and decisions that fall short of Welsh sustainable-development principles. The importance of having an expert working on behalf of the public can't be overstated, as the commissioner can pinpoint which policy decisions are truly problematic and bring them to public attention.

When public leaders act with not only adeptness in public policy but mindfulness, it's reminiscent of an ancient ethical concept among the Greeks called *phronesis*. This much-debated word is most often translated as "prudence," but it has specific implications in the sciences and public leadership whereby consideration for the consequences of actions, a.k.a. *phronesis*, was a trademark of people of true wisdom. Unfortunately for our purposes, it was generally felt that *phronesis* cannot be taught, only gained through a sufficient understanding of oneself and through lived experience. In the effort to make children agents of their own political destiny by offering them more rights than they've ever had before, perhaps the one thing we can recognize they lack compared to adults is just that, experience, leading countless generations of adults to believe they can act on behalf of their children because they know what's best for them. Even Eglantine Jebb, when we look closely at her text for the Declaration of the Rights of the Child, is guilty to an extent of undermining children's abilities to decide for themselves. Every statement in her Declaration is in the passive voice: "The child must be given the means requisite for its normal development," "The orphan and the waif must be sheltered and succored," and so on. While nominally it is a list of rights of children, in reality it's a list of adult duties toward children. When a child

"must be given the means requisite for its normal develop-ment," understood in that statement is that adults will be the ones to provide those means. One idea for renewing Jebb's Declaration would be to work with children to apply Kiren Bir Sethi's Feel-Imagine-Do-Share approach to every article in it. Kids and adults alike could create works of art to illustrate the new Declaration articles that we could show in a Planetizen Art Gallery online.

That's just one idea. What are some of yours?

Now don't get me wrong, adult consideration for and protection of children are absolutely crucial. Increasing awareness of the Seventh-Generation Value and the Office of the Future Generations Commissioner for Wales are two key outposts in the modern landscape for defending of the rights of young people, but both are top-down in their approach, *i.e.* the same approach as tyranny and its many expressions throughout history, be that at the societal scale with tyrannical governments, or the family scale with old institutions like Roman *paterfamilias. Paterfamilias* gave the head patriarchal figure of a family the right to govern that family, including extended family, with no checks whatsoever on his power. In short, he had the powers of life and death over his family and the estate (which included slaves): the right to sell chil-dren into slavery, put to death handicapped children, compel marriages, punish adulterous wives, the terrible list goes on and on. It calls to mind something a legal scholar at Stanford once said to me, that the definition of law is essentially "a frozen balance of power." What if we could melt the current balance of power for something more fluid and adaptable to our current needs and those of future generations ?

The natural world is chalk full of examples of benevolent parental figures protecting their young. Look no further than elephants, which live by a kid of anti-*paterfamilias* wherein it's the family matriarch who is responsible for raising up to three generations of her progeny, only instead of ruling as an autocrat, she rules through care. She doesn't abandon handicapped children, but rather stays behind with underdeveloped young to bring them up to literal speed with the rest of the generation, taking extra time to teach them to walk, bathe, etc. It calls to mind Margaret Mead's assertion that the first signs of civilization in pre-history are not so much tools and weapons as healed and mended bones. Among the remains of competitive and savage societies, ribs were pierced by arrows and skulls crushed by clubs, but among the first human communities, suddenly we begin to see thickened bone growth over former fractures, pointing to an evolutionary paradigm shift. Rather than leave the maimed and injured for dead, early human communities found value in the personal sacrifice it took to care for the injured and restore them to health, which meant hunting on the individual's behalf, bringing the individual food, etc. What Mead shows us is that rule by care as opposed to rule by scare is what has kept our species thriving for eons, and if we want to have any hope for survival in the future, we absolutely must opt for the care route.

Consider the paradigm shift in our own time looking at society through the lens of the 5R's theory of systems. The 5Rs theory states that the heart of any system is interactions. Those interactions occur between actors assuming certain Roles within a network of Relationships governed by Rules. They depend on input of Resources in order to

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produce certain Results. Those are the 5Rs, and every one of them is in need of rethinking at our current juncture. The colonization mindset simply wants to look for more Resources to produce greater Results, creating conflicting Relationships, Rules of domination, and Roles of subordination. In some cases, humans are even seen as Resources in themselves. What if we could change Roles, Relationships, and Rules for better results, all while shifting to alternative Resources? Then we could re-establish cooperative Relationships rather than conflicting ones and Rules of distribution rather than domination.

Becoming a good ancestor is one of the crucial role changes we need to make. Roman Krznaric, whose book *The Good Ancestor: How to Think Long Term in a Short-Term World* I mentioned earlier, talks about how we've colonized the future by dumping our ecological damage onto it like a backwoods colonial outpost we hardly care about. Decolonizing the future means extending our idea of now to include the coming centuries in which a silent majority of trillions will be born. Drew Dellinger is a contemporary poet with a poem called "What Did You Do Once You Knew?"[xxxvi] in which he has a conversation with those future generations, which starts like this:

> *It's 3:23 in the morning*
> *and I'm awake*
> *because my great grandchildren*
> *won't let me sleep*
> *my great grandchildren*
> *ask me in dreams*
> *what did you do while the Planet was plundered?*
> *what did you do when the Earth was unravelling?*

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surely you did something
when the seasons started failing?
as the mammals, reptiles, birds were all dying?

did you fill the streets with protest
when democracy was stolen?

what did you do
once
you
knew?

As evidenced by Fridays for Future and so many other youth-led movements around the globe, we don't even have to have a hypothetical conversation with future generations in order to become good ancestors. We can simply listen to youths in our own time. Kzrnaric's book mentions hosts of movements already underway, from initiatives to give rivers and lakes the same rights as humans to a landmark lawsuit against the US government to secure rights to a healthy atmosphere for current and future generations and more. In the wake of the US government's weak relief response to Hurricane Katrina, social scientists from a number of different US government agencies developed a framework for leadership during crises called Meta-Leadership wherein each person at every chain of command has a leadership role to fill, and the crux of executing that role and understanding what's needed is the fostering of real, human relationships with interlocutors in every direction, not just top-down. Now is our time of crisis and it's on each one of us to become a Meta-Leader. It's time to, in the words of Martin Luther King, Jr., "planetize the movement," or in our words, become a planetizen. What's

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a planetizen and what does it mean to planetize? It's to realize, empathize, democratize, and catalyze on a planetary scale. As planetizens, we change how we look at ourselves, our past, and future in order to revise each of the 5 R's and bring us into a more ethical view of the world by taking more and more into account, not only children alive today but future generations; not only animals but plants, lakes, and the air as well. To be a planetizen is to see the world as a commons, not only a natural commons of water, biodiversity, and space, but a humanity commons of science, culture, and education, and a digital commons of the internet and Wikipedia. Planetizens want all these commons to flourish in open source so that each and every one of us will feel responsible for caring for these commons.

In short, to planetize is to feel oneself beneath the burning glare of the planet's eyes.

How would you introduce/describe yourself under the planet's eyes? Could you express it in a poem or another short summary form? I must warn you, I've never written a poem in english in my life, but being a planetizen means at times stepping our of your comfort zone, so here goes nothing:

Learning Planetizen Manifesto (Poem) : *"Learning to Planetize Under Planet's Eyes"*

Under the burning planet's eyes, fully knowing we need to empathize and planetize,
Move from Planet I's to Planet We, from the frictions of ego systems to flourishing ecosystems.

As friendly, fractal, fragile, fruitful frames of freedom take shape,
We learn to become engaged zen citizens, planetizens.

Conscious of our vulnerabilities and interdependencies,
We learn as we rise to the challenges of our time,
Caring for ourselves, others, and the planet.

Escaping the tragedy of the commons,
Learning to change the way we play our global game,
We define our planetizen rights and become response-able.
To be able to flourish in symbiosis with the inhabitants of our biosphere, noosphere, and digital sphere,
We nurture our inner and outer worlds, the planetizen commons we all have in common.
Our second lives started with a surprise,
So slow were we to realize we had only one,

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The awakening of our second Earth to symbolize
our planetary crisis.

When you see the space photo "Earth Rise,"
What does it epitomize?
The need to realize
That if were any bit wise,
We would deeply empathize,
Find ways to catalyze
Ways to renew our earthling family ties,
Understanding that under our beautiful skies,
Our ecosystems are our best allies.

It's time now to vocalize
Our need to enfranchise,
To truly democratize,
Make sure we learn to planetize
To become planetizens, the Zen Citizens,
Under wide-open Planet Eyes.

If and when you do write your own poem or summary, be sure to share it on your social media of choice using #planetize.

Conclusion

What If We Could
Share Our What If's?

Flore Vasseur is a French writer, journalist, and activist whose 2021 documentary *Bigger Than Us* recounts the stories of a dozen young people from different countries all over the planet pursuing major justice initiatives starting at the grassroots level. Vasseur is an activist giving voice to activists. Talk about thinking fractal and acting viral. While the pandemic has kept people rather shy about going to the movies, the film can hold its own among documentaries like Leonardo DiCaprio's *Before the Flood* and other star-studded features because it shows you in so many minutes everything it takes to make a real difference: the creative energy of young people, forging new stories to live by, creating pantheons that are closer to the heart, and finding ways to apply global initiatives at the local level and vice versa. At the end, the striking moral of the story is that in the face of seemingly insurmountable despair, it just takes one little activist to start

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in the direction of a better world, and soon enough you have more wind in your sails than you know what to do with. It's not pedigree that makes heroes, it's actions, the smallest among us refusing to roll over and instead doing what little we can, which soon enough becomes something very big. If you watched Derek Sivers's TED Talk "How to Start a Movement,"[i] you'll know that, as the old aphorism goes, the journey of a thousand miles begins with a single step. You start working on your initiative when one person notices and wants to join you, and soon enough another. Before you know it, you've raised a whole army.

What if... Does the formulation strike you as slightly dreamy and child-like? Well, that's precisely the point. If it's something a child can grasp, then it's not out of reach. It's as simple as changing the rules of the game. If things are done a certain way simply because they've seemingly always been done that way, what if we change the rules of the game? Especially if it makes the game fairer for everyone and inspires more and more people to want to take part.

The situation before the pandemic was already dire, with the climate crisis our biggest dark cloud on the horizon. Since the pandemic, things have been in full-on crisis mode, and in every possible way you can think of. Disparities in societies the world over have only grown wider, disenfranchising the young, the elderly, women, the underprivileged, the list goes on. A 2021 Kantar survey across ten countries shows that nearly 60% of young people aged 16 to 25 feel deeply anxious about climate change. "More than 45% of those questioned said feelings about climate affected their daily lives,"[ii] including

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whether or not they want to have children and if they feel they'll have the same opportunities their parents had at their age. More than half of those surveyed say they feel scared, sad, anxious, angry, helpless, or guilty, with less than 30 percent saying they feel optimistic. Some psychiatrists are even talking about a pre-traumatic stress disorder brought on by climate change, as they see increasing severity of anxiety and depression as the climate catastrophe unfolds before their eyes.

The world's major emerging economies such as Mexico and India are projected to suffer more scarring from Covid-19 because people in those countries aren't able to work from home, which will cause a drop in GDP that will decrease hard-earned gains in quality of life. We're seeing stronger and stronger warnings coming from UNICEF and the WHO warning of damage to the overall well-being of the global population; from the IPCC concerning climate change; and from the IUCN concerning loss of biodiversity.[iii] The time for collective action is now to ensure our own well-being not to mention that of future generations.

As a biologist, I feel particularly galvanized to act because these converging crises all involve the biological mechanisms of our world. As the director of a research and education center, I feel called to act because the solutions to these crises involve readjusting how we learn, gain awareness, and prepare ourselves to tackle the unprecedented challenges we face. The lockdowns gave me, as it did everyone, time to read or re-read the works that I've cited in this book and reflect on what the Enlightenment has handed down to us, hold those values up to the utmost scrutiny, and play devil's advocate because our Enlighten-

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ment values in practice have so often fallen short. Universal rights have for so long failed to be universal. Solidarity with our fellow countrymen and countrywomen regardless of class, race, and creed has so often hardly looked like solidarity at all. In the end, my belief was affirmed that the game we're playing is the right one, but the rules need to change, and changing the rules means questioning those rules, wielding "What If's" like so many slingshot stones fired at the Goliath world order, propelled through the air by examples of the fantastic work so many people of good will are undertaking in our world.

Like many of you, it didn't take a pandemic for me to wish the world were different. Covid-19 did not create out of thin air any of the chasms in inequality we're currently seeing widen. They've been there a long time, byproducts of our unbridled production and consumption, depleting natural resources and threatening the survival of the human race just so that a minority of the wealthy can continue to grow their profit margins.

More than ever before in human history, we need to change our mindset from supremacy as a species to clear-eyed humility about how much we depend on others and a healthy planet.

If you still don't think it's possible, give me one last opportunity to prove you wrong.

Let's say you're a smoker. Addiction to nicotine is a disease that destroys not only your own health but the health of those around you through second-hand smoke, and if you're someone who disposes of your cigarette butts on your lawn or on the sidewalk, you're poisoning your immediate surroundings. While it's by no means easy and may take several tries, quitting smoking is something you

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can do to improve your health as well as the health of the people and environment around you.

We talked in Part 2, Chapter 2 about anthropologist David Graeber, who unfortunately passed away in 2020, but whose 2018 book Bullshit Jobs[iv] was a real eye-opener exposing the ugly reality behind a cornerstone in our culture. A bullshit job is, like it sounds, a job in which our unique human characteristics don't matter and therefore doesn't enrich us personally, but for many people this is a mainstay of life. It makes people think life is a meaningless paper chase just to spend money mindlessly on products and services that superpowered AI gets you to buy. This is what's at the heart of our polluting society, and a growing number of people who see themselves as one of these cogs in the machine, who don't feel the need to develop personal skills because they don't seem to be valued anyway, are growing increasingly aware that this way of life isn't healthy for themselves and they're contributing to the degradation of the planet.

As a true anthropologist, Graeber looks at the history of communal living and shows that there's always been a certain trade-off between forced and freely chosen labor in the interest of the community, and that indeed there are opportunities for personal enrichment in our free time. The first among these is involuntary, *i.e.* sleep, which takes up a third of our lives. Equally involuntary and nonetheless enriching is daydreaming, which often leads to positive practices, artistic endeavors, and a desire to learn new things. All that remains are the activities that on their surface appear meaningless or unproductive, but which are so crucial to well-being such as talking a walk, meditating, and relaxing. These activities don't necessarily take into

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account the well-being of the larger community, but they make us more enriched members of that community.

The digital revolution hasn't changed any of the factors that structure society and our daily lives, *i.e.* markets, government, voluntary group activities, and simply choosing to pass the time however we like. The problem is that in the digital age, the notion of a personal choice gets a little complicated. Netflix CEO Reed Hastings has said that his biggest competitor is not Amazon Prime or Hulu but rather the activity of sleep. "When you watch a show from Netflix and you get addicted to it, you stay up late at night. We're competing with sleep, on the margin. And so, it's a very large pool of time.'" It just goes to show that what algorithms are designed to do is tap into as much of our available attention span as possible. When they resort to manipulative methods in order to win that time from us, free will becomes a much murkier concept.

Nobel Prize-winning economist Robert Solow is famous among other things for calculating that technical progress is responsible for about four-fifths of labor output in the US, yet digital tools don't show up in conventional productivity-growth metrics. The theories he developed helped illustrate how technology functions as its own kind of "invisible hand" in our society. Rates of loneliness and depression have risen at the same rate as advances in digital technology, and this is because digital interactions are less fulfilling than real-life interacting, a phenomenon analyzed in the works of Sherry Turkle and Johann Hari cited in Part 2, Chapter 1.

Are we still free when we're depressed and addicted to technology? For anyone who's ever had to go to therapy

for dopamine addiction from digital media, you know it's not as easy as shutting off your smartphone. Real chemical and self-image dependencies get generated that seem impossible to undo.

What if we could find time just to be with ourselves and understand our deepest needs? Think back to the *ikigai* and how truly connecting with the self is in fact truly connecting to others and our surroundings. There isn't one without the other. It's critical to reflect on what we want to do with our time on Earth, and not just in our personal lives but with our friends and communities as well, though this is decidedly harder to do because groups fall into habits that become automated and systematized. These systems serve short-term goals. There's often no sense of where things are headed.

What if we went about a systematic overhaul of our Enlightenment virtues? The youth in society are less weighed down by the past, thus it seems most obvious to start with overhauling how we educate youths. Education must be better adapted to facing the complex and rapidly changing nature of the world we live in today, and education should be geared toward solving the problems of our modern world starting at the local level. Education is most effective when real-world experience follows close on its heels and when students feel an emotional and moral stake in what's being taught. We should teach that what counts overall is action rather than passive knowledge and that through individual actions change is possible and worthwhile. Moreover, it's been shown that what children learn in school they often talk about at home, which results in families taking up issues that started in the classroom. As we all know, at least one of

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our parents is more willing to indulge us over another, so pressing them to be smarter and more aware of climate change is a means of making a small impact that, at scale, would be huge.

One of the major obstacles to effecting large-scale change is not so much a feeling of indifference as hopelessness that anything can really be done. It's the same feeling that keeps people at home instead of going to the ballot box to vote, a sense that their tiny individual contribution hardly amounts to anything and that change occurs too slowly. This is the psychological precondition in place that lets democracies drift into rule by strong-willed authoritarians, who more often than not win affection by placing blame for society's ills at the feet of a scapegoat.

Australian environmental philosopher Glenn Albrecht is an example of someone trying to get people to think critically about the world now that the Anthropocene threatens us with extinction. One way he does this is by coining a new vocabulary to talk about Anthropocenic realities, one example we discussed being "solastagia" to describe distress incurred by environmental degradation, namely nostalgia for how things were in the world before the Anthropocene. "Symbiocene" is another of his coinages describing the era that would ideally follow the Anthropocene in which humanity lives in symbiosis with the natural world. Corine Pelluchon is a French philosopher and professor I've had the chance to dialogue with, and she proposes reassessing the Enlightenment to serve and repair the world. She's an acolyte of Claude Levi-Strauss, who once described the animal kingdom as the most foreign thing imaginable to us, and she posits that this is the very

reason why it's so hard for us to live symbiotically with the animal and natural world. German sociologist and philosopher Hartmut Rosa offers up an answer to this quandary with his championing of the "post-growth" society that favors balance rather than increased development because the more we increase the pace of development, eventually we'll reach a point of no return where we won't be capable of less growth. Society tries to find stability by hurtling forward at the speed of light, but we need to look for a way to establish stability in a sustainable world.

Across the globe there's been a gradual decline in economic and demographic growth since the 1960s, and with this a relative reduction in the carbon footprint in manufacturing goods. The problem is that we continue to increase our carbon footprint because we consume more and more goods. While we're still far from a sober degrowth economy, namely as regards CO_2 emissions, we've been able to make some progress in the right direction. While it's still too little and too late, it's a sign that we can move in the right direction and that hope has a fighting chance so long as more and more people continue to recognize the urgency of the situation.

The 18th^Scentury Enlightenment came out of a parallel historical moment when development was accelerating at breakneck speed as religion got replaced by science. The benefits of this moment have been obvious, but the movement proved a victim of the historical moment it came out of, when notions of equality and solidarity were only granted to a select number of people. The Planetizen Enlightenment will not recreate the original movement so much as perfect it and grow its scope to account for developments in the modern world. Globalization, the

digital revolution, and the menace of the Anthropocene leave us no choice but to adapt how we live to go from oppression and depletion to solidarity and balance.

It's changing the focus from having to being, consumption to consideration, mastery over ourselves, our community, and nature to a master's degree in caring for ourselves, our communities, and nature, from oversimplistic explanation to vying with the world's complexity, from comfortably dwelling in what's known to boldly daring to explore the unknown, from excluding others to defining your community by inclusion of others, from competition to cooperation, from declaring independence to declaring interdependence.

This won't all happen overnight, but we can each play our little part in our own way. There exist major institutional proposals to bring about Symbiocene—the Green New Deal, the Green Marshall Plan, the Reboot the Future manifesto by Kim Polman and Stephen Vasconcellos-Sharp mentioned in Part 2, Chapter 3—that are simple, straightforward, and offer a framework that we can adopt right now. The Reboot the Future manifesto in particular offers a new Ten Commandments in a way to underpin a new kind of Marshall Plan based on the updated golden rule: treat others and the planet the way you would like to be treated.[vi] This book provides examples of many of those Commandments in action, namely 1. Love each other, 2. Care for each other, 3. Love our Earth, 4. Find more balance, 5. Empower our youth, 6. Educate, 7. Be global citizens, 8. Be good ancestors, 9. Build a Life Economy, 10. Work in partnership.

No one commandment is more important than another, though one of my favorites is 8. Be good ancestors. It's

a call to think of our time on Earth in terms of the old campsite rule "Leave the site better than you found it." We're temporary tenants of the planet and we should enjoy it but also take care of it so that future generations can enjoy it as much as we do. Urban life is growing more and more untenable and life expectancy for children and adolescents is decreasing even in the industrial world. We need to do a better job of giving future generations a chance to thrive.

Thankfully, there are so many initiatives out there that inspire us with hope. Scientists the world over, especially the youngest generation of them, are thinking about scientific progress and technological innovation in light of their environmental and societal impacts. Just as the business sector has social entrepreneurs who try to combine business and philanthropy, there are social scipreneurs who want to harness science and technology for the common good. Melanie Marcel and her organization SoScience[vii] work to establish standards of practice to build a bridge between science and social impact. Having had the pleasure of working with more and more young people involved in innovative approaches, I consider myself an optimist when it comes to the possibility of gearing science toward social good.

To get the many amazing initiatives already in the works to links arms with the bigger players in the fields, *i.e.* non-profits, governments, and international organizations, we need more and more middlegrounds and spaces such as makerspaces and labs where ideas become actions and people from all different backgrounds come together to construct their vision for the future. The 18th^Scentury had salons for discussing the ideas that brought about the

Enlightenment. We have our own third spaces to meet and discuss without things getting overheated and over-emotional and turning to vitriol.

The purpose of this book is to add to the discussion already underway. That discussion must open up to the whole world, which means I want to give you, the reader, the opportunity to make your own contribution.

What are your "What If" questions? How would you planetize under the planet eyes? What can you add to what's already been discussed here?

Join us on the platform linked at the end of the book to join a community discussion on how to build the future we want to live in.

Let's continue the discussion online, and perhaps even face to face when the time comes.

What if we could create a way to do together what's impossible to do on our own, but which we know is the best way not only to avoid the grim future we're currently headed for but to allow youths find the hope they need to steer us toward a new future?

What if we could live our lives the way we dream them?

What If We Could Express
Our Gratitude?
(a.k.a. Acknowledgements)

I have to say I've never been very good at expressing my gratitude. As soon as we learn to talk, our parents teach us to say, "Thank You," making gratitude much more about being polite than expressing a sincere emotion. While I still have a long way to go on getting it right, as I have to do with getting so many other things right, I've been able to make some progress through reading some of the greats. The stoics, who tell us to always imagine the worst in order to appreciate the best. Confucius, and his wise words about our second life. And the Ubuntu philosophy, cherished by the likes of Nelson Mandela, Desmond Tutu, and Barack Obama for its guidance in creating a culture of compassion, interdependence, and gratitude. The word Ubuntu is sometimes translated "I am because we are," though I prefer one of the variant translations, "I am thanks to you." Now that's an expression of gratitude.

The pandemic, its aftermath, the climate crisis, even the fire that started in campus housing at the Learning Planet Institute last summer (quickly put out by a student who

had her own fire extinguisher—thank you!) have likewise helped me to be better at expressing gratitude. When we take after the stoics and imagine the worst, it keeps us always mindful of how much we have to lose so we can rejoice in what life has given us. The pandemic threatened to put an end to the Learning Planet Institute, an institution that only in my wildest dreams could I have imagined being a part of, and it has made me so very grateful for all the creativity, community, and care that goes on here. I have to express my gratitude to everyone who has helped build it from the ground up. It wouldn't exist without the commitment of so many people, too many to list here. They are students, researchers, teachers, faculty and staff, masons, architects, partners at Paris City Hall, the University of Paris, the Bettencourt Schueller Foundation, and so many others who have contributed directly and indirectly to our story. In truth, I owe them so much it would be impossible to adequately express the full extent of my gratitude.

Once we become aware of how fragile life is, that nothing and nobody will last forever, only then can gratitude begin. It's when we realize that we are stardust, brought to life by some wild stroke of luck, and not only that but we have the privilege of living in awareness of it. We ought to feel gratitude for the dynamics of the universe and the potencies of life. While they can be as destructive as they are life-giving, without them we simply would not be here.

In the face of the duality of life, it's important to remember there are certainly things we can change, though it may take considerable effort and time to do so,

and things we cannot. The things we cannot change we can only hope to be able to accept with serenity. While I still have difficulty distinguishing between the two, and I still have a ways to go to work on my serenity, I am very fortunate to be surrounded by the right resources and people to make change, however large or small, and I am full of gratitude toward all those people who have been a part of the Learning Planet Institute projects that only a few years ago would have been impossible to even conceive. I didn't realize it until writing this book, but what helped us get to where we are now is we asked meaningful "What If" questions every step of the way and tried to answer each of those questions with a new idea, a new initiative.

Happiness tends be something we're not aware of until we look back on it. It's important to know our histories and everything that brought us to where we are now. I need to thank my parents, grandparents, and all my ancestors (all the way back to LUCA, our common ancestor). I've not only inherited their genes but some of their wisdom and example as well. In the acknowledgements to my first book Learning in the 21st Century, I was very detailed in my list of every single lesson I've learned from my family, so here I will be a bit shorter on family and a bit longer on those who have helped me write this book.

Writing a book like this is a way to take a step back from one's life work and one's journey while writing the acknowledgements is a way to take a step back from writing the book. The experience of putting this book together was very different from the first one because the ideas in that book had been churning in my mind for

years and years, at every educators conference I'd been to, every trip I'd taken to other universities, everything I'd read, and the experience we at the Learning Planet Institute have had getting it off the ground and giving it wings. My friendship with Emmanuel Davidenkoff was a major trigger in getting the book started because he agreed to interview me to get my ideas out and help me write the book that I'd had growing in me for so long.

It took so long to get that first book out. There were so many stops and starts and long discussions. The inspiration for this new book came to me in one night, and until it did, I had never considered writing another book. I remember it so clearly. It was in the middle of the night on 9 December 2020. I awoke with the idea for the hashtag #WhatIf. By the time morning came, I had a rough outline of the structure of a new book and knew what I wanted to talk about. The heavy lifting on a book doesn't start until rubber hits the road, or pen hits paper rather, and like so many of my other ideas, this book would not have been possible without a host of collaborators who helped me bring it to life. On the morning of 9 December 2020, I cast out my nets to those who had helped me on the first book to see who I could get to help me on a second. To my great surprise, everyone was on board, and they answered immediately, including Timothy Stone, who agreed to start translating this second book even before it was finished and who did once more a splendid job finding the best English-speaking references to contextualize the points I was initially making for French-speaking readers.

To go from asking the question "What if we wrote another book?" to the printing of the physical object you have in your hands "takes a whole village," each person

adding major contributions at every stage of development. Like the first book, this one owes its existence almost entirely to the professionalism and companionship of Emmanuel Davidenkoff as well as Philippe Robinet and his team at Calmann-Lévy. I'm so thankful to them for finding the patience and wherewithal to work with an author who doesn't quite fit the usual mode in that he can only work thinking outside the box.

From the loggers who provided the raw material for the paper to the booksellers who stocked this book on their shelves, the editors, proofreaders, printers, distributors, designers, lawyers, public-relations managers, and so many others through the entire publishing chain of development that I don't have the space to mention here, I would like to express my gratitude to them because they are the bridge between an idea and you, the reader.

One of my coauthors on a report we were commissioned to do by the French government laying out the learning-society future, Marie Cécile Naves, played an essential role along with Xavier Desplas to make our MOOC on building a learning planet. The MOOC presented ideas from the report and the previous book in a documentary format. For this second book, she participated in question and debate sessions with Emmanuel, and they interviewed me together to get the source material for the book. Marie-Cécile has also been a big contributor to the online journal The Conversation, writing articles that grew out of discussions we've had and looking at ways to best share ideas to give them the most exposure.

I also have to thank the readers of the previous book who offered feedback that I took to heart when going about this second one. I had the pleasure to meet some of them

in person, others wrote to me or contacted me on social media. Their encouragement, remarks, and constructive criticism are what made me feel good about taking up the pen a second time. I remember getting a big kick out of one reader who commented that the book should be covered by health insurance. For all I know, what she meant was that the book helped put her to sleep. Jokes aside, I appreciate all those who shared with me their reactions.

In a similar vein, the close group of people, too numerous to name here, who read and critiqued the early drafts of this book also helped a great deal and pushed the book forward. They know who they are and they know the great deal of gratitude I owe to them. Among them, I have to give special thanks to my father, who had the most comments out of anyone and helped me improve the book by giving it much more depth and richness. I also have to thank Angèle, Sophia, Bosco, as well as my sisters, uncles, aunts, and cousins for their abidingly strong presence in my life. I also can't forget the dearly departed, namely my mother. It's thanks to her that I have a will to want to make the world better, but she never allowed me to take myself too seriously. A mother's influence is so strong it even endures after she's gone.

In these pages I've named some of my colleagues and the people I worked with who push me every day to be a changemaker. In particular, I have to thank the people who enrich my life daily because we all share an office: Co-founder Ariel Lindner, Chief Facilitation Officer Jean Grellet, and Executive Vice-Presidents Bénédicte Gallon and Gaell Mainguy. Others who I dialogue with on a near daily basis will also know who they are and know how thankful I am for their time and friendship.

What started as the Center for Research and Interdisciplinarity in 2021 became the Learning Planet Institute. There's a lot that went into the name change. For starters, we decided our organization needed to put more emphasis on individual and collective learning in order to tackle the challenges of our time, namely those that threaten the future on this planet. We have opted to call ourselves an institute because institutes are symbols of excellence in research and training. We want to pivot toward a more international outlook whose title will make anyone and everyone on the planet feel they could have a home here. We want to be able to learn from everyone and mobilize collective intelligence at all levels, from local student groups to anyone across the globe who has a "What If" no one's asked yet.

Though we are looking to be more visible internationally and respond to ever-greater demand, we cannot and will not lose sight of our founding principle: working with learners and teachers to design research-based education environments where everyone involved can contribute to solving challenges. We will continue to combine inquiry-based learning and learning-society research to catalyze collective intelligence and artificial intelligence that benefits learners of all ages, working in collaboration with Challenge Institute partners such as the City of Paris and University of Paris City. We will create and build digital tools and remain open to collaboration across the globe in the framework of the Learning Planet initiative (#LearningPlanet) that we are growing with the help of UNESCO and hundreds of others partners. In addition to our more international endeavors and further developments in the field of artificial intelligence, the real new capacity we'll

be developing and rolling out is being a service provider to public and private institutions at home and abroad that want to become part of the learning society to better tackle the challenges of our time. The key to individual education is reflecting on issues, and the same goes for an organization or institution. Whether it's in a political administration or corporate management team, each individual involved has to continue to learn through feedback in order to become more adaptable. The president of Hewlett Packard illustrated the point best when he said, "If HP knew what HP knows, we would be three times more efficient."

One of the lessons of our experience publishing the first book was that reading a book is a solitary thing that doesn't really foster a community of readers. While they only last for a semester or two, Massive Open Online Courses (MOOCs) can foster a community through digital communication whereby anyone interested in the subject can easily share other online discussion forums and additional resources as well as contribute his or her own thoughts and ideas through the MOOC platform. Better still, MOOC communities can even come up with new ideas for new MOOCs. The enrollment numbers in our Learning Planet MOOC amounted to a mere third of the number of people who bought the book Learning in the 21st Century, even though the online exchange possible through the MOOC platform can make the reading experience so much richer. It is important, however, to note that MOOCs do have some drawbacks, namely that the community disappears once the course is over and you can no longer access the conversations and links shared on the platform once that happens. Many of the ideas in

this book were inspired by conversations in that MOOC, but I couldn't go back to consult the conversations.

To avoid those same difficulties in future, we've proto-typed a digital alternative of this book, code-named the MOOD for Massive Open Online Debate/Discovery, an online space for discovery and dialogue open to anyone who's in the *mood* for discussion of these ideas. We launched it in french first but we should have an english version ready. I have to thank everyone who helped build the project from the ground up, especially the first people who wanted to pitch in, Alexandra Laurent, Clémence de Robert, Éric Chérel, Iryna Nikolayeva, Marie-Cécile Naves, Olivier Bréchard, Pashû Dewailly Christensen, and Véronique Giacomoni. I invite you to join us in the MOOD if you so wish!

It's still in the drafting phases, but my hope is when it's up and running it will be a valuable resource for people. What if we could create a digital Agora or digital salons similar to those of the 18th century?

The MOOD is an opportunity to contribute to building a place for open and constructive debate on issues and that can foster communities of people seeking further engagement on the different themes discussed in the book. I want it to be a place where people can plane-tize, ask their own #WhatIf questions, build a commu-nity pantheon, discover new resources, places, events, inspiring people, and potentially in the long run foster new movements.

The space can only become more accommodating and better outfitted the more contributors there are. That's the power of collective intelligence, after all. It could be a place people turn to to host debates about other books or

films and documentaries for that matter simply because it's difficult to try to organize large group gatherings, which is as true of pre-pandemic times as it is now. What if we could create authoritative digital spaces? Authoritative is different from authoritarian, very different, since, etymologically, authoritative comes from the Latin verb *augere*, meaning to grow, to increase. What if we could grow together?

Last but certainly not least, I must express my sincere gratitude to you for taking the time to see this book through to the end. We'll be waiting for your "What If" questions and for your engagements as planetizens in the digital space. I look forward to seeing you there.

What if we could all create a community together?

What if we had a unique opportunity to dialogue about these ideas and find new ways to dream up the future?

Notes

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Part 3
Thinking Fractal, Acting Viral

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Conclusion

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A virus turned our lives upside down and shook our societies at the foundations. While every one of us was affected, the young, the elderly, women, and the destitute were disproportionately impacted, often dramatically so. The virus has forced us to face the music that scientists and philosophers have been hearing for some time now, that we are vulnerable members of an interdependent species reliant on not only our fellow human beings, but every living organism in the biosphere. This was the awakening of a "planetizen" consciousness that resulted from the experience of the pandemic.

This is a book of hope. It's a call to action in communion with others because alone we are nowhere near as strong as we are in numbers. What if the only thing keeping us from taking better care of ourselves, others, and the planet was simply a matter of coming across the right information to nurture our natural, cultural and digital commons ? What if we could renew the legacy of Athens and the Enlightenment— citizenship, democracy, science, culture, debate, and education—to build a new, more inclusive, more global, more ecological Enlightenment, a Planetizen Enlightenment, that would better equip us in the digital age to preserve our precious planet for future generations?

Drawing inspiration from real-world examples where collective intelligence has fostered collective action, François Taddei invites us to imagine a future in which knowledge is shared freely across the globe, there's no limit to the enfranchisement of civil rights, and everyday people can become «good ancestors» and craft the world the way they want it to be.

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François Taddei is a social entrepreneur, an evolutionary-systems biologist and educator as well as a researcher at the French Institute of Health and Medical Research (INSERM) where he was awared the Fundamental Research Prize. He founded the Learning Planet Institute to develop new ways of learning, teaching, doing research, and mobilizing collective intelligence to rise to the challenges of our time. His first book is called *Learning in the 21st Century*, also published by Calmann-Lévy.

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