

**The New Birth of
a Noble Democracy in America
and the Two Mega-Crises
We Must Overcome
for It to Happen**



THE
NEO
NAISSANCE

PETER WEDDLE

*“What we have to decide is,
what is at the heart of
our humanity that is
worth preserving.”*

BRIAN SMITH

Philosopher &
Professor of
Artificial Intelligence

THE NEO NAISSANCE

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of a Noble Democracy in
America and the
Two Mega-Crises
We Must Overcome
for It to Happen

PETER WEDDLE

This book is non-fiction except for Chapter 5: What It Will Be Like. In that chapter, references to real people, events, establishments, organizations, or locales are intended only to provide a sense of authenticity, and are used fictitiously. All other characters, and all incidents and dialogue, are drawn from the author's imagination and are not to be construed as real.

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There are three ways to start reading this book.

*If you're someone who wants to know what happens at the end of a story,
read Chapter 7 first.*

It introduces **The Neonaissance**, a new age which will, for the first time in human history, enable and empower every single person on the planet, first in America and then everywhere else, to live for and with the best of themselves – to enter the Age of Self-Ennoblement.

*If you're someone who likes to see a story unfold logically from start to finish,
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It summarizes the research and analysis that are laid out in the book's remaining chapters to confirm the reality of **The Titanicity**, an existential catastrophe that will soon slam into America, and what we must do to overcome it.

If you're someone who prefers an imaginative depiction of the future that could face all four of today's American generations – Boomers and GenXs, Millennials and GenZs alike – read Chapter 5 first.

It uses a technique called “**newsfeed realism**” to transform today’s headlines into a fictional but all-too-potentially-real portrait of what could happen in America if we fail to overcome **The Titanicity** and establish **The Neonaissance**.

No matter which way you begin, however, make sure you end at the After-word. It invites you to join a community of **Citizen-Activists** – the next of the greatest generations in America – who are rallying at **OneStoryForAll.com** and taking on the existential challenge of the Titanicity, who are forging a new and more perfect America in The Neonaissance.

Peter Weddle

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Chapter 1

Fire in the Hole

America the Beautiful

A strange thing happens when Americans travel abroad. When we visit other places and people, we often admire, even marvel at the beauty and accomplishments we see, and at the same time, we find ourselves touched with an unusual feeling: a deep appreciation for what we have in our own country. Americans don't take their individual rights and prosperity or the beauty and bounty of their land for granted, but we do sometimes work so hard and live so rapidly that we ... well, we overlook them. It's not until we're on a trip to some foreign land that we find ourselves with the time and the inclination to remember just how special this place we call home truly is.

It would be better or at least more appropriate, if we didn't need such prompting. If we naturally and regularly acknowledged the extraordinary gift we've been given as citizens of this country. America is sometimes described as a shining city upon a hill or as a land of opportunity, and it is both of those, to be sure. But just as important, America is the rescue dog of our planet. And, we should celebrate that too.

We are a jumbled-up mix of every race and creed, political view and intellectual gift, orientation and persuasion on Earth. And, in our more thoughtful moments, we recognize that *mélange* as both a value and a strength. Like rescue dogs everywhere, we are imperfect, so we sometimes scratch at our differences, but almost always, simply seeing the flutter of a red, white and blue flag is enough to soothe the

irritation. That simple piece of fabric proclaims, without reservation or modesty, the rarity of our breed. That symbol celebrates what we collectively hold dear, the transcendent promise of all of us.

What is that promise? What are the attributes we share as the rescue dog of nations?

First, we are loyal.

Though we do stray from time-to-time, we are instinctively bound to our ideals. We revere our rights to Life, Liberty and the pursuit of Happiness, and we cherish our heritage of doing whatever it takes to protect them.

Second, we are kind.

It is a part of our nature to lend a hand to people we have never met. We open our wallets and purses and volunteer our time and assistance whenever other Americans and even those in distant countries are in distress.

Third, we sometimes let our tail wag the rest of us.

We get so fixated on petty and insignificant voices baying hate and division in our public square that we forget to embrace and amplify the goodness being quietly perpetuated by the majority of Americans every day.

There are, of course, other attributes we share, but those are among the most important. This wonderful mutt of a nation embodies all of them and one more that should not be overlooked: we dawdle when we should be caring for ourselves. We are slow to correct historical injustices and to address present-day shortcomings in our society. We take too long to punish the corruption of villainous individuals and to root out the greed of overweening organizations. We have an immense reservoir of talent

replete with the innovation, imagination and wisdom of people from every country on the planet, yet we seem unable to marshal it unless and until we are faced with a crisis.

The track record is all too clear: there is no challenge that is too great for Americans. There is no crisis we can't overcome. That is not hyperbole or braggadocio. As history confirms, we have the capacity to be extraordinary. And yet, all too often, we hesitate. We reflexively shy away from taking the first step. Some terrible occurrence, some painful incident has to grab us by the collar and yank us to attention before we will leap into action.

Happily, this attribute hasn't harmed us irreparably or fundamentally altered the nature of our national experience, at least to date. We've been able to recover from whatever crisis we faced, whether it was an attack by external enemies or an internal disaster of natural causes. Whether it was Pearl Harbor or September 11th, Super Storm Sandy or the Thomas Fire. They may have knocked us down, but we didn't stay there – we got back up, and we responded. Before those crises, Americans were preoccupied and uninvolved; after them, we felt the resolute pull of duty and rallied to defend ourselves and to help others rebuild their lives. It wasn't always done right the first time, it didn't always redress the situation for everyone, but ultimately, our comeback did accomplish the goal. The actions we took ensured both our national security and our societal wellbeing.

There is no guarantee, however, that such a pattern will hold true in the future. It isn't etched in stone or embedded in the natural order that America will have the time to mount an effective response after the fact. Indeed, the jury is still out for the social justice movement, for America to finally and forever expunge its original sins, its slavery of human beings and their incarceration on reservations. It is also still out for the persistent degradation of income inequality and the blistering wound of high cost healthcare. These challenges and every other test facing the nation today are made even more difficult by the accelerating pace of change and the expanding

scope of its impact. The resulting fog of uncertainty and treacherous footing of the unknown now make waiting for and then reacting to crises a perilous strategy at best, the shortcut to a reduced and tattered destiny at worst.

Recovering the goodness of America – the majesty of its land and the beneficence of its opportunity, the things we remember when we're abroad – is no longer possible if we wait until doing so becomes imperative because a crisis has occurred.

Reaction is now insufficient to achieve restoration. America the Beautiful can only be preserved if we act in advance of a challenging situation. If we resolve to prevent it from happening in the first place.

Recognizing and adopting that truism has never been more critical than at this moment. Preempting the crisis is the only way to deal with a perilous situation that is already looming on the nation's horizon. This threat possesses the power to inflict permanent and profound damage on both the prosperity of this nation and the spirit of its people. If left unchecked, it will deliver an existential concussion that will cripple the experience of being American. And that terrible outcome will last forever.

Our duty, therefore, is two-fold: we must break through today's darkening confusion of rancorous voices and hostile intrusions and acknowledge the imminent peril, and we must establish a foundation from which we launch steadfast and purposeful action to prevent it. Only We the People can do that, and we must embark on that campaign right now.

We must begin to reset the nation's future and, as recent events have made clear, we must do so while confronting and correcting its longstanding inequities and violent norms. We must commit to imagining a new land of opportunity but also to realizing a more perfect union. A brighter, larger, more welcoming city upon a hill. A bountiful and just United States of America for all of its citizens.

The Long Shadow of Yesterday

Today's America faces more political and cultural turmoil than at any time since the 1960s. That earlier period convulsed the country with the overlapping struggles of the anti-Vietnam War movement and the fight for universal civil rights. Those two crises pitted Americans against one another and against a government that condoned privileged access to citizenship even as it conscripted tens of thousands of the nation's youth to fight abroad for what it called the defense of democracy. America was – at one and the same time – strong and prosperous and inflamed with cross currents of division and bitterness.

Conventional wisdom and long-held assumptions were challenged and discredited, fundamental beliefs and cultural norms were mocked and discarded, and America's purpose and direction were questioned and assailed. Children revolted against their parents and refused to join the society for which they stood. Blacks confronted the white establishment and hammered at the chains of Jim Crow laws. Peaceful protestors and violent anarchists took to the streets against the country's elected officials and condemned their policies in southeast Asia and south central Alabama. College students cursed and spat at those in uniform and called returning combat veterans "baby killers." And rifles and pistols left campus greens, motel balconies, hotel ballrooms and motorcade limousines soaked in blood.

More than fifty years have passed, and those wounds in the torso of America's democratic compact have still not healed. They continue to fester and eat away at both our sense of ourselves and our resolve to live up to our better nation. They display themselves in any number of ways, but four stand out:

The Malignancy of Racial and Religious Intolerance.

Yes, we have outlawed bigotry and hate crimes, yet we still see swastikas painted on synagogues, nooses tied to the picket fences in front of African-American homes, and white supremacists marching in our public square as they brandish the Nazi salute.

A Refusal to Accept the Responsibility of Citizenship.

Oh sure, we no longer spit on our soldiers returning home from war, but we indulge in armchair patriotism, reflexively thanking those in uniform even as we urge our children to avoid joining the military or participating in any other form of public service.

Incompetent, Corrupt and Self-Serving Role Models.

Unquestionably, we are economically and militarily the most potent country on the planet, but we are continually frustrated and disappointed by the lack of courageous vision and principled behavior among the nation's corporate, political, media and cultural elites.

An Abusive Economic System That Breeds Oligarchs.

Without blinking an eye, we tell ourselves that we are the land of opportunity, yet we tolerate and sometimes even celebrate the most perverse and unprincipled aspects of modern capitalism as well as the greed and self-indulgence of those who

manipulate the marketplace.

Today is just the long shadow of the country's splintering four generations ago. America in the 21st century remains a nation wracked by the cleaving differences between our ideals and our reality. The breaches have humbled us, angered us and reshaped our identity. They have soured our famed melting pot – that exceptional recipe of huddled masses and hardy pioneers – and curdled its promise. We the People now segregate ourselves by race, class, age, religion, national origin, political affiliation and a host of other factors. Then, we further alienate ourselves from one another by the news sources we trust, the online communities we join and the social icons we celebrate. And finally, we remain vulnerable to a novel virus that is both so transmissible we must distance ourselves from one another to remain safe and so wrapped up in the acrimony of our politics that we can't come together even to agree on how best to recover from it.

It is a toxic condition that leaves us lurching from one perceived slight to another, from one unkind or ill-intentioned act to another and, ultimately, from one despairing moment to another. We know it is happening, our days are darkened by its presence, and still, we seem unable to step beyond it. What was once a proud and confident beacon of democracy has been transformed into a restless republic uncertain of its own character or its destiny. Strength has become unpredictability; certainty has become posturing; and vision has become the siren songs of self-aggrandizing prophets.

The Exacerbation of External Threats

America isn't in a passing funk. It is sick with a potentially terminal cancer of national disunity. The disease eats away at our native strength and weakens our global authority. It overwhelms our public discourse and roils our individual and collective thoughts. It is a debilitating rot that, by itself, would be terrifying, but we are enduring it while facing at least three exacerbating external threats.

A Threat to Our National Security.

From an erratic, nuclear capable North Korea and a hyper aggressive, retro Soviet in Russia to religious fanatics in Iran and Saudi Arabia and an increasingly expansionist and militaristic China, America is surrounded by those who wish it harm and will take every opportunity to inflict it.

A Threat to Our Economic Leadership.

From state-supported technology theft, predatory commercial practices and currency manipulation in China to the mafia state and government-sanctioned crime-as-an-export in Russia, America's preeminent position in the world's economy is under assault by those who seek to suppress or supplant it.

A Threat to Our Global Standing.

From the anti-American culture prevalent in some of the organizations and committees of the United Nations to the manipulation of social media and the exploitation of free speech by Russian, Chinese, Iranian and North Korean trolls, America's values and intentions are being challenged and even repudiated.

The Cold War with the Soviet Union, the OPEC-led energy crisis of the 1970s, the challenge of Japanese manufacturing prowess in the 1980s, even that horrible day in September 2001 – not these or any other post-World War II challenge has left us so simultaneously vulnerable and threatened as we are at this moment. When added to our cultural breaches and societal segregations at home, the result is a noxious gloom that overwhelms both our traditional commitment to *e pluribus unum* and our can-do, never-say-uncle spirit. It darkens our sense of ourselves and our perception of the way forward. For the first time in the modern era, America seems uncertain and fragile.

True, many maybe even most of us go about our day-to-day lives, enjoying this or that activity, tending to this or that responsibility as if nothing has changed. But in those quiet moments we share with ourselves and our closest friends, when we pause and consider the state of our lives and our prospects for the future, we cannot avoid a thickening anxiety or shake off the sense that the country has changed and not for the better. We fear that it is no longer the place we once thought it was. We worry that its vibrant hopefulness has been lost. That the Dream is over. The Grand Experiment has failed. Maybe not for ourselves, but almost certainly for our kids and grandkids.

We Won't Catch a Break

That noxious gloom of internal disunity and external threats is a dark and distressing development, but **sadly, not a singular one.** There is another force, another elemental shock niggling around the edges of our perception. It is still vague and ill defined, but we can sense it approaching us like some distant but undeniable fate. It prickles our ancient instinct for survival, it sends pheromones of alarm coursing through our veins. It is not clearly discernable, yet we know at some deep, atavistic level that it will be more momentous and calamitous than anything we have ever experienced. This implacable, impending new reality will permanently and profoundly change both what it means to be a human and what it means to live and work as one.

Not everyone accepts such a prospect, of course. Some simply don't believe in its possibility. It is too monumental and too momentous, too hyperbolic and too much like hype to be real. To them it's science fiction. Or worse, fake science. It's no more likely than winning the lottery ... three times in a row.

To others, more darkly, it is all too possible, but for that very reason, it is also too much to contemplate. America already has its hands full; the country is struggling just to deal with what's confronting it today. Having to face the future with an even larger and more destabilizing challenge would be asking too much. A task too great. And, fate doesn't pile on like that. At least not in America. We don't get hit with such back-to-back crises.

But, we can. And, we will.

The country is not going to catch a break or even get a breather, either from today's seemingly endless parade of problems or from the inchoate danger looming just beyond our clear perception. We will continue to face our internal struggles and external threats, even as we are forced to confront a new jeopardy – one that is far more dangerous and potentially disruptive than anything the nation has experienced since World War II. Like that great challenge, it will be an ordeal with existential peril. It will demand the very best of us and push us to our limits and beyond. It will test our spirit and courage and determine the future we will leave to our kids and grandkids.

The challenge for those of us alive today will not be to wage a war against tyranny, but to avoid the consequences of a brutal reordering of the American experience. It will not be to marshal our armed forces against distant enemies, but to find and follow a path that will outflank a point of no return here at home. This moment's call to greatness for Baby Boomers and GenXs and for Millennials and GenZs is to prevent the first surrender of America, not of its flag, but of the way of life for which it stands. It is to interdict and disarm a menace of epochal scale.

This clarion call is for each and all of us to do what must be done to deny the monstrous tragedy of **The Titanicity**.

The Titanicity

The Titanicity (tī tan is ətē) is, of course, an invented word, but it is one with real world connections. Its capitalization is purposely intended both to signal and evoke the memory of an epic disaster. Its root is designed to remind us of a tragedy that is etched into our collective consciousness. And, even its connection to cinematic fiction explicitly associates it with images of human terror and suffering. The story of the Titanic empowers the Titanicity to predict and define another event that will be similarly calamitous, but on a much more sweeping scale.

This new term denotes a point in time, not to indicate the end of something, but rather to mark the beginning of a passage, both for individuals and for the nation as a whole. Such designations are often characterized as a turning point – a situation that causes humankind to move in a new direction – or a tipping point – a development that represents the generalization of a new experience or value. Humans are masters of learning from their mistakes (if belatedly) and of resetting their conditions (if reluctantly) so as to improve their lot. Such shifts are familiar, comprehensible and understood to be a part of the nature of things. They are recognized as difficult and even painful transitions, but with benefits that are almost always significant and enduring. They are disruptions, but ones we do not fear and are practiced at accommodating.

The Titanicity introduces something altogether different. It identifies and po-

sitions in time a **point of no return**. Once it happens, it cannot be undone. It will be inescapable, permanent and deeply painful. Like a self-inflicted wound that never heals, it will lacerate both the reality and the essence of our lives.

The Titanicity is a moment in the course of human history beyond which everything is in turmoil, and that perpetual change is fearsomely harmful to the human species. It is an existential blow so profound and so unsettling, so intimate yet so universal that it resets the experience of being human. Even the chronological flow of time will be recalibrated, and people will characterize their lives on the planet as occurring BT – before the Titanicity – or AT – after that point has been passed.

No country, no economy, no political system will escape its impact. The Titanicity will sap the vitality and reduce the future of developed countries as well as those that are still emerging as modern nation states. This point of no return will be an all-inclusive phenomenon, a global incident that will reshape the quality of life for each person and every person on the planet. The Titanic disaster upended the lives of the 2,228 souls on board the ship as well as their families and friends. The Titanicity will disfigure the present and the future of all 7,600,000,000 inhabitants of the planet as well as their descendants. And, it will do so for all time.

This hostile event will not, however, be a worldwide big bang. It will not happen everywhere at the same time. Instead, the Titanicity will first unfold in America. The country's advanced technological infrastructure and its vulnerability to climatic disruptions provide the optimal fertile environment for its emergence. We, in a very real sense, will be Victim 0, the first nation to feel the impact of the Titanicity and to deal with its consequences.

The country's passage beyond this point of no return will slam our people with two simultaneous body blows. Americans will see intelligent machines terminate their jobs even as vicious storms and repetitious floods decimate their homes. They

will watch artificial intelligence eviscerate their careers even as tornadoes and forest fires reduce their hometowns to rubble. Americans will experience the Titanicity's capacity to inflict economic insecurity and societal impoverishment on a scale they could never, ever have previously imagined. And, their lives will be forever changed.

The Intersection of Two Crises

How can one situation, a single incident have such a devastating impact?

What gives the Titanicity the power to inflict both economic insecurity and societal impoverishment and to do so in a country as powerful as America?

Normal economic cycles or weather patterns don't provide an explanation. The Titanicity isn't simply an ordinary downturn in business. It's not just another recession, even a deep one. Nor is it a familiar kind of change in the weather. It isn't just a passing period of high temperatures and strong storms. It's not even the combination of two normalities, the simultaneous arrival of an economic rough patch and a bout of inclement weather.

No, the Titanicity is an abnormality created by the convergence of two abnormal events. These mega-phenomena are both far more pervasive and much more impactful than traditional economic and climatic disruptions. Their unending omnipresence makes them the day-to-day reality in every region of the country. In fact, both are already apparent to and, at some level at least, comprehended by many, maybe even most Americans. What hasn't yet been recognized is their intersection into a single, cataclysmic experience – the black hole of a point of no return.

These two mega-phenomena are:

The Technological Singularity – that point in time when technology, empowered with artificial intelligence, machine learning and neural networks, becomes forever smarter than humans.

The Climatic Singularity – that point in time when the earth’s climate, warmed by carbon dioxide, nitrous oxide and methane, becomes permanently harmful to the health and wellbeing of humans.

What makes these events so abnormally calamitous? What makes them each a national crisis and together a threat of existential proportions?

The dictionary definition of the word “singularity” is, in fact, relatively benign. According to *Merriam Webster*, for example, it simply means, “something that is singular, such as a separate unit [or] unusual or distinctive manner or behavior.”¹ In the last several decades, however, the term has acquired a number of very specific scientific and mathematical applications. Among these, the best or most widely known is probably its use with technology, in general, and intelligent technology, in particular. Indeed, the Technological Singularity has appeared in movies, books and even TV programs.²

Regardless of its usage, however, a singularity is now understood to mark a distinct, abrupt and massively consequential occurrence. It hurls us through a relativity shift to an entirely new reality for our species. We are no longer anchored by what we have always known, but are sucked into an unknown yet undeniably hyper-consequential state. Kevin Kelly, the founder of *Wired* magazine, goes even further. He describes the singularity as the point at which “all change in the last million years will be superseded by the change in the next five minutes.”³ Known becomes

unknown. Understood becomes bizarre. Comfortable becomes frightening. Certainty collapses and then disintegrates altogether.

A singularity is the present-day equivalent of the meteor that killed off dinosaurs 65 million years ago. Unlike that extinction level event, however, the Titanicity won't decimate humankind, but instead will permanently cripple and debase it. By layering two singularities into one devastating experience, it will fundamentally redirect the course of our lives, continuously corrupting and depleting them. Its perfect catastrophe of damage and disruption will extinguish the bounty and blessings of America's democracy and shatter the dreams and opportunities of its people. Once it occurs and forever after that moment, the Titanicity will maim the experience of being an American.

A Clear & Proximate Danger

Despite the magnitude of its impact, the prospect of a two-fold existential threat seldom gets any attention at all from America's elected officials, the politicians who are running for office or its citizens. The possibility of each of its two constituent crises is known but ignored. Not because their potential harm is discounted, but because the "conventional wisdom" considers them to be distant threats and therefore not a time sensitive concern to those of us alive today. According to this view, these dangers will appear so far in the future – they are such a distant and thus ephemeral possibility – that they are not a clear and proximate danger and, therefore, we need not rush to address and defuse them.

Take the fate of the dinosaurs, for example. Most Americans are aware of the mega-disaster that caused their extinction, but that outcome happened so long ago, it has lost its ability to frighten us. We can acknowledge that it happened, but not that it might happen to us. It's too much of a mental stretch to imagine yet another massive meteor colliding with earth and having a similar impact on our own lives. The lack of proximity provides a cleansing breeze of disconnection. The possibility of it happening can be accepted intellectually without also stimulating a feeling of anxiety or apprehension.

Similarly, an event that combines their fear of both intelligent machines and climate change seems so preposterous, so outside the guidelines of what we know and understand, that it feels more like the stuff of fantasy and make-believe than reality and an impending threat to our own wellbeing. We can even be deeply concerned about one of the crises and still not connect with the threat posed by its sibling. We can be climate activists and at the same time, be passive in the face of the automation of human work. Or, we can argue for remedies to the machine domination of the workplace while simultaneously ignoring the need for solutions to global warming.

Such views are today's norm. They are also fatally myopic. We may see these two events as separate and distinct but, in truth, they are intertwined and near-at-hand. They are a single, double tap of cataclysmic proportions that is just around the corner. Hard as it may be to accept, the Titanicity is neither a dark fairy tale nor a futurist's nightmare. It is neither imaginary nor hypothetical. Surveys of experts and the results of the research they've conducted make clear that the Technological Singularity and the Climatic Singularity will not only happen at the very same time, they will occur in the very near future. Indeed, the Titanicity will hit America within the lifetime of all four of its extant generations. For Baby Boomers, GenXs, Millennials and GenZs, it is one minute until midnight on the point of no return clock.

This meteor-like collision will set off an existential reversal that affects every American of working age today. The Titanicity will force each of us to endure a new normal that is unique to our specific generation but equally desperate for all.

Baby Boomers. If we were born between 1946 and 1964 and have a grandchild born today, that child will be about to complete his or her college or trade school education and enter the world of work, just as machines become smarter and more capable than he or she will ever be.

GenXs. If we were born between 1965 and 1980 and have a child born today, that child will have selected his or her field of work and be preparing to set out on their career, just as machines begin to take on more and more of the jobs in every profession, craft and trade.

Millennials. If we were born between 1981 and 1996 and are now well into our careers, we will reach the glidepath to what we expect will be a long and enjoyable retirement just as more severe and unpredictable weather makes it impossible to plan a sightseeing trip, a family reunion or even a day on the links.

GenZs. If we were born in 1997 or later and have now begun our journey in the world of work, we will enter what should be the prime earning years of our career just as a hostile climate disrupts business operations; destroys office parks, warehouses and production facilities; and strangles global and domestic markets.

The Titanicity will profoundly and permanently damage what it means to be a citizen and what it means to live and work as one in America during the lifetime of today's generations as well as those that follow them. To borrow from F. Scott Fitzgerald, this point of no return will be "a real dark night of the soul." It will mark an irreversible transformation of the country's economy and workplace; its landscape, urban centers and neighborhoods; its culture, values and prospects for the future. The Titanicity will be the beginning of a new abnormal for Americans, one that constricts and deforms their right to Life, Liberty and the pursuit of Happiness.

The End of Recovery

When the Titanicity occurs, it will mark a point in time when Americans will no longer be able to return to a way of life they have known since the earliest days of the nation. It will be an irreversible degradation of both their standard of living and their expectations for the future. It will introduce a darker and more trying life experience that cannot be remediated or resolved. In a very real sense, the Titanicity will represent the end of America's ability to recover.

The guarantee of recovery, with its implicit elements of hope and grit, optimism and determination, has been an indelible part of the American experience since Jamestown. That village, the first permanent English settlement in America, survived the death of more than 80 percent of its inhabitants two years after its founding and a fire that burned the entire community to the ground seventy years later. Each time, the settlers found the strength and courage to rebuild their homes. They recovered from those calamities, both because they believed they could and because, in fact, it was possible for them to do so.

That experience and others like it established a national faith – a credo of inevitability – and a “can do” spirit that powered our day-to-day behavior. At least among those who came to the country of their own accord, recovery was as much a part of being American as Thanksgiving. Indeed, that annual rite itself celebrates the

view that difficulties, setbacks and even the most devastating occurrences aren't to be seen or treated as overwhelming obstacles or insurmountable disasters. Instead, these situations are simply challenges to be overcome, and overcoming them is what we Americans do. We are grateful that we can, but we also believe that we will.

American history is a parable of recovery. The country recovered from battlefield defeats and the deprivation of Valley Forge to achieve independence in the Revolutionary War. It recovered from the death and destruction of the Civil War to reestablish itself as a more vibrant, if still imperfect union. It recovered from the financial devastation of the Great Depression and rebuilt its economy into the strongest on Earth. And, it recovered from its early setbacks in space exploration to take one small step for man, one giant leap for mankind on the surface of the moon.

This ancestry has been reinforced and brought home by the country's recovery from the innumerable natural crises that occur every year. We endure flooded streets when our levees break and forest fires when utilities don't take proper precautions; we are slammed by tornadoes and hurricanes and suffer through droughts and hail storms. And, we do not give up or give in. We hunker down and hang on, and then we pull together to help our relatives, our neighbors and even perfect strangers get back on their feet. We Americans don't just believe in our capacity for recovery, we embody it. We donate billions of our hard earned dollars and volunteer millions of hours of our time to get the process started, and we push our mayors and governors, our representatives in Congress and the President to finish the task and to do so quickly.

These experiences are now an integral part of being American. More than that, they have been encoded in our national DNA. They drive us to see our power of recovery as virtually unlimited. Americans believe in themselves as a "never cry uncle," "never say die" people – men and women who can get knocked down and always stand back up. Not to remain in place, but to move on. To begin again. And again, if that's what it takes. Recovery is a foundational element of who we are. It is

what makes us American.

It's difficult to accept, therefore, that the Titanicity will spell the end of that aptitude for recovery. Acknowledging this perfect catastrophe as a point of no return seems to give the event too much power, to see its impact as too consequential. And yet, that conclusion cannot be denied. The certainty of what lies beyond that trap door in our history makes such an outcome both terribly real and horribly inevitable. The Titanicity will introduce a very different and lesser way of life in America, and it will do so for every American man, woman and child.

A Tangled Knot of Despair & Misery

One half of the Titanicity – the Technological Singularity – will radically reset the world of work for all **Americans**. It will create a byte-collar workforce – tens of millions of super intelligent and super strong machines that can outperform even the best white- and blue-collar workers. The widespread application of these robots, androids and artificially intelligent systems – a genus best described as super capable machines or SCMs – will have two profoundly disruptive impacts on the nation's workforce.

First, it will set the United States on an inexorable and irreversible pathway to the irrelevance of human capital in the business sector. It won't happen overnight, but eventually smart machines will displace human workers, both in the jobs they've traditionally filled in virtually every profession, craft and trade and in the new jobs the technology itself will create. From mail room clerks to CEOs, from hospital orderlies to brain surgeons, from junior recruiters to Chief Human Resource Officers, from truck drivers and retail salespeople to college instructors and government workers, and from programmers and systems engineers to robot trainers and data scientists – the result will be the same. All will be terminated and replaced by SCMs.

Second, the widespread introduction of SCMs in the workplace will also extinguish opportunity for the American people and reduce the American Dream to a

quaint idea that future generations of kids will read about on their history tablets. All of the tools for building a successful career – a college degree, a facility with STEM (science, technology, engineering, mathematics), 60-hour workweeks, a jam-packed address book of contacts – as well as the characteristics of the hard-charger, the up-and-comer, the go-getter, even the quiet and dependable will no longer make a whit of difference because paid employment (and the standard of living it supports) will no longer exist. Human workers will be out of work and have no prospect of reemployment. The opportunity to be promoted, to experience the satisfaction of earning a raise and to feel the pride of being recognized as a valued employee – all will be lost in the ascension of intelligent technology.

At the very same time, the other half of the Titanicity – the Climatic Singularity – will create an environment that is less predictable and more hostile to humans than at any other time in American history. It will destroy the temperate climate Americans have counted on, indeed expected, as they built their hometowns, planted their fields and went about their daily lives. The Climatic Singularity will unleash an angry planet that will pummel Americans with one blow after another of excessive heat, unrelenting rain, destructive winds and encroaching tides. This new reality of perpetually dangerous weather will have two profoundly disruptive impacts on the nation's wellbeing.

First, it will undercut the commercial viability of businesses and disrupt the day-to-day consumption of the American people. It will destroy factories and office buildings, interdict supply chains and ruin the inventories of both transnational and domestic enterprises. It will leave grocery store shelves bare, retail shops empty and service stations out of gas, not seldom or even occasionally but over and over again. Storms will flood roads and bridges, subway lines and airports and other critical infrastructure and bring business travel to a halt. And, they will knock over cell phone towers, sever cable and electrical lines and make it impossible for Americans even to work remotely. Or, to shop online. The engine of American economic vitality – the enthusiasm of individual shoppers – will be shut down. Mother Nature will no lon-

ger nurture American prosperity, but abuse it.

Second, the unrelentingly hostile weather will subject Americans to near constant chaos. There will be more frequent and severe drought-fueled forest fires on the west coast and in western states; rain-driven floods in the Missouri and Mississippi River valleys; heat-induced tornadoes in the south and midwest; and gradient-energized mega-hurricanes along the east and gulf coasts. Melting sea ice in the Arctic will raise the sea level along the country's continental coastline as well as around the Hawaiian Islands, Puerto Rico and the U.S. Virgin Islands. Homes will have to be evacuated, personal property will have to be abandoned, and treasured heirlooms will be lost. Family birthdays and vacations will be disrupted and soccer matches and 4th of July parades will have to be canceled. And, unlike the much-anticipated recovery from the Covid pandemic, there will be no return to normalcy. Ever.

Together, these four impacts from two mega-crises will push the American people into near universal unemployment and near continuous ruination. They will plunge every corner of the country into economic insecurity and societal impoverishment. It will be an inescapably horrific experience that wraps every woman, man and child in a tangled knot of despair and misery.

An Existential Challenge

When the Titanicity arrives, it will test America and Americans just as they were tested during the last existential challenge to confront the nation. That crisis, of course, was World War II and the fight to save the American people and their way of life from fascism and totalitarianism. The so-called Silent Generation – the men and women who built the arsenal of democracy and battled foes in both Europe and the Pacific – established their legacy as one of the greatest generations in American history. They recognized the challenge, they found the courage to confront it, and they displayed determination and valor in overcoming it.

The Titanicity is the existential challenge of this time, this moment in American history. It is a similar threat to the American people and their way of life, but the campaign to turn it back cannot be waged in the same way. The Silent Generation defeated their existential threat as citizen-soldiers. They stood up to and vanquished the disruptive forces that were spreading havoc and harm around the globe. Today's generations, in contrast, will overcome this new threat as **citizen-activists**. They too will have to stand up to and overcome disruptive forces on two fronts, but those battle lines will be at home as well as around the globe.

Instead of fighting to prevent the spread of viral fascism and totalitarianism – aggressive forces that had already been unleashed – their challenge will be to preclude the Titanicity from happening at all. They will have to confront the human

impact of the Technological Singularity and the human causes of the Climatic Singularity in order to escape the double tragedies of human despair and misery that are the inevitable consequences of those phenomena. And, at the very same time, they must begin constructing an entirely new and radically different kind of economy and society, that together preserve the value of human work and protect the planet we call home. Both of these missions are imperative, and both must be undertaken before we cross that point of no return. With action prior to the Titanicity, victory is possible; with even herculean action after it, disaster is inevitable.

Action does not guarantee victory, however. The magnitude of the required effort is so great, the task so prolonged and unforgiving, only the full participation of America's current generations creates the possibility of such an outcome. There is no such thing as armchair activism, so each and every American will have to enlist in the struggle and join the campaign. We the People will have to do our duty, both as individual contributors and as a collective force that will not be ignored or put off. Wringing our hands and posting comments online are not enough. Holding conferences and marching in protest will not get it done. If we truly want to preserve America as a land of opportunity, as a place of purple mountains majesty and a fruited plain, as the living embodiment of Life, Liberty and the pursuit of Happiness, we will have to step forward and step up. We will have to act.

The impending arrival of the Titanicity presents each and every American with a choice. We can recognize and meet the challenge it presents or we can shirk our responsibility and put it in the too difficult or inconvenient to get involved box. We can preserve and protect the sanctity of the American Dream or we can abandon – or more accurately, surrender – the nation to a diminished future. We can practice genuine patriotism and create our own legacy of greatness or we can be known as the generations that did not measure up. That failed the country, failed themselves and, worst of all, failed those who followed after them.

The Neonaissance

The choice now facing America's four generations ultimately comes down to a single question: What kind of future do we want to bequeath to our kids and grand-kids? We can continue with the behaviors that have produced the Titanicity – the unconsidered introduction of SCMs and the unconstrained devastation of our home planet – and leave a legacy of despair and misery. Or, we can make the difficult decisions and take the uncomfortable steps required to change those behaviors and reset both the American world of work and the way we care for the Earth. We can invent a new American experience.

There is no minimizing just how tough that choice will be. It will force us to weigh life and business as usual against a future that is profoundly different and unusual. It will set up a stark comparison between the comfort and ease of what is familiar and the discomfort and even fear generated by what is unfamiliar. And yet, living with unfamiliarity is an integral part of our nation's genome. We created a democratic form of government that had never before existed among the peoples of the Earth. We explored and settled a new frontier and took humankind's first steps on a celestial body beyond our own. Americans don't shy away from the unfamiliar, but we do have to believe that the effort involved in passing through it will be worthwhile. We must be absolutely certain that the sacrifice and commitment required to tame the unknown will produce something better, far better than what we had be-

fore, than what we have known and accepted as America the Beautiful.

Establishing the world's first democracy created an imperfect union but one that was nevertheless devoted to Life, Liberty and the pursuit of Happiness. Settling the new frontier created a nation of almost endless bounty amidst a breathtaking tableau of natural beauty. Landing an American on the moon provided a glorious example of what can be accomplished when the power of science is melded to the imagination and courage of individual men and women. And, overcoming the Titanicity – eradicating forever the disruption and harm of the Technological and Climatic Singularities – will produce an extraordinary new era in history. By once again taking on the unfamiliar, by summoning our native fearlessness and drive, Americans will introduce **The Neonaissance** (neo nay sance) – a “new birth” for humankind and the opening of the Age of Self-Ennoblement.

This era will be founded on two historic commitments:

First, it will recognize that intelligent technology can only be introduced in a way that both improves the productivity of commercial enterprises and advances the quality of life for individual Americans if it is accompanied by a fundamental resetting of the country's economic and social structures.

The pace of development in intelligent technology will be too fast for humans to reeducate and reskill themselves for the new opportunities the technology creates. Indeed, the requirements and responsibilities of all jobs will be constantly in flux, making it impossible for workers to keep up. Employers will fill the vacuum with yet more SCMs, leading within decades to the end of paid work and near universal unemployment.

To ensure the American people can continue to meet their basic and psychological needs, the federal government will have no choice but to introduce a **Universal Human Initiative**, funded in large measure by a tax on the arti-

ficial intelligence systems that companies will employ to replace working men and women. This commitment will provide both universal healthcare and a universal income, not as a supplemental form of financial support – employer’s paychecks will have disappeared so there will be nothing to supplement – but instead to provide every American with a middle class standard of living as a right of citizenship.

Second, it will acknowledge that the continuing growth of the human population and the economic development of its communities can only unfold in a way that avoids irreversibly harming the Earth if each and every person works to protect and preserve the planet’s air, land and water.

The unabated pollution of the biosphere and in particular the accelerating rise of carbon dioxide in the atmosphere will provoke a new norm of severe weather, injuring or even killing millions of Americans and damaging or destroying their homes and businesses. The overheated Earth will also subject them to unending emotional and psychological stress as they are forced to endure erratic supplies of food and water and the ever-present threat of temperature-induced violence.

To repair the damage already done to the Earth and avoid the nightmare of a hothouse planet in the future, the federal government will have no choice but to launch a **Universal Earth Initiative**, funded by a carbon tax that penalizes planet-harming behavior as well as the increased tax revenues from higher productivity among SCM-enabled companies and a higher marginal rate for the wealthy. This commitment will introduce a universal service obligation among all young Americans to contribute to the planet’s defense by working on projects that will reduce global warming and preserve and protect the Earth’s natural beauty.

These two commitments will position Americans to achieve a heretofore un-

imaginable state. They will open the door to a possibility never, ever seen before in human history: **Unconditional Actualization For All.**

Just as Unconditional Surrender served as the vision for victory in World War II – the end state the country could respect and rally around – this ideal provides both the justification for and the final outcome of the nation’s passage through the challenge of unfamiliarity and change. It is the animating purpose and defining benefit of the Neonaissance.

The Renaissance looked backward to the ideals of Greece and Rome for its inspiration. Its philosophers and scholars, artists and sculptors took that earlier period’s concept of humanism and extended it to create the exemplar of a “universal man,” a figure of great intellectual and physical prowess. The Neonaissance will look forward to a greater perfection of the founding principles of the American democracy and thereby introduce a “noble person,” one with the drive to reach for the epitome of being human – self-actualization. The great artistic and scientific accomplishments of the Renaissance were produced by a select few. The extraordinary advances in every field of human endeavor brought on by the Neonaissance will be created by all the people of America.

To fulfill that role, to establish that legacy for our kids and grandkids, today’s four American generations will have to reimagine how we imbue our lives with purpose and worth. We will have to dedicate ourselves to the discovery and development of the talent with which we are each endowed – our inherent capacity for excellence – and to the application of that capability in the service of others and our home planet. Without the daily obligation of nonvoluntary work, we will be able to devote ourselves to missions we consider meaningful and important and from that experience we can attain fulfillment, the essence of self-actualization. That state is something only humans can experience. No other species and certainly no machine – regardless of its intelligence – can be fulfilled. It is our defining attribute, and it is what grants us our nobility.

Nobility in America, however, will be unlike that in every other country where it currently exists or ever has. It will not be reserved for some small and select group of people. It will not be defined by hereditary or bestowed titles. And, it will not wear a crown. American nobility will be self-defined, self-achieved and self-celebrated. By making the choice to overcome the Titanicity – by launching a campaign of both human and biospheric actions to resolve the mega-crises of the Technological and Climatic Singularities – **America will establish the first noble democracy in history**. It will open the Neonaissance as a time of fulfillment for all, an era when every man and woman is enabled, empowered and encouraged not to be simply who they are, but instead to become the best of which they are capable.

Chapter 2

The Technological Singularity

Very Vernor Vinge

Many people find it hard to believe there is something as consequential and potentially disruptive to human life as the Technological Singularity. After all, while it's rooted in academic research, the person who actually gave this event its designation was a science fiction writer by the name of Vernor Vinge. He is credited with using “singularity” for the first time in the January 1983 edition of *Omni* magazine.⁴ He then embedded the term in popular culture by including it in his science fiction novel *Marooned in Realtime* in 1986.⁵

Now to be fair, Vinge was an academician long before he was a creator of fictional tales. Nevertheless, it was he who linked the term to a profoundly frightening idea – that humans could create powerful machines that were more intelligent than humans themselves. These creations would be Frankensteins with super brains. They would emerge from their academic labs and geek garages and be both far stronger and infinitely smarter than humans.

As if that weren't disconcerting enough, futurists and scientists have now both sharpened the scope of the term – adding the adjective “technological” – and expanded exactly what it means for humans. For example, a 2012 article posted on a site called SingularityWeBlog.com, posits that there are at least seventeen definitions of what we now consider the Technological Singularity. They range from the notion

of a thinking machine, espoused by R. Thornton, an editor at the *Primitive Expounder* way back in 1847, to the dystopian rantings of Ted Kaczynski, the Unabomber.⁶

More credibly, there are three “schools of thought” that have captured the most attention and analysis. These schools and their chief proponents are:

Vernor Vinge, who associated the term with a definition that has come to be known as the **event horizon thesis**. It describes the Technological Singularity as the moment when “we will have the technological means to create superhuman intelligence. Shortly after, the human era will be ended.”

I.J. Good, who never actually used the term “singularity” but his concept of machine cognition arriving at a single point in time is often associated with it and influenced Vinge’s conceptualization of the development as a specific event. This view of an abrupt and disjointing shift in technological capability is called the **intelligence explosion hypothesis**.

Ray Kurzweil, who authored the book *The Singularity is Near: When Humans Transcend Biology*. In it, he made the case that the Singularity is “... a future period during which the pace of technological change will be so rapid, its impact so deep, that human life will be irreversibly transformed.” This view is referred to as the **accelerating change thesis**.⁷

The most useful definition of the Technological Singularity, however, combines all three of those concepts, for only then is it possible to grasp the full extent of its impact on the human species. This singular existential redirection will so abruptly accelerate the development and introduction of superhuman intelligence as to radically and forever change what it means to be human and how our species will live and work.

The Technological Singularity is an evolutionary step function. It defies the Darwinian notion of humans’ gradual adjustment to shifts in their environment

and circumstances and instead, shoves us headlong into an entirely new dimension of being. The Technological Singularity won't feel like – it won't express as – just another curve in humankind's course on Earth. It will open an entirely new reality so fundamentally unlike anything we have ever known that it will seem as if we have been visited by a superior alien race. Not one bent on our conquest or termination, but one that will reset our purpose in life. Not one that God created, but one that we ourselves invented.

How Will It Happen?

Given the momentous impact of the Technological Singularity, it's clearly important to know or at least have some sense of how we will experience it. That impact can either be positive or negative – it can either be a societal reset for which we are prepared, or it can be a societal shock that catches us off guard. The former is undoubtedly the best way to ensure that we actually reap the benefits of artificial intelligence, machine learning, neural networks and deep learning. The latter almost guarantees that those capabilities will produce unintended and potentially damaging consequences, no matter how potentially beneficial the technology's capability might be.

Ray Kurzweil, the Director of Engineering at Google, described the Technological Singularity this way in 2001:

“So we won't experience 100 years of progress in the 21st century—it will be more like 20,000 years of progress (at today's rate). The 'returns' [on technological development], such as chip speed and cost-effectiveness, also increase exponentially. There's even exponential growth in the rate of exponential growth. Within a few decades, machine intelligence will surpass human intelligence, leading to The Singularity ...”⁸

Kurzweil, himself, as well as numerous other scientists and researchers have now gone on record with their predictions of exactly when this momentous event will occur.^{9,10} The specificity of these dates and the willingness of respected technologists and academicians to announce them publicly underscore just how certain they are that the Technological Singularity – which Kurzweil once described as “a rupture in the fabric of human history”¹¹ – would indeed occur and be pivotal for humankind. It may be a sugar high in science fiction tales, but it will be a cataclysmic disruption in real life.

Moreover, the Technological Singularity is not the end, but the beginning of the era of technology’s supremacy. When it occurs, much of this country will continue to operate just as it does now. People will still go to the grocery store and take out the trash; they will still mow the lawn and clean their homes; and they will continue to fill the majority of white- and blue-collar jobs. Intelligent machines will have grown far smarter than we humans, but they will depend on our fickle and sometimes irrational decision-making to enter our social structure and workplace. As a consequence, it will take almost one hundred years for that transformation to reach its end state. Machine domination of human life – the radical reshaping of our society and economy – won’t be complete until the early 2100s.¹²

In today’s live-in-the-moment culture, the length of that timeline can make this prospect seem less significant, its disruption less likely. After all, a lot can happen (or not) in the course of a century. And yet, in historical terms, that date is just around the corner. Indeed, even in biological terms, it’s not such a distant horizon. Thanks to advances in medicine and changes in lifestyles, a child born today may actually be alive when the passage draws to a close.

They and their children and grandchildren and their families forever into the future will experience what the Technological Singularity unleashes. Once that point is passed, the momentum of AI-based change will be unstoppable. And, unless we prepare for it, the rupture in human history will become an endless tear in the

human soul. Intelligent machines will be liberated from the constraints of human values and conscience, as imperfect as they may be, and ever more rapidly design, develop and introduce generation-after-generation of ever more intelligent machines. The end state of that warp speed techno-evolution will inevitably be a radically altered life experience for humans.

When Will It Start?

As the pace of intelligent machine development accelerates, there is a growing consensus about the start date for the Technological Singularity. Surveys indicate that scientists, researchers and academicians now see it as likely to occur within the lifetime of many of us. For example:

In 2017, the report of a survey conducted among 352 published AI researchers attending two international technology conferences identified 2061 as the most likely date for when there was a 50 percent chance of achieving human level intelligence in a machine. However, among Asian researchers, often thought to be at the forefront of AI development, the projected date was much earlier, in 2046.¹³

A 2018 survey conducted among the 500 researchers attending the Joint Multi-Conference on Human-Level Artificial Intelligence found that almost four-in-ten (37 percent) believed that human-like artificial intelligence would be achieved within the next decade or by 2028. An additional 23 percent expected it would occur within the next two decades or by 2038.¹⁴

In 2019, researchers at Emerj, an artificial intelligence research firm, conducted interviews with 32 PhD researchers working on AI and found that 24 percent thought the Technological Singularity would occur between 2036 and

2060; just slightly fewer (21 percent), however, thought it would happen between 2021 and 2035.¹⁵

All of these surveys and their findings are clearly credible, but the diversity of their respondents is substantially narrower than that of a survey conducted by two researchers working for the Future of Humanity Institute at the University of Oxford. The researchers, Vincent C. Müller, Professor of Philosophy at Anatolia College and also the President of the European Association for Cognitive Systems, and Nick Bostrom, a philosopher teaching at Oxford, surveyed four groups totaling over 500 individuals. They asked the survey participants to indicate the exact date they expected to see the arrival of “human-level machine intelligence.” Interestingly, they associated that term with work – not with social interaction, competitive gaming or strategic reasoning – defining it to mean a machine “that can carry out most human professions at least as well as a typical human.”¹⁶ In other words, artificial intelligence is best understood as a machine’s ability to perform on-the-job tasks as well as or better than a human worker.

The groups Müller and Bostrom surveyed included a mixture of philosophers, computer scientists, cognitive scientists, systems developers and the top 100 authors in artificial intelligence, based on citations appearing in Microsoft Academic Search in May, 2013. While they represented a broad range of perspectives, all had been trained to be rigorous in their analysis, careful and precise in their judgments and dismissive of hype and exaggeration. Their responses, therefore, offer the most representative yet reasoned prediction for the Technological Singularity’s start date. And, the median of those responses revealed that there was a 50 percent probability of achieving human level machine intelligence in just two decades.

Machines would become as smart as humans in the year 2040 and forever smarter than humans after that.¹⁷

Now, to some, that 50 percent probability means the likelihood the Techno-

logical Singularity will arrive by 2040 is no better than flipping a coin. To others, however, it seems very much in keeping with what they are already experiencing in life. For example:

- According to the U.S. Bureau of Labor Statistics, if you were to start a new business today, there's a 50 percent probability it will fail within the next five years.
- According to the National Survey of Family Growth (NSFG), if you get married today, there is a 50 percent probability that your union won't last to your 20th anniversary.
- And, according to First Orion and referenced by the U.S. Federal Communications Commission, if you get a call on your cell phone today, there's about a 50 percent probability it will be spam.

Said another way, the prospect of the Technological Singularity arriving in the year 2040 is neither the stuff of science fiction nor the frightened clucking of Chicken Littles. In fact, it is well within the range of situations and outcomes that we humans face every day. Moreover, that plausibility is what makes the Technological Singularity all the more frightening. It is a real possibility and it is really close to happening.

Not a Walk in the Artificial Park

Given the preponderance of scientific and other expert opinion, two things are clear when considering the prospect of intelligent technology. First, the development of AI-based machines will profoundly and permanently reshape the American workplace and workforce. And second, it will likely do so within a timeframe that's so close, it can fairly be described as near-at-hand. Indeed, the disruption this technology has already imposed on blue- and white-collar workers – production line laborers, warehousemen and women, bank tellers, lawyers, journalists, surgeons and diagnosticians, financial analysts and traders, to name just a few – will seem like a walk in the artificial park when compared to what's about to come.

When machines acquire human-level intelligence, a new being will emerge in the world of work. It will not be carbon-based – it will not be an animate species – but some will actually see it as a genuine life form. Indeed, there are already some who argue that robots and androids are (or will become) “humanoids” and thus should have the same rights as we humans. Take the novelist Dan Brown, for example. He describes SCMs as the Seventh Kingdom, joining the other six that have always existed among Earth's fauna and flora, including Animalia, the home of humans. To him, they are a new species on our planet, but one most accurately

described as a non-biological creation called *Technium*. The kingdom of intelligent technology.

That notion – the arrival of machines that will look, think and act just as humans do conjures up the image of bad Arnold Schwarzenegger unfeelingly, methodically slaying innocent people in the first *Terminator* movie. It is a terrifying prospect, but one that exists in Hollywood, not our hometowns. Absent the deployment of autonomous weapons, the introduction of AI-based systems will not put people in the grave. It will, however, put them out of work.

Circa 2040, the human species will see the creation of **a byte-collar workforce** that will displace both blue- and white-collar workers by the tens of millions. Already, credible studies conducted by reputable scientific and academic institutions paint a grim picture of what can and will happen when the Technological Singularity emerges from the womb of human invention. For example:

Oxford University

Two researchers at Oxford University examined U.S. Federal Reserve data and concluded that “about 47 percent of total US employment is at risk” of automation right now.¹⁸ As of May 2019, the U.S. workforce totaled approximately 157 million people, so their conclusion means that 74 million Americans could be out on the bricks looking for work in the near-to-mid-term. The job losses would hit every profession, craft and trade and at every level of experience and seniority. And that disruption is likely to be accelerated by the inability of employers to recruit workers as the post-pandemic recovery picks up steam. Machines don’t get sick or have to be quarantined, so some and perhaps many of those organizations will turn to byte-collar workers rather than rehiring humans as the economy improves. The organization man of the 1950s will become the organization machine of the 2020s and beyond.

McKinsey Global Institute

A two-year study by the McKinsey Global Institute estimates that the introduction of advanced technology will throw 30 percent of the world's labor force out of their jobs by 2030.¹⁹ That will affect the employability of 375 million people globally, with developed countries and especially the United States bearing a disproportionate share of those losses due to the density of technology already present in its workplace and the availability of capital to finance the switchover. Unions may strike and governments may regulate, but the irresistible force of technological innovation will make more and more human workers obsolete and unwanted by employers. It isn't personal, businesses will argue, but simply their responsibility to maximize shareholder value by using the most productive means available to accomplish their mission. And, even the smartest humans don't measure up to that criterion.

MIT's Media Lab

A study conducted by MIT's Media Lab has concluded that the impact of intelligent technology's introduction will not be the same across all geographies, even in the United States.²⁰ The researchers found that the smaller the city, the greater the disruption is likely to be, not because of their size but because of the economy in those locales. For example, Sunnyvale, California; Boston and Cambridge, Massachusetts; and Durham and Chapel Hill, North Carolina are expected to experience the least job impact because of the density of technology in the companies located there and the technological proficiency of their workers. On the other hand, Myrtle Beach, South Carolina; Elkhart County, Indiana; and Punta Gorda, Florida are deemed to be at high risk because their economies are driven by non-technological jobs in tourism and agriculture and the susceptibility of many of those jobs to automation. In effect, machine-driven job loss will occur everywhere, but not everywhere at the same time.

No organization, occupation, industry or region will avoid the intrusion of SCMs. Indeed, the interconnectivity and interdependability of the various segments of a modern economy as well as the ever escalating capability of the technology itself ensure that it will happen in every one of those spheres and more rapidly than historical introductions of other new technology. If one segment of a supply chain is automated, for example, the inability of the other segments to keep up – to provide necessary inputs or generate expected outputs – becomes more apparent and problematic. That shortcoming, in turn, diminishes both the productivity and perceived value of the segment and the supply chain as a whole. As the old saying goes, a chain is only as strong as its weakest link.

The need for immediate and appropriate correction will, as a consequence, become an irresistible force, leading to the rapid deployment of intelligent technology in every segment of the economy. It will likely occur first in offshore supply chains where their unreliability was a critical factor in the failure to provide sufficient quantities of personal protective equipment (PPE) during the Covid crisis. Those initial deployments will inevitably lead to the automation of other supply chains until finally, the cloud will have displaced offshoring as corporate America's distribution system of choice. And its preferred way to offload high cost human workers.

The Bad Baloney of Disruption Deniers

There are, of course, those who deny that the development of intelligent machines will lead to widespread dislocations among human workers. Their position is best characterized as the technological corollary to Joseph Schumpeter's famous dictum explaining the phoenix-like quality of industrial capitalism. An economist writing in the 1940s and 1950s, Schumpeter theorized that industrial evolution "incessantly revolutionizes the economic structure from within, necessarily destroying the old one, incessantly creating a new one. This process of creative destruction is the essential fact about capitalism."²¹

His dictum of creative destruction has become the theoretical foundation for those seeking to explain away the negative impact of intelligent technology on the world of work. Instead of focusing on the role of entrepreneurs and their influence on the growth and development components of an economy as Schumpeter did, however, these disruption deniers argue that the deployment of human-level intelligence in machines will play out in the workplace in the same way as earlier industrial technologies. In general terms, it might best be described as, "suck it up – don't sweat the pain, pleasure is just around the corner."

Inventions such as the combustion engine, electricity and railroads did take

away the jobs of buggy, candle and stagecoach workers, they acknowledge, but they led to the development of even more new jobs in the workplace, and those jobs – which never existed before – gave displaced workers a shot at more advantageous employment opportunities. The experience was painful to go through, they will often also admit, but eventually most people got over it and saw improvement in their prospects. The net result, they happily conclude, is positive. Technology’s destruction of peoples’ jobs is good for them.

These disruption deniers offer a number of reasons for their rosy outlook, all wrapped up in a single word. The new jobs that are created, they argue, will be “better” than the ones that are destroyed. Better is typically defined as higher paying, with a dash of less repetition and boredom thrown in. What they seldom acknowledge, however, is just how inaccessible these new jobs are for many Americans and how few of such opportunities there will be.

All of the new positions created by AI have little if any overlap with the jobs that it destroys, in terms of the skills and knowledge required for satisfactory performance on-the-job. In effect, everyone who loses a job to a SCM will have to accept both the risk of going back to school to learn skills they may or may not be able to grasp and the risk of having to compete for one of the smaller number of jobs available to those with the new skills. Humans almost always dislike change and uncertainty, so this “transition” requirement that so many deniers blithely skip over is a fearsome prospect for most workers. It entirely discounts the value of the seniority and experience-based wisdom they have acquired and often undermines their financial stability while exposing them to unhealthy psychological and emotional stressors.

That situation is trying enough for most Americans, but it is not the worst aspect of AI-induced creative destruction. What’s even more harrowing is the fact that it will happen over and over and over again. The technology is advancing at an unrelenting and rapid pace which will destroy both old jobs not previously affected by

it AND new jobs that were created by its earlier generations. As a consequence, the life expectancy of any job will shorten to a year or two at best, with each job's demise forcing workers yet again into the high-risk experience of transition.

This hyper-frequent and continuous destruction of old and new jobs is what makes the introduction of AI in the workplace unlike that of any previous technology in history. The steam engine in transportation, the assembly line in manufacturing, even the Internet in commerce have all had a profound impact on the number and content of jobs available in the workplace. Those impacts, however, played out over decades. That more measured pace gave humans time to adjust to the new structure a technology imposed on the workplace by identifying and preparing for a role with a future they could count on. As we approach and then pass the Technological Singularity, however, that space – that opportunity for recovery – will disappear. If time waits for no man or woman, neither does intelligent technology. And, that truism transforms creative destruction into **destructive creation** – the real essential fact of capitalism in the 21st century.

A Case Study of Denial

A telling example of the denial line of reasoning was provided by a leading consulting and research firm. In 2017, it conducted a study of workplace changes and concluded that the trend line of AI-produced job creation (for such occupations as data scientist, robot trainer and algorithm developer) would actually angle up to and cross the trend line of all of the jobs the technology would destroy (such as those for journalists, lawyers, truck drivers, laboratory technicians, accountants and programmers) and do so in 2020. In effect, the firm was saying that the creative destruction of AI has already begun to have an impact on the job market, and that impact would be a net positive.

No less important, the company actually quantified that impact, so there could be no doubt that the introduction of AI would be good, not bad for human workers. The firm reported that, based on its analysis, AI would terminate the humans in 1.8 million jobs, but would also create 2.3 million new kinds of jobs for humans to fill.²² In other words, humans had nothing to fear from the introduction of this technology. In fact, the company envisioned an entirely new kind of hybrid workforce that melded the supposedly non-replicable talents of humans with the speed and computational power of technology. Humans, they opined, will work with intelligent machines the same way they have worked with cars and cellphones. Compatibly. Capably. Beneficially. And happily. The subtext might well have been Alfred E. Neumann, declaring “What me worry?”

It is a compellingly reassuring argument – a truly smiley faced alternative to the Oxfords, McKinseys and MITs of the world – and one that is especially alluring given all of the other crises and challenges that confront America today. However, there are, unfortunately, two flaws in the analysis.

**Flaw #1: Assuming the Technology Will Be
Adopted Painlessly and at a Linear Rate**

Implicit in the firm's creative destruction prediction is that the pain of lost jobs will be remediated by the salve of new ones. And yet, the pain of what's in the middle between those two states – unemployment politely costumed as “transition” – is both real and consequential. If the firm is right, a whopping 1.8 million people are going to get thrown out of work. That's a 31 percent increase over the unemployment number in May of 2019, when there were 5.9 million Americans looking for a job.

A year later, however, the Covid-19 pandemic had thrown 18.2 million people out of work, making that 1.8 million addition seem almost insignificant. And yet, many employers saw all those empty desks and work stations as an opportunity to install automation and intelligent technology in their workplaces. They could lower payroll and avoid the hassle of compliance with Equal Employment Opportunity Commission regulations and use the pandemic to camouflage their move. The IMF was forecasting that global employment was unlikely to return to its pre-virus levels until 2023, but in the United States, even that gloomy projection is likely to be off the mark. Many jobs that had once been filled by humans will have been forever reassigned to byte-collar workers.

Even worse, the switchover won't end there. AI development isn't advancing at a linear rate – one that permits human understanding and accommodation – but

at an exponential rate – one that surpasses our ability to react to or recover from the changed circumstances it imposes. Said another way, the negative as well as positive impacts of AI will accelerate over time. Not only will its deployment create ever more new jobs but it will also simultaneously destroy more and more old jobs. How bad will it be? In two-to-three years, the pandemic-induced recession will likely be over, and given current economic trends, many analysts are now predicting a return to full employment by the end of the decade. It's a happy thought or, more accurately, a pipe dream. If 1.8 million Americans will lose their jobs to SCMs by 2020, the exponential advancement of AI's capabilities in the workplace will grow that number to almost 17 million by 2030! The economy will do just fine; human workers, on the other hand, will have been kicked in the teeth.

A comparison of that outcome to what happened during the Great Depression detracts even further from the supposed benefit of two lines crossing on a graph. That downturn, of course, was the deepest economic crisis in American history. It put almost 13 million Americans out of work, decimated their bank accounts and life savings, and created breadlines in cities and towns all over the country.²³ Adding another 4 million people to that figure is just a bit more impactful than a steeper slope on some analyst's graph; it's a national crisis of unprecedented magnitude. In effect, the destructive creation of the Technological Singularity will inflict far more dislocation and misery than even the Great Depression. It will establish a new reference point of national pain, a trauma that will scar all of today's American generations and put a hammerlock on the future of those who follow after them.

**Flaw #2: New Jobs Will Produce Genuine
Employment Opportunities**

The firm's new jobs prediction has two implications. The first, of course, is that it opens up never-before-seen employment opportunities. The arrival of AI, the

company suggests, will add an exciting new dimension to the world of work in the United States. It will refresh and replenish the Land of Opportunity. The new jobs will be cleaner, more lucrative and just plain cooler than anything that existed before. That's the siren song of the techno-creative destructionists. New technology is a good deal for workers because they will have lots more and even more exciting jobs for which they can be employed, and those jobs will be "better" than the jobs they lost.

The reality, however, is something else altogether. All those shiny, new AI-created jobs are different in kind from the old jobs workers previously filled. They involve entirely new tasks, and those tasks are much more complex and technology dependent than anything most workers have done before. To compete for them, therefore, 1.8 million people (and eventually tens of million more) are going to have to go back to school or extend the schooling in which they're already enrolled to learn new skills and acquire new competencies. That's not only a lengthy and expensive process, it's often an intimidating prospect with no guarantee of success. Indeed, given the lag in pedagogical revision, it's entirely likely that the required reskilling courses won't be available when they're needed (for the new jobs already in the workplace), leaving even those workers who are willing to make the leap unable to do so.

Worse, nothing stands still. The accelerating pace of AI development will mean that reeducation programs are always teaching students for the jobs that are soon to be replaced in the workplace. While workers are in school trying to acquire the new skills they'll need to compete for one of the new jobs that are available, yet another generation of AI technology will emerge and render some or all of those new skills obsolete. As a result, students will be forced into a Hobbesian choice: they can stay in school and submit to an endless cycle of courses to acquire an endlessly changing suite of skills or they can leave school and submit to a life of being endlessly unqualified for employment. If they choose the first course, they will be setting themselves up for ever-mounting student loans and the other costs of unemployment

(even when some of those cost are deferred or reduced by the government), and if they choose the second, they will be accepting a diminished standard of living with absolutely no prospect for upward mobility.

Moreover, there's no such thing as a one-to-one replacement warranty in employment. Just because a person is willing to move from one career field to another is no guarantee that they can successfully do so. The obstacles are numerous – mismatches between ambition and capacity, between the location of job openings and where people live, between one's personality and the cultures of the organizations offering those new jobs, to name just a few. The only way for an individual to succeed, therefore, is to do what they must to fit in. Said another way, those who are forced out of "old" jobs and into "new" ones aren't in transition, they are being forced to reinvent themselves. Whether they want to or not. And whether they can or not.

Despite these grim options, however, the case against disruption deniers should not be misconstrued as a neo-Luddite attack on intelligent technology. In fact, it's exactly the opposite. Denying the disruptive impact of SCMs prevents us from realizing their benefits, both to employers and to working men and women. It sets us up to be so overwhelmed, so harmed by the technology's introduction, we are unable or unwilling to adopt it effectively and thus lose its full power and promise. In contrast, acknowledging their downside – being honest and forthright about the challenges of adopting SCMs at work and in society – enables us to prepare for and potentially even preclude most of their negative effects. It recognizes the value of the end state and provides a realistic framework for reaching it.

A Fiduciary Responsibility

The escalating skill shortages caused by AI's ongoing annexation of jobs will exacerbate the so-called “talent war” in which corporate America is now embroiled.

Employers are already struggling to recruit and retain appropriately skilled workers for the open, much more technology-intensive jobs they have right now. As AI inflames that competition even further, the shortages will go from being an irritating cost factor (as companies have to pay more to get the workers they need) to being a limiting factor (as companies have to curtail operations due to a lack of appropriately skilled workers), and that shift will harm both a company's financial performance and its brand.

The supply of talent – the pool of workers with the requisite competencies to accomplish the tasks embedded in current and soon-to-be-open jobs – is a zero-sum game, so employers have only four choices. They can:

Grin and Bear It (and watch workers bail out and their brand tank)

One strategy is to leave the jobs that require highly skilled workers unfilled and accept both the resulting decline in productivity and the opportunity cost inherent in slower growth. Of course, employers can off-load some tasks onto current workers, but given the new skills involved and the physical and mental limits of employees,

that's a stop-gap fix at best, and likely will undercut morale and eventually retention.

Dig Deeper Into Their Wallets (and see their margins shrink and Wall Street scream)

An alternative is to pay higher wages in order to poach highly skilled workers from other companies. Those companies, however, are likely to up the ante and match or beat any poacher's employment offer so their employees will stay right where they are. Worse, still other companies will almost certainly launch raids on poaching employers (and all others), forcing them to pay more just to retain their own workforce.

Ship the Work Overseas (and be castigated as un-American or a bad corporate citizen)

A third and comfortably familiar strategy is to assign the jobs to skilled workers in other countries such as Hungary, the Philippines and India. Unlike the offshoring of most manufacturing jobs, this strategy moves some of a company's intellectual capital – its most sensitive research and product development work – to a less secure venue, exposing it to the risk of trade secret theft and the creation of external competitors.

Ride the High Tech Wave (and be celebrated in business school case studies)

A fourth and increasingly irresistible strategy is to drop out of the game altogether and instead invest in the acquisition of a byte-collar workforce. Installing

intelligent machines not only captures a market advantage, it eliminates the ever-escalating cost of recruiting and retaining human talent and also avoids the overhead of a Human Resource Department and the expense of complying with the rules and regulations of the U.S. Department of Labor.

Faced with this set of options, most employers will rush to meet what they see as their “fiduciary responsibility” – interpreted by business schools to mean a company’s obligation to always do what is in the best financial interests of its shareholders – and pursue the last option. As the entrepreneur and author Seth Godin put it, “The unhappy theory of business ethics is this: you have a fiduciary responsibility to maximize profit. Period. To do anything other than that is to cheat your investors.” In other words, it is not only a legal requirement but a company’s ethical duty to invest in the omnipresent and highly skilled technology alternative to human workers and take one small step for byte-collar workers, one giant leap for machinekind.

The Right Turn to Autosourcing

This techno-reset cycle – the switching out of blue- and white-collar workers for byte-collar employees – is not an economist’s prediction that can be disputed or a futurist’s fancy that can be ignored. It is a reality that is transforming employers’ assignment of work into a corporate practice that is best described as **autosourcing**. Indeed, thousands of news stories, made-for-TV specials, magazine articles, blog posts and books have discussed and dissected this shift, and not one has disputed its existence. Autosourcing is now considered every bit as legitimate and normal as “doing more with less” and “outsourcing” in the accomplishment of productive activity.

In some cases, the reliance on machine intelligence only affects some of the tasks involved in job performance, so humans continue to be employed but with their role changed, often significantly. In other cases, the machine takes on all of a job’s tasks, and humans are eliminated entirely from that role in the workplace. Regardless of the scenario, however, it’s clear that the introduction of this technology upends humans’ traditional activities and responsibilities in the workplace. And yet, many, maybe even most Americans remain unable or unwilling to relate to that impact. The usurpation of human capital management by the rush to install robots,

androids and intelligent machines on-the-job is right there in front of them – if not in their own workplace, then in virtually every news report in the country – yet, most steadfastly brush off its reality.

What's behind this blind spot for the autosourcing pandemic? How can so many of us fail to see what is happening right in front of us? And, how can so many others actually see what's happening, but refuse to acknowledge what it means?

There are undoubtedly a number of reasons for this myopia, but two are most prevalent.

One is the **Neverland Fallacy**. Some people believe (or have convinced themselves) that the Technological Singularity is so mind-boggling, so outrageous an idea, it simply is not possible. The rise of super intelligent machines and their permanent elimination of humans from the workplace is too extreme a notion to be believable and has absolutely no prospect of happening. It is nothing more than the machine version of Peter Pan. And, even if it is real, it will occur so far in the future, it is so distant an event that it will have no effect on them. Achieving such an awesome capability requires too much discovery, too much advancement in the state-of-the-art to become a reality during their lifetime or that of their kids and grandkids. The Technological Singularity is simultaneously beyond this group's comprehension and beyond a horizon to which they can relate, and that duality – that inconceivable and far, far away quality – enables them to deny its ability to affect them in any significant way.

A second reason that people refuse to acknowledge the impending Technological Singularity is the **Suit of Armor Fallacy**. It's an individual's view that bad things will happen to everyone else but them. They are naively complacent or obliviously self-deceptive. They do, in fact, see the harm intelligent machines are causing in other occupations and industries, but they are unwilling to accept that it can and will occur in their line of work, as well. Embedded in this view is the subtext that

those other workers who lost their jobs couldn't have been as good at what they do or as important to their employer or as highly regarded by their boss as these self-deceivers believe themselves to be. The bias may be unconscious or an outlook they proudly hold, but the result is the same: they are convinced that they are singular performers in their field and assets to their organization and those distinctions act as an impenetrable shield which keeps them safe for all time.

The evidence, unfortunately, completely refutes these misconceptions. Countless news reports and the findings of surveys and research projects have detailed job losses that are already occurring as well as projections for even more losses in the near-to-mid-term. They are impacting the careers of a broad cross-section of working men and women, including:

Lawyers	Musicians
Data entry clerks	Artists
Journalists	Insurance underwriters
Truck drivers	Bank tellers
Chefs/cooks	Inventory managers
Financial analysts	Farmers
Telemarketers	Manufacturing workers
Customer service reps	Surgeons
Medics	Retail sales associates
Construction workers	Security guards
Manual laborers	Shepherds
Pharmacists	Food delivery drivers
Soldiers	Receptionists
Accountants	Tour guides
Mixologists	Librarians

Teachers	Hospital administrators
Cashiers	Bookkeepers
Landscapers	Billing & posting clerks
Operating engineers	Tax preparers
Loan officers	Legal secretaries
Payroll clerks	Usher/ticket takers
Gaming dealers	Manicurists/pedicurists
Postal clerks	Equipment operators
Real estate brokers	Print binding/finishing workers
Dental lab techs	Umpires/referees
Recruiters	Food service hosts/hostesses

The unavoidable conclusion is that, with very, very few exceptions, no career field will be spared, and no laborer, skilled tradesperson or college-educated professional is going to be safe. As with the spread of the coronavirus, the introduction of intelligent technology will not recognize class, occupational prestige or take-home pay. **The ultimate expression of the intelligence economy is the permanent end of paid employment as the central aspect of human life.** It is the pink slip equivalent of an extinction level event. Working men and women will no longer be able to earn a living. They will lose their access to an income that will pay for even basic necessities and, in many cases, to employer-subsidized health insurance as well. Their physiological and safety needs will go unmet.

The social scientist Abraham Maslow famously described those needs as the foundation of human motivation. He conceptualized them in a pyramid of five tiers and posited that humans could not advance to meeting their higher order needs until those basic drives had been satisfied. In effect, the Technological Singularity has the power to prevent humans from securing not only food, shelter, health and social

stability, but also love and belonging, self-esteem and self-actualization.

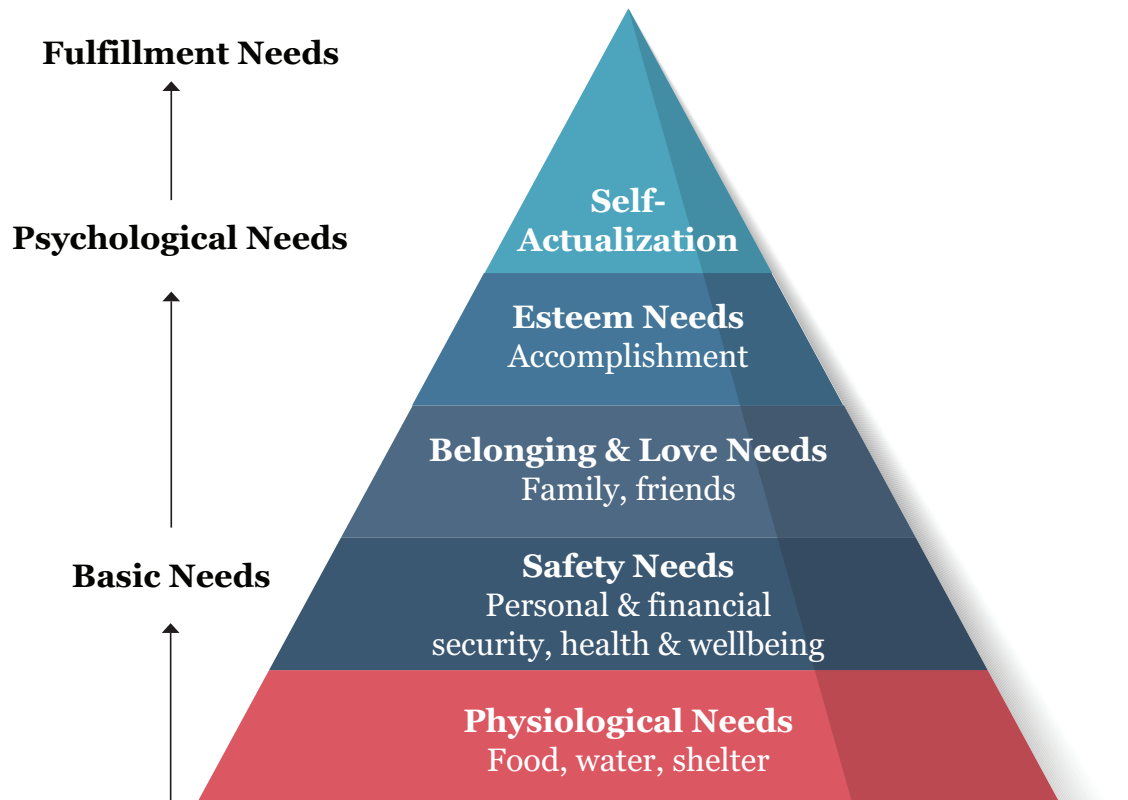


Diagram Source: Wikipedia

That's obviously tragic, but it is not the most devastating aspect of the Technological Singularity. The injury to working men and women is massive, but even more hurtful is the fact that it will be a self-inflicted wound. We will have done it to ourselves. Individually and collectively, we are at fault.

On the one hand, the unconstrained, headlong rush of developers pushing the state-of-the-art in artificial intelligence is driving the elimination of human workers from the workplace. Their refusal to be forthright and honest about the likely consequences of what they are creating is unconscionable. They testify before Congress and blather on cable business shows about their commitment to ethics and then disband their ethics oversight boards and race headlong into the development of technologies that will throw ever more people out of work. They protest against

their companies signing contracts with the U.S. Department of Defense, fearing those agreements will lead to the development of autonomous weapons, and petition against their companies selling facial recognition technology to police departments, fearing it will be used against peaceful protestors, and all the while, they go blithely about building systems that threaten the careers and economic wellbeing of hundreds of millions of working men and women.

On the other hand, it is We the People who are making this dereliction of humanity even worse. By refusing to acknowledge either the potential scope or proximity of the Technological Singularity, those of us who make up today's American population – Boomers, GenXs, Millennials and GenZs – are squandering the time we have to prepare for this point of no return. We are, in effect, giving in, surrendering, or more shamefully, copping out. Unless we step forward now, unless we force the initiation of a general mobilization that will address the catastrophe before it causes widespread, permanent harm, we will be the first generations in American history that fail to meet our responsibility to leave a better nation for our kids and grand-kids. We will have let our families and the nation down.

The Intelligence Economy

It would be conveniently reassuring to believe that the disruption of intelligent technology will be limited to occupational tasks. SCMs will become increasingly capable, but in this happy line of reasoning, their impact will be no more than functional. They will have full physical capacity, but not the maturity to appreciate when to use it. As one writer described it, these adolescent machines “have been taught or learned how to carry out specific tasks without being explicitly programmed how to do so.”²⁴ They will simply be employed as humans have been. They will crunch ever more quantities of human-generated data, and do nothing more than determine what humans would eventually (or formerly) have decided to do. They won’t be artificial geniuses; they will be artificial copy cats.

It’s a comforting formulation, and it’s totally wrong. Adolescent machines will grow up into adult machines that have the capacity to change their parents’ future. That’s the opinion of someone who should know. Jürgen Schmidhuber is the Director of the Swiss AI lab IDSIA and a person heralded by many as the father of artificial intelligence. As he describes it, the advancement of this technology “is much more than just another industrial revolution. It is something that transcends humankind and life itself. It is the termination of industry and the beginning of an intelligence economy. It will evolve just as the industrial economy did, but its evolution will bear strikingly different markers.”²⁵

In the industrial economy, the introduction of new technologies – even those like the automated assembly line that revolutionized production and the desktop computer that did the same for service delivery and management – did not alter the fundamental agency of humans. People were still in charge. They put the technology to work. A writer for TechCrunch described the relationship this way: “There will always be a need for on-site, human labor and expertise when we deal with machines. Robots will have glitches, need updates and require new parts.”²⁶ The role of humans may have changed as technology advanced, but the importance of humans did not.

The workplace interaction of humans and machines was essentially a partnership, but never one of equals. Up to now, humans have always been the senior partner in the relationship. Machines did the heavy lifting, the tireless operation, the organization and reduction of data, even the identification and analysis of alternative courses of action, but humans always defined the job and always made the decisions. They were the thinking part of the partnership. They were the ones calling the shots.

As the intelligence economy expands, that pecking order will change, and the partnership will morph. The shift, however, is not always easy to perceive. At the moment, machines are certainly more visible and capable than ever before, but humans still direct, correct and back them up. Either the machines are chatbots that work at the direction of humans to provide effective customer service or they are personal assistants that function as data crunchers and correlation finders for human decision-making. Even then, the leash is very short. For example, when chatbots get confused or are unable to interact effectively with a customer, it is a human who resolves the situation. Similarly, a personal assistant is limited to working with the data sets selected for its instruction, and those selections are made by human trainers. In both cases, the machine depends on its human partner to be appropriately involved and effective in its work.

And now, that relationship is about to change. With each passing generation

of AI development, machines gain both in their computational power and in their access to more and more applicable knowledge. That knowledge comes from additional data sets and from the work experience of earlier generations of similarly tasked SCMs. In effect, their intelligence is cumulative and expansive. Unlike humans, they never forget, either the data they've been given or the lessons they've learned on-the-job. They grow in both intelligence and insight.

In addition, that maturation cycle doesn't have to wait eighteen or twenty-five or fifty years to be realized as it does in humans. Thanks to the exponential pace of the technology's advancement, AI generations are actually getting shorter and shorter. As a result, the machines will relentlessly grow more capable, less error prone and much more resilient than their human partners. More profoundly, SCMs will also exceed humans in wisdom – they will have more knowledge, more experience and better judgment than their partners. And, as that evolution occurs, both humans and machines (or more likely, their employers) will realize that it makes more sense for machines to become the senior partner in the relationship. For machines to be in charge. For the role of humans to be less visible and less important. Or, to be eliminated altogether.

The Switchover Superhighway

Today's cars are a perfect example of how this change in status will occur. Even now, cars might best be described as mobile software systems rather than as old-fashioned combustion-based vehicles. They are equipped with a vast suite of advanced technology that includes sensors and other data collection devices as well as computers that employ algorithms and machine learning. The goal is to keep the car operating at peak performance and efficiency and the driver arriving at their destination safely while enjoying the ride. In effect, the automobile is now more accurately described as a “mobileauto” or a system of mobile automation.

Even in the most advanced cars, however, when a human driver gets behind the wheel, there's no doubt who's the senior partner in the relationship. To be effective, of course – to get the driver from point A to point B – the machine and the human have to collaborate. For example, the GPS on the dashboard will offer a choice of routes and even forecast which will be quickest, but it's up to the driver to decide the direction the car will take and the stops along the way. After all, drivers often have their own preferences, plus routes change and GPS databases are not always updated in real time. In addition, there's always the possibility of unscheduled road repairs and even unexpected dangerous weather. All of which means that only a

human can make the necessary on-the-spot adjustments to bring the trip to what the driver defines as a successful conclusion.

These shortcomings will disappear as the technology gains more driving experience (especially with the specific passengers for which it drives), and both the human's and the machine's roles will morph as a consequence. Driverless cars will shift the human from an active and supervisory job to that of a passive and support position. The person behind the wheel (and as time goes by, in the back seat) will be the junior partner in the relationship. They will no longer tell the car what to do, but instead simply monitor its operation and, in theory at least, override and correct any miscalculations the car and its technology may make. Eventually, everyone in the car will see themselves as passengers with one unlucky person picked to be the designated "car-taker" for each trip, just in case the mobileauto gets out-of-whack. They'll have to leave their companions lounging in the back and sit up front where they can keep an eye on the road and the vehicle's performance.

As jarring as that reversal of roles will be, however, it is not the end state. Machine intelligence and driving experience will continue to advance and finally reach a point where the human in the driving partnership becomes irrelevant altogether. The technology will be able both to optimize system performance and to eliminate the inherent shortcomings and inefficiencies of their human backup.

Indeed, news reports of human-induced accidents among driverless cars have already begun to appear. It seems that people, prone as they are to distraction and inattention, are not especially good at spur-of-the-moment corrections. As the evidence of this inherent defect becomes more visible – as such misjudgments and misbehaviors mount up – the companies that produce these intelligent vehicles will decide that it's better to create a machine alternative that is specifically designed to monitor vehicle performance and avoid accidents.

In effect, the designated car-taker will go from being the junior partner to

someone along just for the ride. The car will decide the route and speed for the trip as well as any necessary adjustments to the trip plan and, of course, the rest stops that best accommodate its human passengers. It will also self-monitor its adherence to these parameters and its reaction to any unexpected situations, and if necessary, act as the mobileauto's failsafe system to determine and initiate any necessary corrections.

Some and perhaps many will cheer this switchover. They will celebrate technology's annexation of the chore of driving, whether it's by an overscheduled parent or a daily commuter. Are you feeling under the weather, but need to run a quick errand for the kids? No problem, the mobileauto will get you there and back without a worry. Are you on your way to work, but still have to put the finishing touches on your presentation for the boss? Again, no problem, the mobileauto's got you covered. We Americans will continue our love affair with cars, but even the way we purchase them will change. Instead of taking a test drive to see how a particular model handles on the road, we will focus on its creature comforts, effectively making the old-fashioned term "passenger vehicle" a modern reality.

For others, however, this switchover will have ominous implications. To them, it will mean the end of individuality and independence. Those who enjoy driving will no longer be free to do so. As mobileautos reach their full capability, states will almost certainly act to remove the possibility of human-caused accidents by banning all human drivers from their roads. They will prohibit auto manufacturers from installing the option of a human driver mode on board their vehicles sold in the state, and refuse to license insurance companies that offer policies for human drivers. Going for a Sunday drive will no longer be possible. Embarking on a cross country trip with Dad or Mom at the wheel of the family car will be strictly forbidden. And, chauffeuring guests around the neighborhood to see the Holiday lights will be out of the question. In effect, America's open road will still be open, but only to intelligent machines.

An Ethical Lens

All of the upside and every aspect of the downside of intelligent technology can be summarized in a single word: **ethics**. This wonderful yet terrifying capability poses a moral dilemma. Can its benefits be harnessed without imposing a human harm that violates the principles of right and wrong?

Such a question was never raised about textile machines, the automated assembly line or the combustion engine. Certainly, these and other technologies did provoke concerns and even resistance, but that opposition had nothing to do with ethics. They upset the natural order of industry at the time, and that change was frightening and disruptive for many workers. They forced men and women to adapt, but they never threatened their agency in the workplace.

Intelligent machines, in contrast, pose a risk to far more than how goods are produced. They can and eventually will eliminate the entire economic system of paid employment. They don't simply force people to adapt, they have the potential to reset the entire way they live. SCMs threaten the very existence of humans in the workplace, and therefore the ability of our species to meet our basic and higher order needs. That's why a simple browser search for the term "AI and ethics" now produces 108,000,000 results. The issue of morality is central to which forms of this technology will be developed and how those forms will be applied for the benefit of humankind.

Ethics is the philosophy that studies what is right and wrong. It provides the framework for determining whether or not a specific belief, decision or action or a combination of those viewpoints and behaviors align with moral principles. The debate about the ethics of intelligent machines, therefore, is based on two questions: first, can SCMs be developed for the benefit of humankind without exposing it to harm or violating fundamental human rights, and if so, how? And second, is it a technology for good or ill; and if for good, how must those machines be used and managed to ensure that good is achieved without any negative consequences, regardless of the user's intent?

In some cases, these questions are raised because of the way the technology is imagined and portrayed. Our popular culture has been inundated with tales of SCMs named Hal, Skynet, Joshua and ARIIA, to name just a few. These are omnipotent, super intelligent machines that represent, at least as Hollywood has conceived them, an existential threat to humankind. Humans may have created them, but the machines somehow achieve a level of independent thinking and acting and a self-aware malevolence that puts people at risk. That act of creation, therefore, is wrong. It is unethical. So, if today's less capable AI systems are simply the first generation of those machines – if they are the next step and the steps after that on the road to such anti-human machines – then creating today's systems is also an ethical error.

A more plausible reason for viewing intelligent machines through an ethical lens is their dual-use nature. SCMs are inherently susceptible to being used for good and for ill. They can clearly be used to improve human life, at home, on-the-job and virtually everywhere else. They can be assigned physically demanding, unpleasant, dangerous, and boring tasks and will complete them without complaint or the need for rest. They can free us from the drudgery of chores and enhance our creature comforts. They can help us shop more efficiently and stay on top of the news and information we value. They can do all that, and also provide the means to violate our privacy and surveil our movements. They can be used to replicate or even magnify our biases and to create fake news and malicious information. They can give crimi-

nals the ability to steal our identity and employers the opportunity to eliminate our jobs. They are, at one and the same time, a boon to human life and a genuine threat to our wellbeing.

That duality of capability makes it critical that each and every application of the technology be carefully evaluated to ferret out the full range of its potential repercussions and risks and evaluate their ethical implications during or even before development. If we are moving to an intelligence economy, we have to ask ourselves for each and every SCM that comes out of a lab or garage, does the possible wrong outweigh the desired right? If not, there is no ethical concern. If so, can that wrong be properly regulated and thus controlled within tolerable limits or remediated through preparation and corrective actions? And, should that not be possible or practical, what protections or prohibitions must be instituted to preserve the opportunity, wellbeing, privacy, independence and nobility of humans and who should be responsible for enforcing them?

While these concerns are now being raised about intelligent technology, it is not the first science-based advancement to face such scrutiny. Two other fields of development have also provoked ethical concerns: biotechnology and nuclear power. As it has been with SCMs, popular culture has focused our attention on biotech monsters, from Frankenstein and the Fly to the dinosaurs in Jurassic Park, and on nuclear horrors, including those portrayed in *Dr. Strangelove*, *Fail-Safe* and *On the Beach*. In addition, these developments are also dual-use technologies. Biotechnology and, in particular, recombinant DNA can be used to advance human health by producing new and more potent medicines and to promote human engineering by enabling genetic selection in reproduction and the creation of designer babies. Similarly, nuclear power can be used to save money and avoid pollution by generating clean energy for municipalities and homes and to kill or maim innocent people and render their hometowns uninhabitable by being deployed as a weapon of mass destruction.

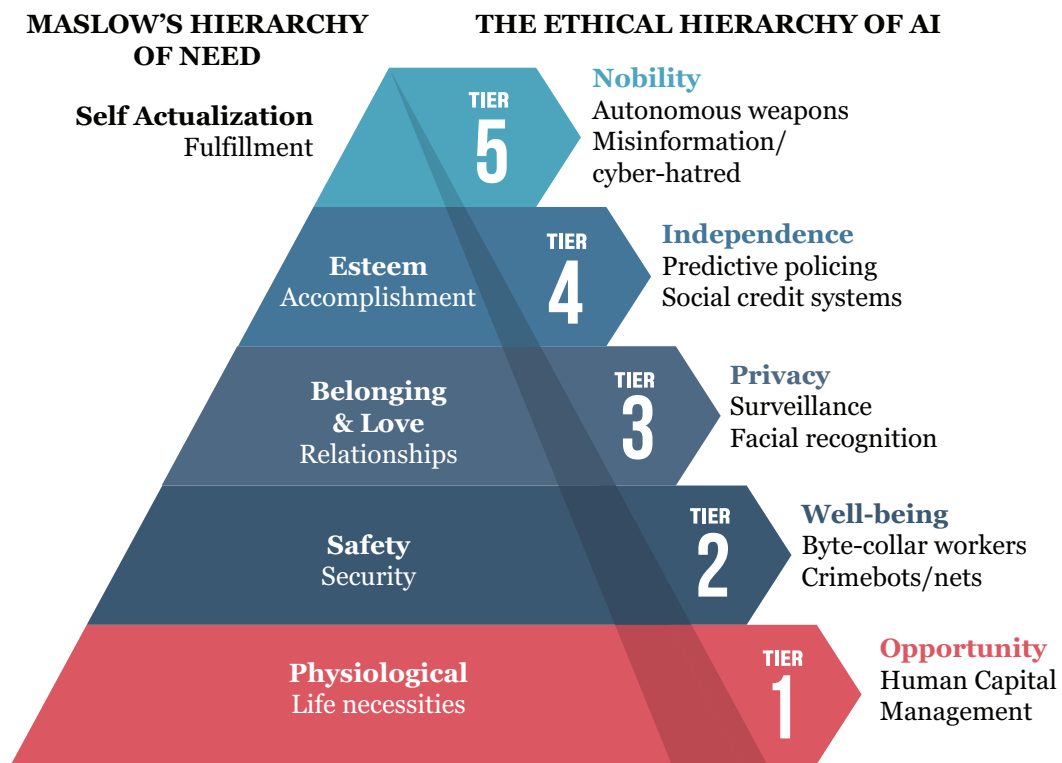
The ethical questions raised about these technologies are identical to those now being raised about SCMs in every respect except one. The concerns regarding biotechnology and nuclear energy have been recognized and, to some extent at least, addressed. The Asilomar Conference on Recombinant DNA in 1975 developed a set of guidelines which, though voluntary, have served to keep biological research safe and focused on service to the public domain. Similarly, the use of nuclear weapons has been at least partially controlled through treaties that limit the development and/or testing of certain categories of such weapons and by the overarching reality of MAD – mutually assured destruction – which raises the specter of a comparable retaliation should such a weapon ever be used against another nuclear power. While these safeguards are fragile and susceptible to contravention, they have kept both individuals and nation states on the right rather than the wrong side of the development and use of these technologies.

Unfortunately, the same cannot be said for SCMs. There are no safeguards – voluntary or otherwise – that will protect people from the unethical development or use of intelligent technology. While much has been written in the business, academic and public media and countless discussions have been held by panels at conferences and seminars, little real progress has been made in establishing even self-regulating Asilomar-like guidelines, let alone a canon of specific principles regarding the right and wrong way to tap the power of this technology. Given this lack of consensus, many corporate efforts to self-regulate their development of intelligent systems have been halting or nonexistent. Google, for example, disbanded its external ethics board one week after setting it up when concerns were raised about the individuals who were asked to serve on it. Other companies have left such boards in place but provided little or no transparency about their membership or role and absolutely no evidence that they have influenced the direction of AI's development.

The resulting vacuum is especially troubling as the dual-use character of artificial intelligence reaches deeply into the economic and social structure of our country. Unlike biotechnology, the potential for unethical practices involves much more than

physical hazards and unsafe experimentation. And unlike nuclear energy, the potential ways SCMs could be unethically used extend far beyond industrial accidents and warfare. At its core, intelligent technology threatens humankind's agency on the planet – its spot atop the existential pecking order. It interferes with the one aspect that sets humans apart from all other species and from machines themselves – their ability to reach for and achieve nobility, their quest to be the best of themselves.

Though the enormity of that threat clearly elevates it to the status of a moral dilemma – a question of what's right or wrong – the general understanding of the issue has been diminished by a persistent fog of disconnection. The technology's applications are so broad and diverse, it's difficult to connect it with any specific question. Arriving at a meaningful level of comprehension, therefore, will depend upon the composition and general acceptance of a taxonomy of ethical risk that clearly calibrates the technology's impact on the hierarchy of human needs and, as a consequence, on our quality of life. To determine what is right and wrong, good and bad for humans, we have to connect the ethical questions to the way we lead our lives.



As shown in the above diagram of Abraham Maslow's hierarchy, AI's potential assault on human agency is the culmination of ever more ethically troubling applications that touch virtually every aspect of human life. These applications have already begun their assault on humans' opportunity in the workplace and will progressively erode our reach for higher levels of being.

Tier 1: Opportunity

The human rights of individual dignity and the pursuit of Happiness are put at risk when intelligent technology is permitted to discriminate against specific groups and individuals based on their ethnicity, gender, age or other attributes.

Tier 2: Wellbeing

The human rights of self-preservation and a decent quality of life are endangered when SCMs replace humans in the workplace and make them the victims of crime, all while the state fails to provide either an income and healthcare or adequate personal security.

Tier 3: Privacy

The human right to confidentiality and freedom from observation, tracking, recording and other forms of intrusion into a person's life cannot exist when intelligent systems spy on and monitor people and compile databases on their behaviors and communications.

Tier 4: Independence

The human rights of freedom and self-determination are threatened by automated analyses and judgments that pigeonhole people according to their perceived social value, expected conduct or some other state-defined category.

Tier 5: Nobility

The human right and defining attribute of our species – its ability to reach for

and achieve fulfillment – is imperiled in a world where machines are both pervasive and indifferent to truth and justice and able to inflict indiscriminate violence on men, women and children.

Pushing ahead with SCM development and deployment without resolving at least the ethical issues at tiers 1 and 2 is more than just a lapse of responsibility among AI researchers and academicians. It is more even than a failure by government officials to live up to the oath they take upon assuming office. Opening American business and the world of work to this technology without preparing for the consequences of doing so poses the gravest possible threat to individual opportunity and wellbeing and, as a consequence, to the nation's economic security and societal health.

That's not to say that the higher tiers of ethical concerns don't also deserve consideration and resolution. Of course, they do. But, as with Maslow's hierarchy of human needs, Tier 1 and Tier 2 of this pyramid of morality provide the foundation for addressing those issues. Answering the ethical questions regarding Opportunity and Wellbeing makes it possible to consider the right and wrong aspects of how intelligent machines will impact Privacy, Independence and Nobility. Understanding the technology's potential for bias and correcting it as well as acknowledging the near universal unemployment its application will cause and preparing for that outcome will position both individual Americans and their institutions to identify and resolve the other ethical dilemmas introduced by intelligent machines.

To neglect preparing for the arrival and inevitable consequences of artificial intelligence, therefore, is much more than simple inattention and carelessness. It is a moral failure on multiple levels.

It is a moral failure of AI researchers and developers when they do not think through all of the possible consequences of what they are creating and propose appropriate countermeasures to those that harm humans.

It is a moral failure of the executives of AI development companies when they do not consider the technology's impact on working men and women and their families and articulate those ramifications to the government so they can be effectively addressed.

It is a moral failure of our social and cultural institutions when they do not acknowledge the threat the technology poses to the people they serve and demand that elected officials develop and fund programs to protect them.

It is a moral failure of our religious institutions and their leaders when they do not speak out against the wrong being perpetrated on their followers by the unconsidered introduction of this technology and urge them to act ethically in their own work with it.

It is a moral failure of our local, state and federal governments when they do not recognize the harm this technology could inflict on all Americans and accept the responsibility for resolving it by establishing policies, setting priorities, and introducing initiatives with the appropriate scope and scale.

And, it is a moral failure of We the People when we do not accept the truth about the threat posed by intelligent technology and act aggressively as citizens to protect ourselves and our children.

The first step in ensuring that we are the masters of intelligent technology and not its victim is to correct these failures. We must impose a human moral compass on its development and application. For until we do that – until we establish and enforce what is right and wrong about it – we will never be able to benefit from its power and promise.

Chapter 3

The Climatic
Singularity

Fixin' It Ain't the Solution

While ostrich-like behavior is an all too familiar human trait, most people are now aware that the Earth's climate is changing and that this change is undeniably for the worse. Tornadoes are larger, more frequent and stay on the ground longer. Hurricanes are more numerous and much more destructive. Scorching temperatures turn cities into heat islands and entire mountains into raging forest fires. Droughts strangle crops and cut food supplies, while floods surge over levees and into homes and storefronts. And all the while, Arctic ice melts, sea levels rise, and storm-driven tides overwhelm oceanfront parks and boardwalks.

No area of the globe has escaped some form of environmentally induced hardship, and yet the term we use to describe it – “global warming” – makes climate change sound like a slow and not all that unpleasant an experience for the planet's inhabitants. Yes, the Earth is getting a bit toastier, it seems to imply, but there's no need to panic. We'll just run our air conditioners a little longer, rebuild our homes a little stronger and make sure our go-bags are always packed and sitting by the front door.

That positive perspective is reinforced by the data. The rise in the average temperature of the Earth's surface so far is barely a degree above what it was at the dawn of the industrial era in the mid-nineteenth century. Maybe there are more heat

waves and maybe we are setting single day temperature records, but overall, it isn't so bad (except in those distant places where it is). And besides, even the direst projections call for less than another half a degree rise in the coming decades, so there's simply no reason for a lot of hand-wringing. At least, that's what some argue. We're talking about a barely perceptible bump on the thermometer, one that's likely to have little or no effect on the way we work or live our lives.

In addition, all of these projections are just that – projections. Conjectures. Guesstimates. So, even if the rising temperature is a problem, there's every reason to believe it's not going to be as bad as alarmists and gloom-and-doomers would suggest. The Earth has always gone through warming and cooling cycles. Sometimes it's hotter for a period of years, but then, just as often, it gets cooler for a time, as well. A half century from now, we'll probably be complaining about the record snow falls we're having and pining for the good old days of global warming.

And then, there's the issue of genesis. Even if the rise in temperature doesn't end but instead continues, even if it does become a permanent and truly harmful situation, there's nothing to suggest that one circumstance – one condition or string of events – is pervasive and powerful enough to be its sole cause. Moreover, even if such a single source of the problem actually exists, there's no way to identify it – at least, with any degree of certainty – much less to do anything meaningful about it.

While it's true the majority of contemporary climate scientists believe there's sufficient evidence to indict human behavior as the genesis, other researchers hold firmly to the view that such evidence is inaccurate or insufficient. And if that's so, the problem deniers argue, there's simply no justification for taking actions that force extraordinary changes in the way businesses operate or people live. Indeed, without a clear and unequivocal determination of what's behind the climate shift – if you even believe there is one – it's irresponsible to launch costly and disruptive remedial initiatives.

It's a view that mimics one previously championed by Bert Lance, the Director of the Office of Management and Budget in the Carter Administration. As he once said, "If it ain't broke, don't fix it." For climate change skeptics, that precaution would translate to, "If you're not sure what's broken or even if it is, fixing it ain't the solution."

A Fake Controversy

The controversy surrounding climate change has long clouded the public perception of its definition, dimensions and implications for humankind. The dispute has unfortunately been more caterwauling than debate, more charge-and-counter-charge than useful discourse. More about scoring points and rabble-rousing than thoughtful analysis and consensus-building. The resulting din has made it all but impossible for many Americans to understand or even recognize the situation as something that will directly affect them. Or, that they could or should do something about it.

Indeed, the lack of agreement has precluded all but the most modest of remedial efforts by local and state governments, federal agencies, the private sector and individual citizens. Even worse, powerful political and business factions have now combined to undercut even those limited initiatives, causing many Americans to cheer when the United States withdrew from the widely-accepted Paris Agreement on climate mitigation and when the federal government turned its back on decades of hard work and rescinded a total of 84 environmental rules.²⁷ Yes, much of that backsliding has now been reversed, but its residue is still with us, acting as sand in the gears of meaningful progress.

As troubling as that situation is, even more problematic is the fact that we now know better. In recent years, numerous studies have been conducted and reports written that clarify both the seriousness of the threat and the human behavior that is

its cause. For example:

Union of Concerned Scientists

“Detailed measurements of atmospheric carbon dioxide (CO₂) levels have been taken continuously since the late 1950s. The data show that CO₂ levels have steadily increased every year. In 2017, they were 28 percent higher than in 1959, the year CO₂ measurements began at the Mauna Loa Observatory in Hawaii.

“What’s more, scientists have detailed records of past CO₂ levels from ice core studies, which show that CO₂ levels are higher today than at least any point in the last 800,000 years.

“CO₂ absorbs heat reflected from the Earth’s surface — heat that would otherwise pass freely into space. The CO₂ then releases that heat, warming the Earth’s atmosphere.”²⁸

NASA

“The heat-trapping nature of carbon dioxide and other gases was demonstrated in the mid-19th century. Their ability to affect the transfer of infrared energy through the atmosphere is the scientific basis of many instruments flown by NASA. There is no question that increased levels of greenhouse gases must cause the Earth to warm in response.

“The planet’s average surface temperature has risen about 1.62 degrees Fahrenheit (0.9 degrees Celsius) since the late 19th century, a change driven largely by in-

creased carbon dioxide and other human-made emissions into the atmosphere. Most of the warming occurred in the past 35 years, with the five warmest years on record taking place since 2010. Not only was 2016 the warmest year on record, but eight of the 12 months that make up the year — from January through September, with the exception of June — were the warmest on record for those respective months.”²⁹

National Geographic

“Scientists already have documented these impacts of climate change:

- Ice is melting worldwide, especially at the Earth’s poles. This includes mountain glaciers, ice sheets covering West Antarctica and Greenland, and Arctic sea ice. In Montana’s Glacier National Park the number of glaciers has declined to fewer than 30 from more than 150 in 1910 ...
- Precipitation (rain and snowfall) has increased across the globe, on average. Yet some regions are experiencing more severe drought, increasing the risk of wildfires, lost crops, and drinking water shortages.
- Some species—including mosquitoes, ticks, jellyfish, and crop pests—are thriving. Booming populations of bark beetles that feed on spruce and pine trees, for example, have devastated millions of forested acres in the U.S.”³⁰

There is simply no disputing what is happening before our very eyes. Climate science isn’t fake; climate controversy is. The vast majority of America’s scientists, citizens, government officials and even its elementary and high school students now see and acknowledge the danger.

The Earth’s climate is changing and that reality, in turn, is negatively affecting the quality of human life on the planet. While it is not (yet) an existential threat,

adverse weather is certainly much more than an occasional irritant. It is undermining individual health, stressing water supplies, damaging crops and curtailing commercial development. The resulting disruption and cost are already substantial, but they will pale in comparison to the consequences of doing nothing more than what is being done today. Allowing climate change to go unchecked – or worse, continuing behaviors that accelerate it – will ravage large swathes of the planet and eviscerate the human condition everywhere.

Projections Become Reality

In 2007, the UN's Intergovernmental Panel on Climate Change (IPCC) made the following observations regarding expected changes in regional quality of life.³¹ Over the next twelve years, those projections became reality.

Latin & South America

The 2007 IPCC Projection

“Changes in precipitation patterns and the disappearance of glaciers are projected to significantly affect water availability for human consumption, agriculture and energy generation.”

Today's Reality

In 2017, *The Guardian* newspaper reported that, “In Bolivia, Peru and Ecuador disputes over water shortages are part of a wider fight for equal access and shared responsibility ...”

The newspaper also interviewed Evo Morales, Bolivia's first indigenous president, describing his election as due in large part to the country's ongoing water crisis.

“Bolivia’s glaciers are melting; they have probably lost 40% of their ice because of climate change. But the water in the reservoirs for cities mainly comes from rains, not glaciers,’ he says. ‘If this drought continues and it does not rain, [usually between November and April] we will have a serious political crisis.’”³²

The European Union

The 2007 IPCC Projection

“In Central and Eastern Europe, summer precipitation is projected to decrease, causing higher water stress. Health risks due to heat waves are projected to increase.”

Today’s Reality

In 2019, Weather.com reported that, “A total of eight deaths are being blamed on the scorching, record-breaking heat wave blanketing much of Europe.

“The news agency Europa Press reported that at least two people have died in Spain from the heat, according to the Associated Press. Authorities in France are also linking at least four deaths to the heat, the AP reported ...

“In addition, at least two deaths are being reported in Italy due to heat stroke. Milan, one of Italy’s biggest cities and financial capital, saw power outages on Saturday as people demanded air conditioning. Visits to local hospitals rose due to heat-related illnesses.”³³

Asia

The 2007 IPCC Projection

“Coastal areas, especially heavily-populated mega-delta regions in South, East and Southeast Asia, will be at greatest risk due to increased flooding from the sea and in some mega-deltas flooding from the rivers.”

Today’s Reality

In 2011, the Pacific Disaster Center reported that “Thailand, Cambodia, Vietnam and other Southeast Asian countries continue to battle flooding as a result of prolonged monsoon rains, typhoons and storms. Torrential precipitation and overflowing rivers have affected over nine million people, in what are being called the worst floods in more than 50 years.

“The number of people now affected by flooding in Southeast Asian [sic] has jumped to 9.5 million people. Since June, almost 20 million people have been affected by the floods in five countries. The number of people affected has risen dramatically because the affected population in Thailand has doubled to 5.3 million in the last week, which is due to new areas in Bangkok becoming inundated, areas of high population density.”³⁴

Africa

The 2007 IPCC Projection

“Agricultural production, including access to food, in many African countries and regions is projected to be severely compromised by climate variability and change.”

Today's Reality

In 2017, *The New York Times* reported that, “Scientists say large stretches of Africa are drying up, and they predict more desertification, more drought and more hunger. In a bad year, maybe one country in Africa will be hit by famine. This year, famine is stalking three, pushing more than 10 million people in Somalia, Nigeria and South Sudan to the brink of starvation ...”

“Large groups of people are on the move, desperate for usable land. Data from NASA satellites reveals an overwhelming degradation of agricultural land throughout Africa, with one recent study showing that more than 40 million Africans are trying to survive off land whose agricultural potential is declining.”³⁵

For Americans, these distant tragedies and disruptions are troubling but not threatening. They are cause for concern, for financial aid, for volunteerism, for the traditional compassion we have shown to others time-and-time again. We care about what is happening elsewhere in the world, but we don't see a connection between those situations and the quality of our own lives. They are distant crises – not unimportant, to be sure, but also not personal. America has always been protected by the immense scale of its natural barriers – the oceans and lakes, deserts and rivers that surround it – and they ensure that bad things happen “over there” and not here at home. It has always been a comforting feeling of separation, but now, according to the IPCC, it is a false sense of security. A Maginot Line of protection. America will not be spared. The USA will also be ravaged by climate change.

Ominous in the USA

More recent IPCC projections in 2017 were just as ominous for North America, in general, and the United States, in particular, as the 2007 projections were for the rest of the world. The group wrote that:

“All of North America is very likely to warm during this century, and the annual mean warming is likely to exceed the global mean warming in most areas. In northern regions, warming is likely to be largest in winter, and in the southwest USA largest in summer. The lowest winter temperatures are likely to increase more than the average winter temperature in northern North America, and the highest summer temperatures are likely to increase more than the average summer temperature in the southwest USA.

“Annual mean precipitation is very likely to increase in Canada and the northeast USA, and likely to decrease in the southwest USA.”³⁶

Less than two years later, the projection of a harsher climate had become a real and omnipresent threat to lives and livelihoods in all fifty states. It is maiming the physical wellbeing and mental health of millions of Americans and causing billions of dollars in damage to physical assets – from homes and farms to warehouses and factories, from roads and bridges to schools and city parks. Indeed, the country seems to be lurching from savage winter storms to an increasingly lengthy forest fire

season, from more frequent and violent hurricanes to larger and more destructive tornado clusters, and from unrelenting rain and floods to rising sea levels and disappearing beaches.

Even with all its wealth, technological prowess and other resources, the resulting destruction is staggering. In June of 2018, for example, severe storms with baseball size hail hit Denver, Colorado and, in the space of just two days, caused an estimated \$2.2-2.3 billion in damage.³⁷ Moreover, as staggering as that figure was, it did not include the enduring distress and financial strain of those who lacked adequate insurance to repair their homes or those who were left without a paycheck because their employers could not reopen.

Sadly, however, the event was not an outlier or even that extraordinary. Day after day, Americans opened their newspapers or logged onto their favorite news site and saw a seemingly unending recitation of climatic disasters. An angry planet had not cooled off.

Here's what just some of the headlines were each month of 2019:

In January

*Now, California Wildfires Burn All Year*³⁸

In February

*'Historic' Storm Hurls Huge Waves and 191-mph winds at Hawaii, rare snow hits Maui*³⁹

In March

*Flooding Has Already Killed Dozens in the United States in 2019*⁴⁰

In April

*Hurricane Michael Was a Category 5 at Landfall, Only the Fourth in U.S. Records, National Hurricane Center Says*⁴¹

In May

*More than 50 tornadoes rip through central US, leaving one dead and at least 130 injured*⁴²

In June

*120 degrees in the shade?! Record-breaking, ‘dangerous’ heat wave bakes western U.S.*⁴³

In July

*16 tornadoes touched down in Wisconsin during weekend storms, weather service reports*⁴⁴

In August

*Largest Hail in Colorado’s History Recorded in Bethune*⁴⁵

In September

*4 feet deep: Historic ‘winter’ storm means September snow day for kids in Browning, Montana*⁴⁶

In October

*U.S. Has Already Had 10 Billion-Dollar Weather Disasters in 2019, NOAA Says*⁴⁷

In November

*Multiple Pileups Close Ohio Roads as Snow Moves East; Storm Claims at Least Six Lives*⁴⁸

In December

*Tornadoes leave train of damage in Mississippi. Louisiana, Alabama*⁴⁹

The physical and financial devastation of these and many other weather-related incidents is impossible to ignore. No city or town, no state or region has been spared. The temperate climate with which America has always been blessed – an advantage we have largely taken for granted and done little to protect – seems suddenly

to have disappeared. In its place, we now live with weather patterns that are more unpredictable and unquestionably more dangerous to each and all of us.

This new and portentous reality – an unending threat to one’s home and hometown, business and workplace – has created a mental health syndrome that has been described as “climate anxiety.” It afflicts wide swathes of the population, yet still has no official clinical definition. That may soon change, however, as the condition has now received a formal name and a preliminary description. It is called *solastalgia* and defined as “the distress that is produced by environmental change impacting on people while they are directly connected to their home environment.”⁵⁰ Unlike with intelligent technology, it’s impossible to indulge in a Neverland or Suit of Armor Fallacy and fool oneself into thinking there’s nothing to worry about. The climate is an unavoidable experience, and some, maybe even many people are unable to cope.

The symptoms of this syndrome are evident just about everywhere. Americans now obsessively check their local weather forecasts online and look over their shoulders at the looming skies in their neighborhoods with a knot in their stomachs. They pack go-bags during fire and hurricane seasons and overwhelm cell service checking on relatives whenever climatic disasters occur. The anxiety has become so widespread that the American Psychological Association has released a 69-page booklet to help mental health workers deal with those who are struggling to adjust. What those individuals and every other American sees, what they cannot avoid or turn away from is the overwhelming horror of a waking nightmare – the rage of an abused and violated planet and the indifference of political leaders content to act as latter-day Neros.

People Are the Perps

While the dispute about the existence of climate change has significantly moderated in recent years, there is still considerable disagreement about its cause. That debate has been exacerbated by confusion over the meaning of and differences between climate change and the term global warming.

Global warming

Global warming describes the rise in temperature on the earth's surface. In most cases, the readings are presented as a global average and compared to the estimated level in the mid-1800s, when the industrial era with its unrelenting cravings for ever-increasing amounts of energy began.

Climate Change

Climate change has a broader definition that includes both global warming and the effects that phenomenon is having on weather patterns that extend for at least several decades and could last for millions of years. It is the persistent reality of a planet that is resetting its natural conditions in ways that harm humankind.

The disagreement about the cause of global warming and its impact on climate change actually begins with an emerging consensus. Given the preponderance of data and human experience, there's now widespread agreement that such a cause does actually exist. Something has precipitated global warming. It is not a naturally occurring phenomenon. The worldwide rise in the earth's surface temperature and the adverse weather that has accompanied it are not simply cyclical variations in normal climatic patterns that will return to their historical norms all by themselves.

It is the identity of the cause that is now the epicenter of the climate debate. The dispute largely revolves around the role of humans. There are those who see humans as the principal or even sole source of this new normal of extreme weather, and those who assert that humans are only modestly at fault, if at all. Sadly, these views are so strongly held by their proponents that there is little likelihood of any meaningful compromise, at least in the short term. As always in human affairs, ego and economics are as influential in shaping human opinion as evidence and experience.

Nevertheless, the tide of public support has largely swung behind those who point to human behavior as the principal cause of our climatic crisis. For example, in two polls conducted in 2019 by CBS News and The Washington Post/Kaiser Family Foundation, an average of 75 percent of the respondents agreed that human activity bears a lot or some responsibility for climate change. And, over half (56 percent) also supported immediate action to correct the problem.⁵¹

At this point, the most comprehensive and credible analyses of the root cause of global warming, have been conducted by the UN's Intergovernmental Panel on Climate Change. As early as 2013, its research pointed directly at human activities as the source of global warming. Its report that year concluded – with a 95 percent level of confidence – that 100 percent of the global warming over the past 60 years has been caused by the ways our species lives, farms, ranches, entertains, heats, cools, transports and produces for itself.⁵²

Since then, a Climate Science Special Report issued in 2017 by a committee composed of representatives from the National Oceanic & Atmospheric Administration (NOAA), the National Aeronautics and Space Administration (NASA), and the Department of Energy (DOE) detailed similar findings. It noted that “it’s extremely likely that human activities, especially emissions of greenhouse gases, are the dominant cause of the observed warming since the mid-20th century.”⁵³

And in 2019, National Geographic published an online article entitled “Causes of global warming, explained.” It stated that “The average temperature of the Earth is rising at nearly twice the rate it was 50 years ago. This rapid warming trend cannot be explained by natural cycles alone, scientists have concluded. The only way to explain the pattern is to include the effect of greenhouse gases (GHGs) emitted by humans.”⁵⁴

Given this preponderance of evidence from reputable sources, it is not only prudent but essential that we identify and address the human behaviors that are the most likely causes of global warming. Indeed, given the billions of dollars already being spent on restoring homes and businesses as well as roads and bridges and other infrastructure damaged by climatic episodes, pinpointing these activities and doing something about them is less costly in the long run than doing nothing at all. And, even if the conclusion is off the mark – even if humans are only partially to blame – failing to do anything is worse than doing something that may only mitigate but not solve the problem. Such a response at least buys us time to determine and then address whatever other causes there may be. It would be the first if not the final step to a true and enduring solution. Most importantly, addressing the human causes of global warming establishes us as the masters of our own destiny, while ignoring those causes simply sets us up to be their victim.

Moreover, there’s no mystery about what those behaviors are. We know exactly which human activities are most at fault for the rise of carbon dioxide in the atmosphere. They’ve been discussed in countless publications and were included in

a list of the top ten CO₂ sources posted on Sciencing.com. Of those ten, all but two – shown without bold below – were the direct result of human behavior. In order of their impact, they were:

Power Plants

Transportation

Farming

Deforestation

Fertilizers

Oil Drilling

Natural Gas Drilling

Permafrost

Garbage

Volcanic eruptions⁵⁵

The way we heat our homes, the vehicles we choose to drive, the methods we use to grow our food, the trees we cut down to build homes and shopping malls, and the trash we create and discard – all and more of the decisions and actions We the People take – are adding to the Earth's surface temperature and to the severe weather it generates in response.

When Will It Start?

Admittedly, America has more than just global warming and climate change to worry about right now. High levels of unemployment in some segments of the workforce even as employers struggle to fill jobs in some sectors of the economy, the lingering effects of the Covid-19 pandemic in school children and some cohorts of the adult population, and divisive politics that exacerbate tensions between economic classes and social strata are grave and urgent concerns at home, while an increasingly aggressive Russia, expansionist China, fanatical Iran, and erratic North Korea pose ever present challenges abroad. It would be tempting, therefore, to see the environmental situation as less of a priority, as something that can be put off until those more pressing issues are resolved. That would be a mistake, a terrible miscalculation based on an incorrect assumption. It would leave us unprepared for the Climatic Singularity because it assumes we won't reach that historic doorway any time soon, when in fact we will.

The Climatic Singularity is that moment in time when human activity will have so heated the surface of the Earth that it becomes permanently harmful to humans. As is also the case with the Technological Singularity, it is a tear in the fabric of human history. Passing through it introduces an irreversible change to the Earth's climate that will forever diminish the wellbeing of humankind in general and the citizens of the United States in particular.

To determine how close we are to such an existential passage – to assess how

much the Earth has already warmed and the trendline for continued escalation absent significant and immediate intervention – the signatories to the 2015 Paris Agreement directed the IPCC to identify and assess the relevant studies and literature that credible experts have produced to date.

In conducting its analysis, the IPCC employed a team of 91 scientists from 40 countries who examined over 6,000 peer-reviewed scientific studies as well as other technical and socio-economic literature. Its report, issued in October of 2018, concluded that “Human-induced warming has already reached about 1°C (1.8°F) above pre-industrial levels at the time of writing of this Special Report.” With the rise of just another half a degree – when global warming tops 1.5° C (2.7° F) – humans will have reached the point of no return. We will have breached the Climatic Singularity. And that development, the report declared, is just around the corner.

“If the current warming rate continues, the world would reach human-induced global warming of 1.5°C around 2040.”⁵⁶

That date – 2040 – is significant not only for its climatic implications, but also because of its connection to the advancement of intelligent technology. At the very same moment the Technological Singularity starts humankind’s unstoppable descent into near universal unemployment, the Climatic Singularity will begin its inescapable decline into near continuous ruination. As Hans-Otto Portner, Co-Chair of one of the IPCC Working Groups, put it, “Every extra bit of warming matters, especially since warming of 1.5 degree C or higher, increases the risk associated with long-lasting or irreversible changes ...”⁵⁷ In other words, once the Earth passes through that threshold, it will never, ever get cooler again. It will be forever warmer. The planet will not have moved any closer to the sun, but we will have trapped more of its heat within the atmosphere. Humans will have joined the frog in the pot of boiling water.

While what actually happens to the frog is in dispute, there is no doubt about what a warming Earth will mean for humankind. It will be debilitating and even

potentially harmful to many of us. At the 1.5°C level, 14 percent of the Earth's population will endure a severe heatwave at least once every five years. Should the temperature rise just 0.5°C more to 2.0°C warmer, the distressed percentage of the Earth's population more than doubles to 37 percent. And, who will suffer the most? According to the IPCC, it's most likely to be the people living in central and eastern North America as well as other locales in Europe, Asia and Africa. Americans, no less than those living in other regions of the globe, will experience the hottest of these rising temperatures.⁵⁸

To save ourselves – to preserve our quality of life – Americans will first have to set realistic expectations. Not only will remediation be costly and disruptive – not only will it require inconvenient and even unpleasant changes – it will also be limited in its effectiveness. Tragically, even if we begin right now – even if we launch corrective initiatives early in the Sweltering Twenties – it will be too late to undo much of what has already been done to the Earth's environment. Even if we immediately stop all production of carbon dioxide, we would be unable to return the planet to the more benign climate of just fifty years ago.

As Richard B. Rood at the University of Michigan put it, “Once we release the carbon dioxide stored in the fossil fuels we burn, it accumulates in and moves among the atmosphere, the oceans, the land and the plants and animals of the biosphere. The released carbon dioxide will remain in the atmosphere for thousands of years.⁵⁹ Sadly, we humans have already permanently scarred the Earth. There will be no full recovery, no restoration to what once was. All we can do now is contain the scope and scale of the devastation.

Moreover, the time we have to do so is short and growing shorter. Our opportunity to effect genuine remediation diminishes every year we get closer to 2040, every day the Climatic Singularity draws nearer. Failing to act immediately inevitably exposes us to a cataclysmic new reality. As hyperbolic as such an outcome may seem, it is in keeping with the expressed views of some of the country's most prominent

scientists. In their *Proceedings of the National Academy of Scientists of the United States of America*, they speculate that crossing the 2040 time line without significant changes in human behavior will introduce an entirely new geological epoch they call the Anthropocene.⁶⁰

This devolutionary period will change our temperate planet into a “Hothouse Earth.” Americans will bake in every region of the country, even as they endure record-setting droughts and forest fires in the west and epic rains and floods in the midwest. The heat will scorch us in every state of the Union even as we experience swarms of tornadoes and brutal deluges of hail in the southwest and caravans of massive hurricanes and super storms in the southeast, Mid-Atlantic and New England.

As the scientists conclude, “Humanity is now facing the need for critical decisions and actions that could influence our future for centuries, if not millennia.”⁶¹ In effect, 2040 marks an existential dimension shift – a destination with no return address – that will launch us toward an entirely new climate reality. Once we pass through that breach, the weather will, for the first time in our history, diminish rather than promote the quality of life and welfare of our entire nation.

A Diminished Quality of Life

The Climatic Singularity is more than a symbolic point in time; it is a factual reality. It is the moment at which all humans and Americans, in particular, will truly and forever surrender their ability to recover from adverse weather events. The era in which we enjoyed good weather interrupted only occasionally by a passing thunder storm or even a terrible but always temporary heat wave will be over. Injurious weather will be constant and increasingly destructive and, as a consequence, foreclose our ability to fully and beneficially reestablish what was once our accepted standard of living. There will be no going back to the good old days, but instead, an irreversible slide into a new kind of existence with days that grow ever more challenging and harmful. In 2040 and beyond, Americans will no longer relish their climate, they will struggle to protect themselves from it.

No matter what we do after that threshold is breached, no matter how much money we spend or what government initiatives we launch, it will be impossible to return to the benign climate that has favored our nation for its entire recorded history. Once the 1.5°C (2.7°F) mark is passed, people everywhere – including the USA – will experience a radically hostile environment that continuously reduces their state

of being. It will be a time of unending degradation both in how they live and in what they can expect from their planet.

Britannica defines quality of life as “the degree to which an individual is healthy, comfortable, and able to participate in or enjoy life events.”⁶² While other definitions are similar in substance if different in word choice, there’s less consensus about what leads to such a state. Indeed, an analysis of scientific papers published from 1992 to 2012 found little agreement on the factors that most contribute to a pleasurable quality of life among humans.⁶³

This dysfunctional variability has two principal causes that are interrelated. First, it appears to be due as much to our subjective judgments as it is to the impact of external factors. Not surprisingly, quality is in the eyes of the beholder, and we make our assessment by measuring our unique life passage against our personal expectations, hopes and needs. Second, in almost every definition, the environment is acknowledged to play an important role, but one that varies from location-to-location. Hot and humid, for example, is a climatic state that is viewed as detrimental to the quality of life in New England, but accepted as the norm and even welcomed in the South. Regardless of where we live, however, inclement weather – especially when it turns violent – is unwelcome, regardless of our life’s circumstances. It almost always prevents us from participating in or enjoying life events. So, while the perception of a quality life may be idiosyncratic to each of us, that perception is directly and substantially affected by our experience of severe weather.

Whatever our age or situation, our education level or social station, we intuitively understand and acknowledge that relationship. At some level, we know that bad weather is described that way because ... well, because it’s bad for and to us. Bing Crosby’s happy refrain about “Singin’ in the Rain” owes part of its popularity to his behavior being so counter-intuitive. For everyone else, the experience of stormy weather is more like that of the cartoon character Joe Btfsplk. He was portrayed with a permanent rain cloud over his head to signal his misfortune in leading a life

filled with bad luck. His creator, the cartoonist Al Capps, simply drew the connection most of us feel between the weather and how pleasant or unpleasant, enjoyable or unenjoyable, fulfilling or unfulfilling our lives can be. And, after the Climatic Singularity, that connection will be reinforced and multiplied. We will all feel as if we've become Joe Btfsppls. Our perspective on the quality of our lives will be forever darkened by the weather.

A Dismal Species

As the latest IPCC report made clear, the temperature of the Earth's surface is rising every year, so determining the impact of that increase on weather patterns will provide a window into what humans' diminished quality of life will look like. Carbon Brief, a UK-based website covering the latest developments in climate science as well as climate and energy policy, conducted an analysis of 70 peer-reviewed scientific studies to quantify exactly how the weather will change as a result of breaching the 1.5°C (2.7°F) threshold.⁶⁴

Temperatures in the continental United States will rise by an average of 2°C, ranging from lows of 1.8°C in the south and southeast to highs of 2.3°C in the midwest and 2.4°C in the northeast. Warm spells will last 15 days longer in western North America – Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming; 10 days longer in central North America – Alabama, Arkansas, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, Texas, West Virginia, and Wisconsin; and 9 days longer in eastern North America – Connecticut, Delaware, Florida, Georgia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, South Carolina, Vermont and Virginia.

In addition, those hot spells will occur much more frequently. When compared to their past experience, people will bake in the heat 131 percent more frequently in western North America, 103 percent more frequently in central North America and 121 percent more frequently in eastern North America. And unlike in the past, there won't be any reprieve in the fall, winter or spring. The rising temperature will cause the frequency of cold extremes to go down dramatically during those seasons. They will occur 42 percent less frequently in western North America, 44 percent less frequently in central North American, and a whopping 61 percent less frequently in eastern North America.

All of that unrelenting heat will inevitably cause an increase in incidences of heat-related illnesses – from heat exhaustion, heat cramps and sun stroke to respiratory and cardiovascular illnesses and even death among vulnerable populations such as the elderly and infirm. It will also prevent even healthy individuals from participating in or enjoying outdoor athletic and recreational activities. Baseball games and soccer matches will have to be canceled; golf courses will see dramatically fewer players on the links; and neighborhood picnics and family reunions will be relocated indoors because it will simply be too hot to stay outside for any prolonged period of time. The joy and healthfulness of activities conducted out-of-doors will disappear and be replaced by the risk and potential trauma that participating in those activities will pose to humans.

Even coming inside, however, won't always be a solution. Prolonged heat spells will also strain and potentially overwhelm the ability of public utilities to provide the power necessary for cooling. According to the U.S. Environmental Protection Agency, "Research shows that electricity demand for cooling increases 1.5–2.0% for every 1°F (0.6°C) increase in air temperatures."⁶⁵ While seemingly small, such increased demands across an entire city, state or region will likely lead to brownouts and rationed power, diminishing even further the quality of life. In effect, Americans will increasingly live like people on the Colonial frontier rather than like the inhabitants of modern, IoT-enabled homes.

The unforgiving climate and the unrelenting disruption it causes will also undermine people's general wellbeing. Here again, the research is conclusive. For example, Patrick Kinney, a professor of urban health and sustainability at the Boston University School of Public Health, has led a number of research efforts to understand how air quality will be affected by shifting weather patterns. His studies have determined that "a warming climate will lead to more severe air pollution," and as a consequence, "while we've been damaging the Earth's climate system ... we've also been damaging our own health in the process."⁶⁶

The buildup of carbon dioxide and other greenhouse gases will dramatically raise the level of both pollutants and pollen in the air across much if not all of North America. As a result, the Natural Resources Defense Council estimates that "the health of nearly 127 million Americans is threatened by both smog pollution and ragweed pollen, which can worsen respiratory allergies and asthma."⁶⁷ Objections to the inconvenience of wearing a mask during the Covid-19 pandemic will seem laughably childish when compared to the draconian protections Americans will have to take when they venture outside after we pass the Climatic Singularity.

And, that's true only for those who will still be able to make such treks. Four-out-of-ten Americans will be forced to curtail their careers, their favorite recreational activities and even the length of time they spend outdoors. Mail carriers won't be able to deliver the mail. Carpenters will no longer be able to build or repair homes. Retail stores will sit empty because sales associates can't endure their commute and consumers are unwilling to venture out. Schools will shorten their schedules because it's too unhealthy for many children to be outdoors or to sit in classrooms with inadequate air filtration. And, botanical gardens and zoos, museums and art galleries will shutter their doors because it's simply too dangerous for people to get to them and even more dangerous for them to linger at the exhibits and in their once crowded outdoor cafes. Americans will go from being a generally active and healthy tribe to a dismal species that is perpetually overheated and gasping for clean air.

The Teeth of the Crisis

About 71 percent of the earth's surface is covered by **water**. On the land that blankets the remaining 29 percent, changing weather patterns will transform water into a double-barreled threat to human life. Paul Dickenson, the CEO of the Water Disclosure Project, conducted by the Carbon Disclosure Project, described the situation this way:

“Much of the impact of climate change will be felt through changing patterns of water availability, with shrinking glaciers and changing patterns of precipitation increasing the likelihood of drought and flood. If climate change is the shark, then water is its teeth and it is an issue on which businesses need far greater levels of awareness and understanding.”⁶⁸

Too much rain can pollute natural water supplies, while too little can undermine the sustainability of those resources. The Climatic Singularity will cause both throughout the country. Year-after-year, flood prone farms and towns will be inundated by the rain-swollen Mississippi and Missouri Rivers. When the water finally recedes, it will carry fertilizer and pesticides back into the two rivers, contaminating water supplies and causing shortages of potable water in the cities and towns downstream. At the same time, California and other western and southwestern states that are already experiencing droughts will find their water supplies shrinking as sustained rain becomes even less frequent and water is consumed putting out ever more forest fires. Shortages will break out, especially in the largest cities of these states,

forcing them either to ration its availability or find additional and more expensive sources.

On the east coast, Miami faces a similar crisis, but with a different twist on the impact of climate change. Its challenge isn't too much or too little rainfall, but the rising level of the sea. The city sunbathes on Florida's Atlantic coast – it is literally a beachfront community – and yet, it's about to experience a shortage of water. Its municipal supply is being contaminated by salt water pushed in by ever-higher tides caused by melting Arctic ice and storm water runoff. With no way to stop that infiltration – in fact, its rate is actually increasing – the city is facing the very real specter of not having enough drinking water for its inhabitants. As a result, it is now being forced to search for an external source or sources to make up the shortfall.⁶⁹

Resorting to outside supplies of water, however, may not be a practical solution, even on a temporary basis. Newark, New Jersey offers a telling case in point. In 2019, the drinking water in certain sections of the city was found to be contaminated by decaying lead pipes in the water system. To buy itself some time to develop an affordable long-term solution, the city government implemented a temporary fix: trucking in bottled water for the residents of the affected areas. Unfortunately, that seemingly reasonable response unleashed a string of unanticipated problems.

When the first shipment of water arrived, the plastic bottles were determined to be past their expiration date and the entire shipment had to be returned to the manufacturer. Then, when the replacement supplies arrived, city officials realized there was no way to distribute the water except by requiring residents – including the elderly and frail – to go to a designated pick up point, confirm their city address and lug two cases of bottles back home with them. It was an onerous burden, even for the young and healthy, but the plan worked. Nobody went thirsty. Residents ignored their faucets and relied instead on plastic bottles of water. And that introduced yet another problem.

Despite efforts to be careful about the disposal of the resulting plastic debris, human behavior turned it into a pollution disaster for the entire state. Since the city had distributed the water for free and, therefore, offered no refund for returning the non-biodegradable bottles, many ended up clogging rivers and streams as well as the intake and distribution pipes of the state's water system. City residents, of course, should have been more responsible and many were, but still, the damage was done. There was litter, litter everywhere and it couldn't have happened at a worse time. The entire Northeast was dealing with a serious drought, and water levels in reservoirs and rivers were already perilously low. The plastic bottles of water slackened the thirst of Newark's residents, but once their contents were consumed, they exacerbated an even more severe water crisis that threatened the quality of life for every person in the state of New Jersey.

Ultimately, the city was able to muddle through, but not without layering one misery – an inadequate water replacement strategy – on top of another – an unreliable municipal water system – on top of another – an endangered statewide network of reservoirs and rivers. Like the cinematic buildup of dramatic tension, the solution to one quality of life challenge created another challenge and yet another after that. It was the trailer for an enviro-climatic disaster that will soon be released in all of our lives. Humans cannot survive without water, but assuring its purity and availability will be an existential struggle – an epic campaign for survival – after the Climatic Singularity.

Another Wave of Starvation Immigrants

Climate change-driven water shortages are already a reality in a growing number of America's cities and towns. Sometimes, the situation is episodic as was the case during and after the 2021 snow storms in Texas. And in other cases, the situation is fast approaching a permanent condition as it is in Miami. In every case, however, the reality is the same. The Climatic Singularity is still almost twenty years in the future, yet already, millions of the country's citizens are facing a degraded quality of life because they lack reliable access to clean drinking water.

In contrast, another basic need – nourishing food – is still generally available in the U.S., though reliable access to it is no longer taken for granted. The Covid-19 pandemic has made even Americans vulnerable to food insecurity. Climate-driven shortages, in contrast, will be much more severe and long-lasting. As terrible as they will be, however, they will not threaten this country, at least not at first. Based on current research, it's likely that hunger will occur in other places and devastate other people. It will be a distant tragedy, but one with a peculiarly familiar aspect that could expose us to a different yet no less real danger.

Anglia Ruskin University's Global Sustainability Institute developed and ran a scientific model to look at what the global food supply would be like in 2040, if no

meaningful climate remediation occurred. The Director of the Institute, Dr. Aled Jones, described its findings in an interview:

“The results show that based on plausible climate trends, and a total failure to change course, the global food supply system would face catastrophic losses, and an unprecedented epidemic of food riots.

“In this scenario, global society essentially collapses as food production falls permanently short of consumption.”⁷⁰

Millions of people who have never before known hunger will suddenly be facing the reality of going without meals for days on end. Even more horrific, this situation will not be temporary but permanent. It will go on year-after-year-after-year. Eventually, the hungry masses will look north or across oceans and see an America that has been blessed with agricultural bounty and a harvest that, while diminished by climate change, is still more than enough to feed its people. They will see a shining light of survival – a land of plenty upon a hill – and its allure will be irresistible. The availability of food in the United States will inevitably attract an unending stream of starvation immigrants to the nation’s borders. And, that migration has already begun.

According to the Food and Agricultural Organization of the United Nations (FAO), climate change is even now forcing hunger on 3.5 million people in Guatemala, Honduras and El Salvador. A five-year long drought has led to catastrophic crop failures creating food shortages that force rural farmers out of their homes and into the region’s cities. There, gangs and governmental corruption preclude any relief, so the farmers turn to the only safety net they can see and join the so-called caravans heading north, trudging toward the sole beacon in the darkness of their lives.⁷¹ As one diplomat in the region put it, “Climate change and its consequences have resulted in more and more people seeing emigration as the only way out.”⁷²

Some frame this situation as a uniquely contemporary occurrence. They describe it as a 21st century problem. It's not. These starvation immigrants aren't perpetrating a never-before-seen assault on America's borders, but instead are repeating an American demographic tradition. According to the Constitutional Bill of Rights Foundation, the Irish Potato Famine created a remarkably similar situation. It notes that "Between 1845 and 1855 more than 1.5 million adults and children left Ireland to seek refuge in America. Most were desperately poor, and many were suffering from starvation and disease. They left because disease had devastated Ireland's potato crops, leaving millions without food." And they weren't alone. A wave of almost 111,000 Norwegians fled crop failures and famine to settle in the United States after the Civil War.⁷³ And in the late 1860s, flooding rains and then drought pushed almost 60,000 Swedish farmers off their land and into yet another mass migration wave to America.⁷⁴

In fact, America has always been a refuge for those facing hunger and deprivation. The Climatic Singularity, however, will cause an historic level of suffering – a global outbreak of hunger that will far outstrip even the 2020 Covid-19 pandemic in its reach and impact. Unlike those previous "waves" of immigration, it will produce an endless high tide of starving people desperately trying to reach a country that, even in the face of a hostile climate, still has the means to feed its inhabitants. That sufficiency of food, in itself, will be so rare, so tantalizing, so fundamental to one's quality of life, that it will surpass the country's democratic ideals as the principal reason for the world's huddled masses to seek shelter there. Freedom from starvation will be as central to the world's view of America as its commitment to freedom of speech and religion.

After the Climatic Singularity passes, however, so many will be hungry and set their sights on that ideal – so many will be forced to become starvation immigrants – they will overwhelm the country's ability to manage their arrival and integration effectively. Failing to avoid the climate crisis inevitably signals a parallel failure to prepare for its consequences. As a result, what could (and should) be a cause for

compassion and generosity will, instead, become a threat to America's security and wellbeing. Its borders will be no more than thin lines on a map as tens of thousands of starving people storm across them in search of food. Walls, drones and other technology won't hold them back. Post capture incarceration and cruel judicial practices won't put them off. Treaties with Mexico, the Caribbean islands and many nations in Africa won't discourage or dissuade them. And, even the deployment of the U.S. Armed Forces won't be able to stop them. Starvation will once again season the American melting pot.

America the Brutal

Thirst and hunger, insecurity and impoverishment will be the hallmarks of life on an angry planet. The fouling of its air, water and soil and the resulting degradation of the Earth's climate are a direct assault on the two foundational tiers of Abraham Maslow's hierarchy of human motivation: their innate drive to meet both their physiological and safety needs. Human life depends on having dependable and ongoing access to clean air, potable water and food, as well as the physical and emotional security and good health they promote. Life can exist, at least for a while, without those basic elements, but it would be short and brutish and prevent altogether the ability "to participate in or enjoy life events."

Moreover, the Climatic Singularity will spare no one, not even a land as blessed as ours. The result of passing that point of no return will be a reality that is both terrible and historic: an America that is not beautiful but brutal. And, it will happen not at some far distant time in the future, but within the lifetime of almost every American alive today. Regardless of our class or income, station or standing, education or accomplishments, We the People will experience a societal reset so profound, it alters our very existence.

This devastating shift in our planet's climate will rip us from the physical wellbeing and security of modern American life and thrust us backward into a more primitive reality. The Earth will become a virtual time travel platform and carry us

to a life similar in quality to that of our ancestors on the Colonial-era frontier. We will face a daily struggle merely to survive, but unlike those ancestors, we will do so with the beauty of the land obscured by a choking atmosphere and endless storms. We will be latter day pioneers, but we will be unable to tap the bounty of our homeland or even to appreciate its natural beauty.

We will be forced to search constantly for safe and secure shelter as America's halcyon skies darken and roil with rage. We will have to worry continuously about our next meal as the country's amber waves of grain are battered and torn by tornadoes and pelting rains. We will gasp for clean air at every waking moment as its purple mountains majesty are wrapped in a smothering blanket of forest fire smoke. And, we will be consumed each and every day with anxiety and fear as its enameled plains are pummeled by blizzards in the fall and winter and battered by ferocious storms in the spring and summer.

The first Americans faced enormous challenges in building a life for themselves and their families, but their efforts were almost always aided and abetted by a temperate climate. They faced an untamed land, but one with bright skies, soft breezes and dependable seasons. Future Americans will be thrust back into a struggle for life's basic necessities, but they will be pioneers with a different prospect. They will have to fend for themselves and their families even as they contend with a harsh and often unpredictable climate. They will face a battered land whose goodness will be forever reduced by soaring and plunging temperatures, relentless and absent rains, and storms that are savage and unceasing.

Ironically, the music for that most patriotic of songs – America the Beautiful – was composed by a choirmaster living in Newark, New Jersey in 1883, long before plastic bottles were invented. The words were added shortly thereafter by a college professor teaching in Massachusetts. Neither she nor he could have imagined that less than a century and a half later, their fellow citizens would almost certainly refuse to sing or even listen to their anthem. The juxtaposition of the brutal life imposed on

those men, women and children and such a soaring celebration of the nation's splendor would simply be too painful to endure.

Taxation Without Representation

America the Brutal will impose a heavy toll on America's vitality. The Dictionary offers two definitions for that term: vitality is the power to endure as well as the capacity to live and develop.⁷⁵ It is the sum of each person's progress through the five tiers in Maslow's hierarchy. When a person's basic, psychological and self-fulfillment needs are met, they are at the peak of their being. They are able to live and develop to the fullest extent of their capacity for excellence and to endure in that state indefinitely. It is an existential dimension that cannot be matched by any other species on the planet or by any machine, no matter how intelligent. It can, however, be diminished by a climate crisis, and that degradation is already happening.

Human vitality is critical to and expressed in all aspects of life, but especially at work. While CEOs talk endlessly about its importance, however – opining that “Our employees are our most important asset” – they focus on a more general factor in managing their enterprises. To them, economic power is fueled by productivity, a gauge of efficiency. It's described this way by Investopedia: “Productivity, in economics, measures output per unit of input, such as labor, capital or any other resource – and is typically calculated for the economy as a whole, as a ratio of gross domestic product (GDP) to hours worked.”⁷⁶ Improving labor productivity, in partic-

ular, has long been considered the key to success in a market-based economy. Produce more output per worker, and a company's revenue and profits both rise. Produce the same or, worse, less output per worker, and that company's competitiveness is in jeopardy.

Therefore, while productivity does determine marketplace success, it is itself a function of human vitality. In essence, the sustained ability to live and develop – the building blocks of high performance among humans – is the real foundation of economic power. For the moment, at least, companies can have the most modern means of production – they can deploy state-of-the-art technology and top-of-the-line equipment – and still see lagging productivity if the humans operating and maintaining those assets are not competent and engaged. Whatever else may influence that ratio of output to input, the critical operator in the function is the vitality of an organization's employees. Optimize their capacity for excellence and a company's revenues and profits will rise. Neglect to improve that capacity or, worse, let it degrade, and a company cannot, will not succeed.

Certainly, there are a number of factors that can interfere with this axiom, but the weather has now become the most critical, and its impact is growing. Even well managed companies can see their productivity decline when hurricanes and tornadoes cripple manufacturing plants and businesses, leaving employees unable to perform essential tasks, let alone do so efficiently. No matter how illustrious their track record or how storied their brands, they can struggle when torrential rains and snow storms keep their employees at home and unable to meet manufacturing deadlines or provide effective customer service. The net effect is similar to a pandemic; violent and disruptive weather saps the human vitality out of companies and nothing – not technology or strategy, market cap or business awards – can fill the vacuum.

Since 1980, for example, just four kinds of weather disasters experienced by the country have imposed an economic toll of almost \$1.5 trillion. They are:

Weather Category	Damage
Tropical cyclones or hurricanes	\$870.2 billion
Droughts	\$241 billion
Severe storms	\$219 billion
Inland flooding	\$123 billion ⁷⁷

These climatic events destroyed business facilities, production and office equipment, and wholesale and retail inventories as well as roads and bridges, harbors and railheads, and the power grid and communications infrastructure. As disruptive as that physical damage has been, however, it was the impact on productivity, in general, and on human vitality, in particular, that has had the most long-lasting effect. Severe weather causes physical injury, dislocation, anxiety and depression among workers, and those factors – the markers of weakened vitality – undercut their performance on-the-job. Facilities and infrastructure can be repaired and equipment and technology can be replaced in relatively short order. Human vitality cannot. It is not a plug-and-play resource. Reconstituting the capacity and engagement of a workforce takes much longer and is far more difficult than recalibrating machines and restocking shelves.

That decline in vitality added to the physical damage caused by severe weather represents a real and substantial financial burden on America's companies, whether they are transnational enterprises or Mom and Pop shops on Main Street. It is a toll that some simply assume is now the cost of operating a business on a warming planet. A more thoughtful analysis, however, would reveal that there is an alternative explanation that provides a clearer picture of the situation. Severe weather isn't the original source of the harm done to America's businesses, but is itself the result of another factor. That first cause is the federal government's inability or unwillingness

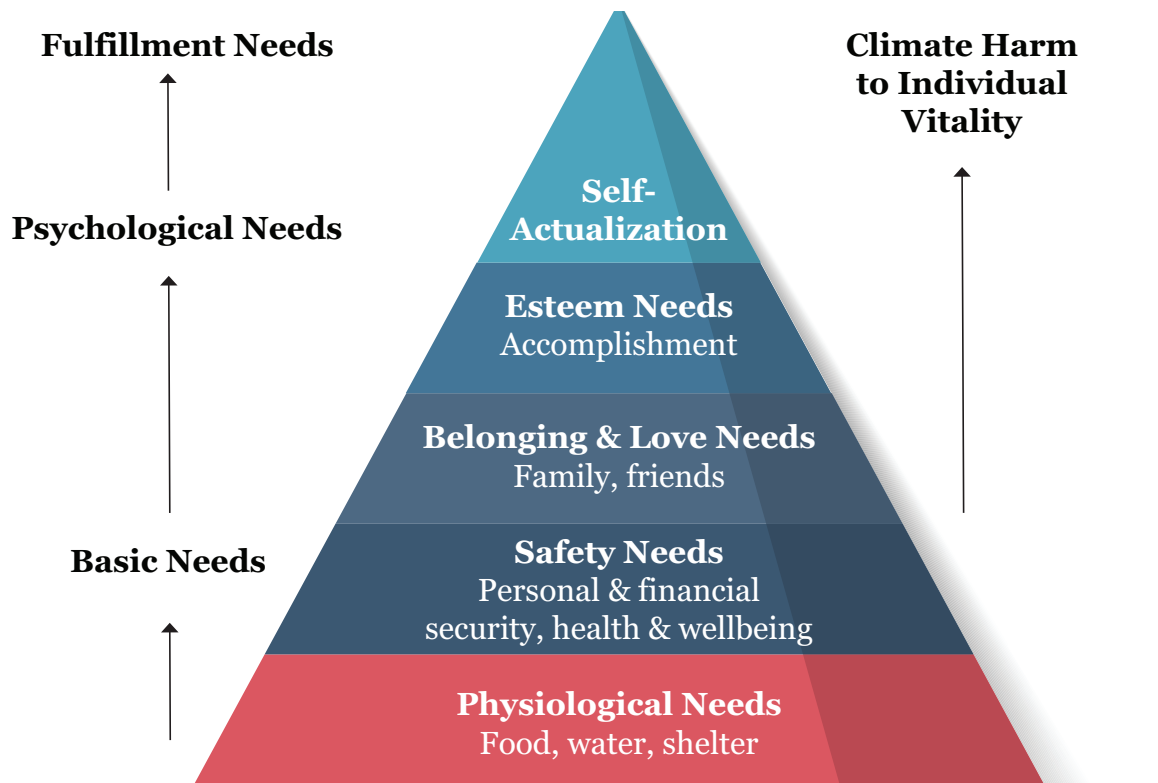
to address global warming and climate change. The cost of that gross failure isn't just another repair bill or insurance expense; it is actually a tax. It is a payment – in lost revenue and profit – imposed on companies by Washington, D.C..

This levy has been described as a “climate disaster tax bill,” which is accurate but incomplete.⁷⁸ To appreciate its full implications, any description of the tax must also acknowledge its origin. It must call out why and how the financial burden has been imposed. Therefore, a more complete and thus accurate name is “the governmental malpractice climate tax.” It is, admittedly, a less-than-mellifluous moniker, but it is nonetheless accurate. While the weather is clearly the driver of inefficient operations and lost human labor, the inaction of our executive and legislative branches in Washington, D.C. is their root cause. The government's failure to address the behaviors (of individual citizens and organizations) that generate severe weather has made those impacts and their costs more certain, more frequent, and more devastating. It is the functional equivalent of sending corporate America a tax-due notice after every disastrous storm, flood and forest fire.

While that toll has diminished the competitiveness of American companies in the global marketplace, however, it has had a far more harmful impact on the country's working men and women. Its most obvious manifestation, of course, is the loss of paid employment. Climate-driven damage to employers' operations and facilities almost always forces them to reduce costs. Their largest single expense and, therefore, the first item on the chopping block is their payroll. Companies start by reducing salaries and then inexorably move on to layoffs. One day, workers have a job and are earning a living; the next, they are unemployed and without a way to pay for even their basic necessities.

An explication of that impact, however, reveals that the harm to individual workers is far more extensive than even the devastating loss of a paycheck. In a temperate climate, workers are able to progress and move up Maslow's hierarchy of human needs, according to their own drive. In a harmful climate, that progress is in-

terdicted and they are forced to move back down the hierarchy. In effect, the governmental malpractice climate tax is also paid in lost individual vitality. People are no longer able to meet the full range of their inherent needs and, as a consequence, have less access to their rights of Life, Liberty and the pursuit of Happiness. As with the ethical violations caused by the unconsidered introduction of SCMs, these obstructions are best illustrated by Maslow's pyramid.



This toll affects individual working men and women across all three meta-levels of the hierarchy.

Basic Needs

Severe weather causes physical and financial harm not only to individuals, but to their family members, as well. The damage to their homes and personal property

as well as the loss of income from a furlough or layoff can significantly reduce their quality of life and introduce oppressive hardships that take months or years to repair and can even be permanent. It is a toll that degrades and potentially eliminates their ability to meet their basic physiological and safety needs.

Psychological Needs

Violent weather can cause facility and infrastructure damage, disrupting business operations and the ability of workers to get to their place of employment. That dislocation, in turn, denies them the opportunity to experience either the camaraderie of working with colleagues and friends or the satisfaction and pride that comes from performing tasks they find challenging and rewarding. It is a toll that destroys their ability to meet their psychological needs of belonging and self-esteem.

Self-Fulfillment Needs

Climate-driven disasters can and already do push people into long-term or even permanent unemployment. That involuntary detachment from the workplace prevents them from developing and experiencing their capacity for excellence – their talent – and applying it in work they consider important and worthwhile. It is a toll which denies them the nobility of being human by preventing their ascension to the apex of Maslow’s hierarchy – humankind’s need for self-actualization.

Amplifying the harm inflicted on America’s workers by the governmental malpractice climate tax is the fact that it provides no benefit in return. Most taxes are justified by and collected with the expectation of their supporting or advancing a public interest.⁷⁹ Americans tolerate taxes because they believe the proceeds will be

used to fund programs that serve the common good, including national defense, social security and the nation's infrastructure. The governmental malpractice climate tax, in contrast, provides no corresponding or compensating benefit, but instead, reduces the vitality of the entire American population. Worse, this tax is a regressive form of misery. Its impact increases as the ability of people to reestablish themselves after a weather event decreases. Those who tend to suffer the greatest injury from severe weather are also the ones who are most likely to lose their jobs and income; they are the working poor, the disadvantaged and underserved, and the most vulnerable among our people.

The physical, financial and emotional burden of this tax is real and injurious and growing. It is levied by the endless wildfires on the west coast, tropical storms and hurricanes on the east and gulf coasts and the derechos and tornadoes in the midwest. Even worse, it is a tax that has never been sanctioned by We the People. It is the 21st century version of **taxation without representation** – a burden imposed on the American people without their approval or even their input.

In earlier times, the proposal to install a tax would have been fully aired and debated, but not today. In the past, Senators and Congresspeople as well as presidents and their administrations would not have dared to institute such a levy without first checking with their constituents. In this century, however, they have not only ignored the American people, they have actually worked against them. Not as some deep state conspiracy, but as a band of self-interested sycophants.

Craving the financial support of giant energy companies, utilities and manufacturers, transportation companies and high tech corporations, they have acquiesced in the harm being done to the human vitality of the country. Laws that would limit and eventually end heat-trapping emissions have been curtailed or reversed. Regulations to reduce pollutants and toxins in the biosphere have been watered down or discarded. Research into clean energy and alternative farming and ranching practices has been reduced to token levels. What is characterized by our elected

officials in Washington, D.C. as bona fide legislative work on behalf of those affected by global warming and climate change is actually fake government – it leaves the tax in place and simply adds yet more hot air to an overheated planet.

For the first time since before our Revolution, Americans are now being forced to pay a tax that has been imposed without our consent. And, without our voices even being heard. It is a turn of events that is unprecedented in our history. We created this nation, at least in part, to prevent such abuses and engaged in acts of resistance when they occurred. The most famous, of course, was the 1773 raid our ancestors conducted in Boston Harbor to express their outrage at a tax the British Parliament had imposed on tea imported into the colonies. In their view, that levy was both onerous and unjust as it had been introduced without consulting with the Colonists who would have to pay it. Almost exactly two hundred and fifty years later, we are once again enduring a tax that has been installed without our agreement or our views even being considered, but this time, its sponsor is our own government.

Tragically, that sovereign malpractice has gone unchallenged, at least to date. We the People are watching the decimation of our vitality – we are experiencing ever-increasing economic insecurity and societal impoverishment – and yet, we have not risen to confront its source. We accept the damage of climate change as perverse weather patterns rather than exercising our duty as citizens to call out the perversion of our democracy. We tolerate our weather-induced pain as simply the cost of living on an overheated planet, rather than stepping forward as citizens and demanding redress from taxation without representation. We point to climate change as our leading cause for alarm in survey-after-survey, yet fail to elect a government that will do something meaningful about it. And as long as that passivity persists, as long as we permit our government's violation of the human vitality with which we are all endowed, the Life we cherish will be diminished, the Liberty for which we stand will be curtailed and the pursuit of Happiness will be a dream we cannot fulfill.

Chapter 4
**A Perfect
Catastrophe**

One Single Existential Assault

The Technological and Climatic Singularities will collide in a mammoth black hole of collapsing disruption – **The Titanicity** – in the year 2040. It will be a perfect catastrophe that changes forever what it means to be a human and what it means to live and work as one. In America and throughout the world. Denoting such a horrific crash smacks of science fiction – of something only Ray Bradbury could imagine – yet its leading edge is already visible, already transforming our lives ... and not for the better.

The Technological Singularity

With a few notable exceptions, economic cycles in the United States have always been reliably predictable. It's been boom, then bust; boom, then bust; boom, then bust since the end of World War II. The good times always peter out, but recovery unfailingly occurs after a relatively brief period of business retrenchment and market correction.

As if to counter the description of economics as “the dismal science,” this cycle has been both understandable and susceptible to management. When a bust is trig-

gered, commercial operations are curtailed and expenses are cut. Workers are laid off, and recruiting stops. Companies hunker down and hang on until the situation improves and the prospects for growth strengthen. And happily, that point never fails to arrive, enabling confidence and optimism to rise, expansion plans to be formulated, budgets to be increased, and business growth to restart. The recovery gains traction and consumer confidence goes up. A boom begins to emerge, and then takes hold. The good times start all over again.

The downturns of the cycle aren't without discomfort, of course; they can linger long enough to be a hardship for many. And, the upturns can be uneven; they can restore employment for some but not for others. And yet, history never fails to repeat itself. What always happens is that the turn in one direction is inexorably followed by a turn in the opposite direction. Boom may become bust, but bust never fails to give way to boom once again.

For working men and women, this economic metronome traces an echo cycle in employment. Work may disappear, but it inevitably reappears. Jobs may be lost, but new jobs can almost always be found once the recovery kicks in. Recruiters come calling, and their opportunities often offer better pay and more generous benefits than what was available previously. Down and out has unfailingly been followed by up and on the way again. It is a sequence as dependable, as integral a part of the nature of things, as the rising and setting of the sun.

And soon, it won't be. In less than two decades, the Titanicity will arrive, and that heartbeat-like rhythm of employment and reemployment will end. The Technological Singularity will signal an existential crisis of intelligent machine domination in the workplace. There will be plenty of jobs, just none for humans. Their opportunities to be hired and paid for their work will disappear. Their careers – at least as they've been defined since the dawn of the industrial age – will end. As a consequence, they will no longer be able to meet their physiological and safety needs. The indigent – once a relatively small and hardly visible segment of the American popu-

lation – will expand to include almost everyone. The desperation of the Great Depression will seem like a bad cold; the disruption of the Covid-19 recession will seem like the sniffles. The Titanicity will feel like a diagnosis of cancer. For every single working men and women and for every person in their families.

How could this happen? Regardless of whether it's characterized as an ethical obligation or savvy leadership, employers will always do what's in their economic best interest. Suckled on the profit motive, tutored by the high priests of shareholder value in business schools, and nurtured by a stock market addicted to greed, it is all they know. It is their Golden Rule and their religion. So, America's corporate titans and even its small business owners will hire byte-collar workers who are smarter and stronger than humans and much less expensive. They will describe their choice as simply meeting their fiduciary responsibility, but behind that noble rationale will be the secret apostasy of modern capitalism's true believers.

Consciously or otherwise, America's private sector leaders will renounce their faith in human capital and convert to the literal meaning of *deus ex machina*. God from a machine circa 2040 – the divinity of technology – will become the new expression of their creed. They will cease their crusade to convert the best workers to their cause or even to see those workers as an organization-building resource. Indeed, they will no longer consider human labor to be an asset at all – to be something of value. It will, instead, be recast in their minds as a decrepit liability, riddled with litigation, regulations and insufficient loyalty.

The only sensible recourse, they will tell themselves and their shareholders, is to adopt a reformed version of their faith. The doctrine will be quickly confirmed by the cardinals of modern capitalist orthodoxy, and the conversion of business executives and owners will be both rapid and unquestioned. They will no longer accept the industrial and information eras' tenet of human talent and worker productivity as the stepping stones to bottom line success. Instead, they will transfer their allegiance to artificial intelligence and machine productivity and race to invest in ever

more capable and supremely dependable technology to compete in the marketplace. They will pray to the machine.

Humans will become the pagan pantheon of capitalism. They will be seen and treated as archaic. Impotent. Useless. And, that diminution will be but a part of the Titanicity's reset of the American way of life. Even as intelligent machines shove humans off their perch at the top of Earth's existential pecking order, the planet will immerse them in a frighteningly volatile climate. The weather will be less supportive and more frequently hostile to their wellbeing. In effect, their fall from grace will be a passage through an increasingly turbulent and dark atmosphere. Their plummet from supremacy will occur on a much hotter and polluted planet.

The Climatic Singularity

Marcel Proust, the French novelist, was no doubt speaking optimistically when he opined that "A change in the weather is sufficient to recreate the world and ourselves." For him, the arrival of a new weather pattern – good or even not so good – was a metaphor signaling hopefulness and the possibility of new and better circumstances.

His view was rooted in two assumptions. The first was that no matter how difficult things might be at any one moment, they will always get better at a later moment. Whether the transition is slow or fast, significant or modest, the human experience is inexorably forward and canted toward progress. And second, Proust assumed that the weather on our planet is always good or bad, at least in most locales, within a relatively temperate range that is kind to humans. Clouds inevitably give way to sunshine, droughts invariably end with rains, and hot spells unfailingly dissipate with the arrival of cooler temperatures. Over the long arc of human history, this home – our planet – has always been dependably supportive of hope and happiness. And, Proust believed, it would continue to be.

In many respects, these assumptions are the perfect expression of America's faith in the inevitability of recovery. When good weather turns bad, Americans believe it will always change back to a more human-friendly state, so life will not only go on but be nurtured and advanced. And, when bad weather is followed by good, Americans feel as if any challenge can be met and any goal accomplished. To them, recovery is simply the flip side of hardship; one is always accompanied by the other, and the odds of appearing are the same for both.

The arrival of the Titanicity will alter that conviction forever. Weather forecasts will be dictated by climate change, and that change will make those forecasts something to be feared. In the years beyond 2040, bad weather will be so omnipresent and so injurious to humans and their community, that it will be viewed as the terrible norm in our lives. We will still experience good weather, of course, but it will be fleeting. The hurricane and fire seasons will lengthen; the rains will last much longer; the flooding will grow more widespread; and the provoked jet stream will scorch some regions of the country and dump record snowfalls on others.

Just as Americans face the new reality of being irrelevant in the workplace, they will find their homes and neighborhoods whiplashed by unending extremes of weather. Just as machines terminate their opportunity for paid employment, storms and forest fires, floods and brutal winds will stagger them with huge financial losses and property damage. And, just as they realize there is no hope for reemployment and no prospect for a rejuvenation of their careers, the ever more treacherous climate of their home planet will immerse them in physical danger and psychological distress.

The Technological and Climatic Singularities will confront Americans not with two separate threats, but with a single existential assault. They will experience these two crises as one life-altering cataclysm – an occurrence so massive that it simultaneously disrupts both their life and their life's work, both those they love and what they love to do, both their dreams for themselves and their hopes for their kids and

grandkids. For We the People, the Titanicity will be an indivisible devastation so complete and fundamental, it actually resets the essence of our being. It will be a perfect catastrophe.

People Piling On

What will this “perfect catastrophe” actually be like?

How will individual Americans experience it?

The best way to answer those questions is to compare the Titanicity to and contrast it with something that is both familiar and seemingly similar. Even if the match is imprecise, we can better understand the nature and impact of the event by setting it next to what we have seen before. And, the most logical choice is another “perfect catastrophe,” a horrific disaster that was depicted in the 2000 movie, *The Perfect Storm*. The fictional account was seen by millions of people and generated \$328 million in worldwide ticket sales.⁸⁰ The actual storm was even more impressive. That tempest was so gigantic and so destructive, it was described as “perfect,” a contronym indicating that it had no weaknesses that would limit its ferocity or its capacity to terrorize and harm people.

In the movie, that harm was inflicted on the sailors aboard the *Andrea Gail*, a small fishing boat out of Gloucester, Massachusetts. The disaster was driven, at least in part, by the unforgiving economics of work on such vessels. A poor catch had left the captain desperate for money, so he departed port for one last fishing expedition despite ominous warnings of severe weather.⁸¹ That combination of occupational stress and climatic danger would seem to make the film a credible if dramatic portrayal of a “perfect” confluence of disparate situations. And yet, even this fictional

account falls far short of what the Titanicity will be like. That event will be a perfect catastrophe because its capacity to inflict horror and devastation will exceed even what humans can imagine.

There are other important differences, as well. The movie depicts a real event. There actually was a monstrous tempest, known not by a human name – it wasn't called Sarah or Sam – but by an adjective. It occurred in October of 1991, so it is sometimes called the Halloween storm, but it's much more prevalent description is "perfect." The Titanicity, in contrast, designates a future occurrence, one that will not happen until 2040. Its name, however, anchors it to an actual disaster. It enables us to contemplate what is not yet here but is real enough to be perceived as an epic threat.

In addition, the perfections of these two extraordinary occurrences are also significantly different. The perfect storm was created by the intersection of three separate weather systems, while the perfect catastrophe will be caused by the convergence of two unprecedented phenomena: a crisis of near universal unemployment and a crisis of near continuous ruination. The former had natural causes. The latter will be the product of human misbehavior.

The most consequential difference between the two perfections, however – and it is the defining distinction – is the scope and reach of their impact. The perfect storm, while horrific, affected a relatively small area of the North Atlantic, and the harm it inflicted was limited to the six men aboard the Andrea Gail and their families. The perfect catastrophe – the Titanicity – will be a mammoth occurrence with pervasive consequences. It will unfold as a global calamity that will inflict suffering on every man, woman and child on the planet.

Indeed, this convergence of the Technological and Climatic Singularities won't simply double the peril for people, but will instead, increase it exponentially. **The Titanicity is an unbounded catastrophe that exposes all of humankind to**

a compounded rate of decline in their safety, security, health and well-being. In essence, it multiplies its inherent capacity to cause despair and misery by that same terrible capacity and does so over and over again. The net result will be a permanent and profound change in the experience of living on this planet.

In America, every facet of our existence will be diminished. Our nation's advancement will be interdicted, its progress asphyxiated by unending anguish and hopelessness. Our individual economic opportunity and our social structures will be wrenched apart, their capacity and even their relevancy bludgeoned by unceasing disruption. And, our civilization will be coarsened, our lives made more primitive and less fulfilling by our inability to move on or even to restore what once was. We will endure our species' first-ever devolution, a fall from supremacy that will make even angels gasp.

Worst of all, this horrific regression will be the product of what we will have done to ourselves. It won't be fate piling on, but people. Americans are developing intelligent machines without considering the societal consequences and ethical implications of doing so. And, Americans are ignoring a foundational principle of their democracy when they magnify the global warming that is taxing our hope and well-being. We the People are not just casting a shadow over our future – and the future of our kids and grandkids – we are casting in doubt our sovereignty on a temperate planet.

Our behavior – a tragic and illogical combination of self-absorbed and reckless activity and equally self-absorbed and reckless inaction – will propel one devastation into a second to produce a single, horrifically catastrophic end state. When the Technological Singularity and the Climatic Singularity intersect in 2040, they will thrust America and its citizens into a shriveled and harsh new reality. This existential point of no return will cast the nation into the darkness and desperation of economic insecurity and societal impoverishment.

A Hint of What's to Come

The city of Plano is located just fifteen miles north of Dallas in Collins County, Texas. Despite sitting in the shadow of that larger and more famous metropolis, it has established its own reputation for progress and a pleasant way of life. Barely a decade after its founding in the 1840s, the settlement was a full-fledged town-in-the-making. It already boasted a general store and a handful of businesses, and new residents were arriving almost weekly. In 1852, a post office was established, and that development required the residents to give their thriving but unheralded community a proper name. Local leaders considered Forman for one of the town's founders and Fillmore for the country's president, but finally settled on Plano. The Spanish word for "flat," it was viewed as an appropriate description of the local area, although some folks apparently thought it meant "plain," which in their view was an equally accurate characterization.

Despite that less than auspicious moniker, the town continued to prosper. By 1890, it had swelled to 1,200 residents who supported six churches, three schools and two newspapers. Moreover, its flat terrain actually proved to be an advantage, helping the town to become a thriving commercial center. Small shops and local companies flourished, and it served as the hub for two railroads and the home of two steam gristmill-cotton gins. All of this activity attracted even more new residents and businesses, and the town quickly became one of the fastest growing in Texas.⁸²

That growth never faded and, barely more than one hundred years after its

naming, Plano's population and economy were both booming. Between 1970 and 1980, the number of residents doubled every five years., with more than half of the newcomers arriving from out of state. Jobs were plentiful as the town was home to the headquarters of J.C. Penny and Frito-Lay Corporation as well as a satellite communication system company and a number of computer manufacturers. By the early years of the 21st century, the average household income of Plano residents was \$84,492, one of the highest in the U.S.⁸³

This prosperity was matched by the ambiance of the town. It was a great place to live. As one online publication described it, "Plano is indeed an economically healthy city that has a vibrant community. [It] operates about 68 schools, and its public library is home to about nearly [sic] 700,000 books. Plano also boasts 3,600 acres of parks, playground, hike and bike trails, proof that the city isn't only amenable for business, but it's also a place for pleasure, fun and relaxation as well."⁸⁴ It was no surprise, therefore (at least to the people of Plano) that in 2016, *Money* magazine named the city the third best place to live in the entire United States and the number one place in the state of Texas.

Nothing changed and everything did just three years later. In March of 2019, a number of media outlets reported that PepsiCo, the parent company of Frito-Lay Corporation, had announced its intent to initiate a round of layoffs. The company minimized the move, describing it as one that would affect less than one percent of its workforce. There was nothing minor, however, about the rationale the company gave for initiating the reduction in force. It wasn't because of an economic downturn – the country was in the midst of a solid business expansion that was breaking records for longevity. And, it wasn't because the company was losing money – it had reported \$64.4 billion in revenue and \$12.6 billion in profits for 2018.⁸⁵ No, what was driving this decision to downsize its workforce was a fundamental change in the company's business strategy. To put it bluntly, PepsiCo had decided to abandon human capital and tie its future growth to machine capital.

As an industry publication, *FoodLogistics*, put it, "... the company is committed to save \$1 billion through 2023, citing efficiency and restructuring as its major themes."⁸⁶ It went on to describe what would be a four-year plan, quoting directly from the company itself:

"Our second set of priorities ... involves becoming more capable, learner, more agile and less bureaucratic,' CEO Ramon Laguarta said in a statement. 'In doing so, we will drive down cost and that enables us to plow the savings back into the business to develop scale and sharpen core capabilities that drive even greater efficiency and effectiveness creating a virtuous cycle.'"⁸⁷

The publication then translated that businesspeak into language the residents of Plano would understand by citing yet another publication. "The company is cutting positions that can be automated, *Business Insider* reports. PepsiCo is relentlessly automating and merging its business models with innovative technology to streamline its processes."⁸⁸ Yet another publication described it this way: "Executives with Technocrat minds at PepsiCo are dumping employees whose job can be automated in 2019 and beyond under the guises of increased efficiency, 'new thinking and technologies' and decreasing labor expenses."⁸⁹

The impact wasn't so much immediate as it was long-term. Thanks to the vibrancy of the economy in Plano, this corporate commitment to machine capital did not cripple the workers that PepsiCo laid off. Most quickly found reemployment, but not before the experience changed their view – and the views of many of their fellow Plano residents – that some fundamental shift had occurred. These layoffs signaled an abrupt and permanent break with the past. They weren't softened with the certainty of a return to normalcy. They had no connection to the familiar metronome of the business cycle. Instead, PepsiCo's dismissal of employees felt like an uncereemonious shove out of both the workplace and the company's plans for the future. It scrambled everything they believed in and counted on at work. And, it was just the beginning of what was to come.

As one person put it on LinkedIn:

“This announcement hits a bit close to home since the Plano campus is right down the street from me and I know several people that are employed there. Whenever you read articles about AI and automation, it seems like it’s some far-off technology that will take years to threaten real jobs. Well, this PepsiCo 4-year plan seems to indicate their commitment to automation. Given their operations range from Manufacturing to Marketing, this automation effort may serve as a barometer for what is to come with other Fortune 500 companies.”⁹⁰

Or, as another person posted on LinkedIn:

“PepsiCo to employees: we like robots better than you.”⁹¹

As if that weren’t troubling enough, Plano had other storm clouds on the horizon, actual ones. In the very same month those pink slips were announced, a severe thunderstorm dropped “massive amounts” of hail on the city, “leaving the ground covered snow-white in some areas with many residents tending to damaged vehicles.”⁹² One person was so shaken, they seemed about to slip into shock. “The hail was getting bigger and bigger,” they gasped to a reporter. “It’s just so horrible.” Hailstorms happen in North Texas, but this event packed a gut-wrenching wallop. Damage was much more widespread than normal, and one insurance agent described “receiving dozens – if not hundreds – of calls about claims” within hours of the storm’s passage.⁹³

Even more ominous, such severe storms were happening more frequently. Three years earlier and at about the same time, a particularly fierce storm had hit North Texas and caused \$600 million in insured auto and property claims.⁹⁴ Two years earlier, another bout of hail had battered Plano, damaging homes, denting cars and smashing their sun roofs throughout the city.⁹⁵ And one year earlier in June of 2018, a mega-hail storm skirted Plano, hitting towns just to its west and causing a

record \$1 billion in residential and commercial damage.⁹⁶

Some opined that it was just North Texas being North Texas. Severe weather was to be expected there, particularly in the spring. The data, however, suggested something else was occurring. A new normal was emerging – an accelerating pattern of severe storms that caused ever more disruption to people’s lives and destruction to their property. According to the National Oceanic and Atmospheric Administration (NOAA), 2019 saw “extra-large” hailstones – those with a circumference of 3 inches or more – fall in Texas as well as in Colorado, Kansas, and Nebraska. And, if South Dakota, Montana and Wyoming were included in the census, there was a heart-stopping total of 176 such mega-hail events in that one year alone.⁹⁷

Those and other smaller but still destructive hail storms not only damaged property and interfered with local commerce, they created a nationwide drag on the insurance industry and that, in turn, inflicted even more harm on its customers. According to the National Insurance Crime Bureau, hail-related damage claims increased by 19 percent between 2016 and 2019.⁹⁸ In Collins County, where Plano is located, records at NOAA indicate that insured damage in 2019 topped \$300 million.⁹⁹ Increased claims undoubtedly continued in 2020, as well, which will also undoubtedly cause insurance companies to raise their rates for individual households even further. Those adjustments will protect the companies, of course, but they will impose yet more hardship on the city’s residents.

While the data make clear that Plano is experiencing an ominous trend toward more severe weather, there is less certainty about the trend’s cause. As with much of climate science, researchers can point to indications but not to unequivocal answers. In fact, a 2019 report by the *Bulletin of the American Meteorological Society* acknowledged the difficulty of pinpointing a specific cause with any degree of confidence. Despite that cautionary note, however, the editor of the report was blunt, stating that “The evidence that human caused climate change is impacting weather events has only been increasing. This year we are seeing more and more evidence

of climate change ‘fingerprints’ on different types of events, especially wildfires and heavy rain.” The author of the chapter on hail went even further, warning, “Despite the considerable uncertainties surrounding the future of hail risk, key industries and stakeholders must still act.”¹⁰⁰

The report was peer-reviewed by 121 scientists from 13 countries who examined specific extreme weather events around the world, including in Texas. Their conclusions weren’t expressed in exaggerated or hyperbolic language, but instead reflected a careful analysis of data from an array of sources. The weather in Plano was symptomatic of a global trend that, in their view, would be characterized by more severe and destructive storms. Worse, they declared, those storms were caused by human activities, which, if left unchecked, would accelerate the trend and intensify the harm caused to the business sector and individual citizens alike.

What happened in Plano in 2019 wasn’t a coincidence – the chance convergence of layoffs and a major hail storm – but a precursor. It was an early warning sign of how life will change with AI’s usurpation of human workers and humans’ continued fouling of their planet. The Titanicity, however, will be the Plano experience on steroids. A few hundred people won’t be laid off; hundreds of thousands will be. Hail storms won’t cause millions of dollars in damage; severe weather of all kinds – hail storms, tornadoes, droughts, hurricanes, flooding rains – will cause billions of dollars in destruction. And worst of all, once that 2040 threshold is passed, there will be no return to normalcy. Recovery will be impossible. Blue- and white-collar jobs will disappear forever. And the Earth will punish humans into the next millennium and beyond.

Economic Insecurity

It's No Secret

What happened in Plano isn't the only warning we've been given about what AI will do to the human workforce. In 1947, for example, Alan Turing, a British mathematician often called the father of modern computing, gave a speech at the London Mathematical Society where he described the impact of artificial intelligence technology on white-collar workers in general and knowledge workers in particular, people he called "masters." In doing so, he addressed the oft-heard theme that there are skills that are unique to humans and thus inaccessible by machines. He said:

"The masters are liable to get replaced because as soon as any technique becomes at all stereotyped it becomes possible to devise a system of instruction tables which will enable the electronic computer to do it for itself....

"They may be unwilling to let their jobs be stolen from them in this way. In that case they would surround the whole of their work with mystery and make excuses, couched in well-chosen gibberish, whenever any dangerous suggestions were made."¹⁰¹

Seventy-one years later, Pew Research Center conducted a survey among 979 selected individuals it described as "technology pioneers, innovators, developers,

business and policy leaders, researchers and activists.” Their conclusions, published in a 2018 report, were breathtaking:

“The experts predicted networked artificial intelligence will amplify human effectiveness but also threaten human autonomy, agency and capabilities. They spoke of the wide-ranging possibilities; that computers might match or even exceed human intelligence and capabilities on tasks such as complex decision-making, reasoning and learning, sophisticated analytics and pattern recognition, visual acuity, speech recognition and language translation.”¹⁰²

For working men and women, in particular, the Pew report predicted:

“The efficiencies and other economic advantages of code-based machine intelligence will continue to disrupt all aspects of human work. While some expect new jobs will emerge, others worry about massive job losses, widening economic divides and social upheavals, including populist uprisings.”¹⁰³

And in 2019, Andrew Yang ran an unsuccessful campaign for the Democratic Presidential nomination based primarily on addressing the disruption AI will cause in the workplace. In an Op-Ed piece he wrote for *The New York Times*, he declared that:

“Automation doesn’t just affect millions of factory workers and truck drivers. Bookkeepers, journalists, retail and food service workers, office clerks, call center employees and even teachers also face the threat of being replaced by machines. These are some of the most common jobs in America. According to the Council of Economic Advisers in 2016, 83 percent of jobs paying less than \$20 per hour could have substantial parts of their work given over to automation. And advanced degrees won’t protect you from this threat — doctors, accountants, and even lawyers face the same risk.”¹⁰⁴

It’s no secret that AI and automation will terminate employment for working

men and women. And it's also no secret that an increasingly hostile environment will amplify the despair of unemployment and economic insecurity caused by the Technological Singularity. As in Plano, the impact won't be a big bang-like shock, but a festering crisis that will spread further and further into the workplace. The simultaneous loss of both employment and a temperate climate will degrade the quality of life and aspirations of millions of Americans. It will be the home front expression of a worldwide contagion. And, it will pose a real if hard-to-comprehend threat to the nation's prosperity that is far greater even than that of the novel coronavirus.

The World Economic Forum published an interview with Sharan Burrow, General Secretary of the International Trade Union Confederation (ITUC), who described the situation this way:

“The International Trade Union Confederation (ITUC) has campaigned relentlessly for a global agreement and just transition measures to mitigate climate change. **‘There are no jobs on a dead planet’** is our global rallying cry. But it's more than just a slogan: we're already witnessing the loss of lives and livelihoods because of extreme weather events and changing seasons.”¹⁰⁵

The Climatic Singularity will have at least two harmful impacts in America:

First, it will cause property damage in neighborhoods and towns already struggling with economic dislocation. Hurricanes and rising sea levels, tropical storms and floods, droughts and forest fires will leave no region of the country untouched by climatic disruption. Families that are struggling just to keep food on the table will suddenly see their largest single asset – their home – damaged or even destroyed. Manufacturing activity will become sporadic or even cease altogether as supply chains are cut and electrical, gas and water supplies are disrupted. Even agricultural jobs will disappear and output will drop significantly as fields are submerged in rain water in some regions and parched and shriveled with drought in others.

And ominously, this devastation has already begun. It's not some summer

disaster movie set far in the gauzy future, but a here-and-now reality for more and more Americans. In 2018, for example, the Federal Government reported that:

“... the U.S. experienced a very active year of weather and climate disasters. In total, the U.S. was impacted by 14 separate billion-dollar disaster events: two tropical cyclones, eight severe storms, two winter storms, drought, and wildfires. The past three years (2016-2018) have been historic, with the annual average number of billion-dollar disasters being more than double the long-term average. The number and cost of disasters are increasing over time due to a combination of increased exposure, vulnerability, and the fact that climate change is increasing the frequency of some types of extremes that lead to billion-dollar disasters.”¹⁰⁶

An event in Ellicott City, Maryland illustrates this phenomenon. In May of 2018, more than 8 inches of rain fell on the city in just a few hours of a single day. The resulting flash flood deluged main street stores and restaurants and destroyed homes, causing millions of dollars in damage. It was simultaneously both the rarest of events and not the first to hit this one town. In an article that described the incident as “the second 1,000-year rainstorm in two years,” *The Washington Post* noted, “Statistically, over the long term, these types of extreme floods are probably becoming more common, in areas that are normally rainy as a result of global warming.”¹⁰⁷ It was a safe conclusion, but significantly understated the crisis. Flooding rains have already become the norm in many places, devastating towns and neighborhoods that have rarely if ever been threatened by them as well as those that have long been plagued by such occurrences.

The second impact of the Climatic Singularity will occur in the workplace. It will diminish even further the employment opportunities that are still available to humans after the Technological Singularity. While climatic disasters may generate work for those in some industries (such as construction and transportation) and in some fields (such as carpentry and plumbing), they will close down the jobs of far

more people by damaging or destroying the stores, offices, warehouses and factories that employ them. In addition, the growing frequency of such adverse events will severely limit the ability of those establishments to restart, diminishing if not eliminating the possibility of reemployment. And, even if reconstruction does happen, it invariably takes too long to complete to generate a meaningful supply of new jobs, and the jobs that are created often call for skills not possessed by a locale's displaced workers. As a consequence, once their pre-storm jobs are destroyed, most people will have little hope of finding another after the storm, unless they accept the risk, anxiety and hardship of moving to another town or region.

Take what happened in the South during the fall of 2017, for example. A freight train of severe storms slammed into dozens of cities and towns along the gulf and east coasts. *Investopedia* reported that hurricanes in just two states – Florida and Texas – caused the loss of 33,000 jobs in the month of September alone. After Hurricane Harvey, in particular, “many restaurants never reopened because they couldn’t afford the cost to renovate or lost so much business from being closed that they couldn’t make themselves profitable again.”¹⁰⁸ All of the chefs and food preparation staff, the waiters and maître d’s, the bookkeepers and bartenders as well as the restaurant owners themselves lost their jobs, their income and, ultimately, their economic security.

Even when employers are able to reopen, however, storm-related damage often prevents people from getting to work. Family cars are inoperable and even when they can be started, roads are often impassible. Subways and city buses are crippled and their schedules are drastically reduced, if they are able to run at all. Employers have few legal obligations in such situations, so workers feel the brunt of the economic dislocation, even though they have no control over the circumstances. They either lose income or, worse, lose their jobs.

SHRM, the Society for Human Resource Management, describes the predicament for exempt employees this way:

“[The] U.S. Department of Labor (DOL) considers an absence caused by transportation difficulties experienced during weather emergencies, if the employer is open for business, as an absence for personal reasons. Under this circumstance, an employer may place an exempt employee on leave without pay (or require the employee to use accrued vacation time) for the *full day* that he or she fails to report to work.¹⁰⁹

In effect, current laws and Federal regulations often multiply the economic insecurity caused by severe weather events. Moreover, the wind and water damage, the droughts and forest fires, the endless rains and floods of this Climatic Singularity will envelope the loss of jobs, the absence of reemployment opportunities, the disruption of occupations and the denial of fulfilling work brought on by the Technological Singularity. It will overlay the destruction of homes and misery of families on the termination of opportunity and the desperation of working men and women. Together, they will inflict widespread and irreparable harm on all Americans. Together, they will perfect the catastrophe engulfing the nation.

The Titanicity will be a savage blow to every American. That assault, however, won't be a one-off injury. The pain it causes will be ongoing. Unending. Incessant. A new reality will take hold in America. Despite our much heralded “can do” spirit and native optimism, We the People will be unable to recover and return to our earlier standard of occupational vigor and individual advancement. Instead, economic insecurity will become our new norm and our ever-present reality.

Intelligent Vulnerability

As bad as the disruption of employment will be, it is not the only economic downside to the widespread introduction of super capable machines. Even when they're operating properly and our daily needs are being met, SCMs will frustrate and handicap Americans in other, equally harmful ways. They will invade our personal space, intrude on our personal privacy and ultimately put our financial security at risk.

Unlike what's occurred in Europe with the introduction of the General Data Protection Regulation (GDPR), the U.S. Congress has yet to pass any legislation that restricts or even regulates how the information that technology companies accumulate about individuals is stored and used. While California has implemented such a rule, it only protects the residents of that state. As a result, most Americans will be unable to prevent the commercialization of their own private data or its vulnerability. Every man, woman and child will simply become a feeder node in a massive system of technological exploitation. Even as their personal skills and knowledge are denigrated and dismissed in the workplace, their individual attributes and behaviors will be coveted and collected by the intelligent machines of commercial organizations.

Senators and Congresspeople will rail at the big tech companies for collecting everything from our time-stamped location, our buying habits and even the kind of shoes we prefer to our income level, our political leaning and our favorite sports teams. They will hold press conferences and public committee meetings and de-

nounce this rampant and intrusive data collection, but it will all be a façade. Once the news cameras are turned off and the reporters have departed, these so-called “public servants” and their staffs will continue to attend the lavish dinners and junkets subsidized by these companies and take the campaign contributions made by their executives. The quid pro quo is never explicit, of course, but it is real nonetheless. No legislation will ever be enacted that could, in any meaningful way, constrain either the power of these companies to profit from our personal data or the risk they pose to us in collecting and storing it.

In fairness, that position (while it may be reinforced by corporate lobbying) is not out of step with the views of a significant segment of the American public. Consciously or not, many Americans want smart machines to be smart about them – to pamper them with just the right suggestions and choices for the books and clothes they should buy, the trips they just have to take and the news they must not miss. For that reason, they will not only allow but encourage tech companies and their AI systems to know more about their personal preferences, habits and dreams than they are likely to know themselves. Unfortunately, however, relinquishing that knowledge to SCMs also means we will increasingly have no thoughts or ideas, no intuitions or perceptions, no interactions or behaviors that are private and ours alone. We will be nothing more than a file in the great techno-sphere, a dispenser of consumer dollars, aided and often even directed by a superior knowledge base and cracker jack algorithms in the cloud.

Even worse, that legitimate if troubling use of personal data will be accompanied by a huge surge in illegitimate applications. Indeed, the years after 2040 will come to be known as the era of technological gangsterism. Until SCMs are able to program themselves, they will have design flaws and other human imperfections that make them easy marks for technologically sophisticated criminal gangs. Their exposed databases and inadequate data protection protocols will give cybercrooks access to the personal information of customers, patients, students, employees, political party and other group members, shoppers and the simply curious. Identity theft

and consumer fraud will escalate dramatically, victimizing millions of Americans.

It will be an unprecedented level of individual vulnerability, and it will be but a part of the risk. The ineptitude and carelessness of private sector companies will be accompanied by the same deficiencies in the public sector. Government, education, social service and other institutions will rely on information security programs and protocols that are equally as inadequate and thus make their systems equally as susceptible to being penetrated and hijacked. Their lack of appropriate safeguards will further expose individuals to the potential loss of their personal data and the financial hardship such situations cause.

Ominously, the leading edge of that intelligent vulnerability is already here, especially in the private sector. During a single, two-year period from 2017 to 2018, for example, there were sixteen reported data breaches among corporate enterprises in America. These breaches exposed the credit and personal data of Americans held at such well known institutions as Macys, Lord & Taylor, Saks Fifth Avenue, Sears, Kmart, Best Buy and Whole Foods.¹¹⁰ Globally, *Forbes* reported that 4.1 billion records were exposed in just the first six months of 2019.¹¹¹ That same year, cyber-crooks stole 885 million files, including individual banking history and social security numbers from First American Financial Corporation and another 540 million Facebook users had their data compromised on the Amazon cloud server.¹¹²

In addition to the financial losses and personal anguish these assaults on personal privacy and economic wellbeing caused, they forced millions of Americans to devote countless hours and endure endless frustrations trying to resurrect their credit and reestablish their good standing with the intelligent machines that now control credit bureaus. That's right – these machines also control people's credit scores. They don't see those scores as the description of a person's status or situation (and the life events that influenced them). They don't consider mitigating circumstances; they look at humans as the output of an algorithm. As a result, SCMs are already making it possible for crooks to inflict serious harm on the financial standing

of Americans, and that harm is being megaphoned and metastasized through the assignment of credit scores by other intelligent machines.

Not surprisingly, this devastation has left many Americans feeling exposed and unable to protect themselves. They have neither a safe zone – a sanctuary where cybercrooks cannot intrude – nor a virtuous zone – a humanely administered credit system. They are forced, instead, to accept a new state of being – a perpetual jeopardy – that darkens their outlook as well as their perception of the economic security provided by their country. If America can no longer keep Americans safe from the pestilence of cybercrime and the inhumanity of its credit system, then it is questionable whether they have any security at all in an increasingly dangerous world.

That feeling of vulnerability has been intensified by the manipulation of social media. This threat is the product of two kinds of attacks: one composed of continuous campaigns of disinformation conducted by anarchists inside the country and our geopolitical enemies outside it and the other a relentless barrage of intrusions into the accounts of political, business and cultural figures by trolls and cybercrooks. For example, Russia and possibly other nations were able to use Facebook and Twitter as well as other sites and applications to influence public opinion during the 2016 presidential campaign. And in 2020, even a former president and vice president of the United States had their personal accounts on Twitter hacked, causing confusion among millions of their followers and the misappropriation of money from some of them.

This individual vulnerability and the feeling of insecurity that accompanies it will be multiplied and multiplied again by an antagonistic climate. As the Earth's temperature reaches and then crosses the threshold of irreversible warming, severe weather and climate-related disasters will subject Americans to unrelenting physical trauma. Sea levels will rise as Arctic ice melts, forcing entire communities in New England and the Mid-Atlantic states to abandon their roots and move inland. Rain storms will be stronger and last longer, flooding farms and homes and riverfront

parks in the Midwest. Tornadoes will be more frequent and fiercer, destroying entire neighborhoods and battering towns in the Great Plains. Droughts will spread and be more severe, straining water supplies in the southwest and fueling forest fires in California and other western states. And, hurricanes will increase in number, ferocity and duration, tearing up boardwalks and inundating cottages and tony vacation homes along the east and gulf coasts.

According to a 2018 report by the IPCC, the cost of such damage on a global basis will be \$54 trillion.¹¹³ Given the scope and complexity of its infrastructure and economy, there's a strong probability that America will incur the largest single share of that penalty. As heavy a toll as that will be, however, it's also likely that the nation will be emotionally and psychologically scarred as well. The almost continuous experience of and resulting inability to recover from the loss of jobs and the damage to family homes, Main Street shops, schools and playgrounds will undoubtedly put Americans in a dark and unstable mood.

Unlike the coronavirus and the flu, however, the misery produced by this environmental pestilence will overwhelm the young as well as the elderly and the physically hardy as well as the infirm. Some will be unable to work and lose their jobs. Others will perform below their capabilities and see their career stall. And, still others will simply give up and check out.

Sadly, research has already established a connection between the weather and suicide rates. The findings confirm that global warming and, in particular, prolonged bouts of extreme heat, will inevitably set tragic new records for self-destructive human behavior. For example, a 2014 study published in the *International Journal of Environmental Research and Public Health* found an association between "temperature anomalies" – bouts of extremely hot weather – and the suicide rate.¹¹⁴ Similarly, a 2018 study of people in Atlanta, Chicago, Los Angeles, Miami, Phoenix, Philadelphia, Salt Lake City, Seattle and St. Louis found the same correlation between above average temperatures and a greater risk of suicide.¹¹⁵

Even those who are able to overcome such self-destructive impulses will be at risk. The evidence suggests that the weather can also exacerbate interpersonal and intergroup relationships. Specifically, a 2013 study published in *Science* found that both higher temperatures and increased rainfall caused more one-on-one and group-against-group conflict.¹¹⁶ Other research has shown that there is more violence at a temperature of 95° F than there is at a temperature of 75° F. More businesses are robbed, more workers are sexually assaulted, and more workplace arguments deteriorate into fist fights and gunfire. Even getting to and from work becomes more dangerous. Brawls break out among commuters on subways and city buses, and road rage flares and flares again on overcrowded highways and city streets.

Obviously, there are other causal factors involved, but those factors almost always exist in cool weather as well, without any associated spike in violent behavior. It's on the days with soaring temperatures that such aggression becomes more prevalent. As it's explained by one theory – CLASH or CLimate Aggression, and Self-control in Humans – “a hot climate combined with less variation in seasonal temperatures can lead to a faster life strategy, less focus on the future, and less self-control, all of which contribute to aggression and violence.”¹¹⁷ Said another way, social injustice, psychological disorders, employment anxiety and drug and alcohol addiction create the combustible mix, but it's the heat that strikes the match.

Americans have long reveled in their standard of living and the comforts of life that most of the population are able to enjoy. Our country is blessed with the ease of a modern, technology-aided life style in a land that is rich in resources and opportunities and respectful of the individual right to privacy. That's how it's always been, at least for a majority of the population, and that's what will largely disappear with the arrival of the Titanicity. Think of it as the coronavirus pandemic only much, much worse. It will leave us uncertain of our future or even of the present. We will lose our self-confidence, our conviction that, if we just put their minds to it, if we just try a little harder, there's nothing we can't overcome or fix. And, for the first time in our history, we will question our freedom – not from foreign domination but

from non-human forces beyond our control. The Titanicity won't end the American Dream, but it will turn it into an emaciated version of what was once an exceptional reality.

Societal Impoverishment

Helpless in America

Super smart machines will undoubtedly improve the quality of life for many Americans. The technology will upgrade our health and wellbeing by helping doctors make the correct diagnosis when we're sick and by assisting with surgery to repair or replace organs when they are failing. Autonomous wellness bots will monitor our personal health and fitness and notify us and our physician before our cholesterol level, our heart function or some other condition becomes a problem. And all the while, those intelligent machines will keep watch over our daily environment, ensuring that the temperature, light level and air quality in our homes are within acceptable ranges for robust activity during the day and restorative sleep at night.

Similarly, byte-collar home staff will cook our meals, feed our pets, clean our homes, unclog our drains, chase the mice out of the attic and put out the trash. Autonomous nutrition bots will automatically restock our pantry shelves with our favorite foods and cook us healthy meals that are as delicious as any human chef could prepare. SCMs will alert us to new movies and songs that perfectly match our preferences and act as our personal shopper whenever sales are announced for the clothes that fit us best. Intelligent machines will, in short, be always-on butlers and maids, houseboys and ladies maids, personal assistants and gofers who are unfailingly attentive and ever more capable with each annual upgrade.

The early signs of this AI-assisted wonder world are already appearing. Take

the cosmetics and beauty products company Sephora, for example. It's introduced an intelligent app that enables customers to "try" its products on themselves by applying them to personal photos on their smart phone. What's likely to be next? To revitalize in-store shopping, clothing and shoe stores and even hair salons will unveil AI-based humanoids that can reshape themselves into an exact replica of the customer. That way, shoppers can see what the store's product will actually look like on them – the reverse image of a mirror being so 20th century.

The emergence of these automated helpmates will also have a downside, however. As humans become more dependent on them for everything from daily tasks to essential services, we will lose the skills and knowledge required to perform those tasks and activities on our own. That will be particularly apparent during severe weather. The Climatic Singularity will make power outages a much more common part of life in many American communities. Today, people still know how to take matters into their own hands when the lights go out and there's no power for their in-home technology. They know where they've stored candles or flashlights and how to start a fire in the fireplace and cook a meal on the grill. Once the Titanicity installs smart machines in every home, that common sense, DIY capability will erode and possibly even disappear.

Hard as it is to imagine, proudly independent Americans will devolve into a population that is clueless about how to fend for themselves. It won't be a universal affliction, of course, but it will happen to many, maybe even most of us. And, when it does, we will no longer be able to serve as the fail-safe backup for our smart machines. Instead, we will be utterly and irredeemably helpless when those machines are out of commission. We will be techno-crippled.

Just as troubling, this helplessness will also affect other facets of American life. We won't be able to get to where we want to go when our GPS is on the blink because we will no longer know how to read a map (assuming one can be found) or plan a route on our own. We won't be able to call a friend because we can't remem-

ber phone numbers when our cell phone loses power and its internal phonebook is unavailable. And, we won't be able to send our friend a legible note for their wedding anniversary or baby shower because we've lost the skill of handwriting or what writing we do produce would make today's second graders blush.

Perhaps worst of all, many people will have lost even the knowledge of how to have meaningful interpersonal relationships. The only way we will know how to interact with others is asynchronously and in tiny bits of unnuanced text – a condition that will leave us alone and without human connections when our technology is broken or unavailable. The face-to-face bonding of best friends, girl and boyfriends, grandparents and grandkids, even parents and their children will become a human behavior lost to a world where connections are possible only through and with technology.

Ironically, a paper published online for the students of Liberty Classical Academy, a college preparatory school, identifies five life skills that are already being eroded, especially among teens and “adults immersed in their technology.” They are:

- Being able to sustain eye contact while interacting with another person;
- Being able to speak with another person on the phone with clarity, confidence and precision;
- Being able to carry on a meaningful and genuine conversation with another person;
- Being aware of and in the world around them and engaged with the people they meet there; and
- Being able to stay focused on the tasks at hand, a particularly problematic situation as the paper references a Microsoft study which found that people's attention span has dropped from a piddling 12 seconds to an absurd 8 seconds

in just the last decade or so.¹¹⁸

While social distancing was viewed as an effective response to the coronavirus pandemic of 2020, *technological distancing* – the substitution of tech-based connections for human ones – will actually exacerbate societal impoverishment in America. It will be aggravated by weather-related isolation caused by the Climatic Singularity. In addition to the physical damage they cause, hurricanes, tornadoes, floods and forest fires will push people apart, forcing them into their homes or away from their hometowns and often limiting their contact with loved ones, neighbors and even the outside world. While such separations have largely been short-lived in the past, the almost continuous pattern of climatic disasters after 2040 will dramatically lengthen the time people spend apart. As was demonstrated during the coronavirus pandemic, technological distancing can actually improve human connections – it can serve as a “relationship bridge” – during such events, but its efficacy diminishes with each passing day. At some point, the lack of genuine human connections will leave Americans individually unsettled and socially unwell.

Hurricane Katrina provided a stark example of what that situation will look and feel like. The storm struck New Orleans on August 29, 2005. On August 28, the city issued a mandatory evacuation order for certain neighborhoods, and over the next 48 hours, somewhere between 12,000 and 30,000 people relocated to the Superdome, the city’s iconic sports venue, to escape the storm. Many lost all contact with other family members and relatives in their rush to safety and were unable to get any information about the location or status of those loved ones after their arrival at the stadium.¹¹⁹

The separation grew even worse once the storm had passed. The infrastructure and economy of the city had been so badly damaged, there was little hope of reemployment or even a safe place to live for many city residents. Both jobs and homes had been blown away or flooded out. With no other recourse, over a million people took to the road, migrating within a month’s time to elsewhere in Louisiana

or to every one of the other forty-nine states. According to the Appleseed Foundation, a nonprofit social justice network, those evacuees then became vagabonds, moving an average of 3.5 times, but seldom back to New Orleans. In fact, only one-in-four of the city's displaced residents had returned to New Orleans New Orleans even after ten months had passed.¹²⁰ For everyone else, the temporary separation from family and friends became permanent.

Experiences such as the one in New Orleans take a toll, emotionally, psychologically and financially. And then, there's the post-event barriers to recovery – slow and insufficient insurance payouts, inefficient and uncaring governmental bureaucrats, and unscrupulous and inept contractors. When those situations arise, displacement and discouragement can and sometimes do drag on and on. While most people are able to pick up the pieces of their lives and start over, some – and sometimes many – are traumatized by the experience. Yet even for them and for everyone else, recovery not only takes place, it often triggers restoration with benefits. The return to normalcy produces something new and better than what existed before. Homes are upgraded as they're rebuilt, streets that were once potholed are repaved, and formerly blighted neighborhoods get new parks and playgrounds.

Historically, this positive outcome was possible because harsh weather only occurred sporadically in America. Certainly, there were seasons for hurricanes and tornadoes and forest fires and floods, but they eventually came to an end, and recovery could and did begin in earnest. There was no replacing the lives lost, of course, but there was time to put life back together. Property could be repaired, essential services could be restored and store shelves could be restocked well before another climatic challenge had to be faced. On the surface at least, recovery was reliably regular. The quality of life for most Americans was the same after the storm as it had been before. Or even better.

It was the way life happened in America. The weather has been both the culprit in many of the physical disasters we faced over time and our partner as we

worked to recover from the damage it had caused. It roughed us up and then, it allowed us to revive ourselves. Generation after generation of our families had the same experience, and eventually, we grew to count on it. Or more accurately, we came to take it for granted. In fact, we're now so certain that relief will come, we even mock the inclement weather that precedes it.

Portland, Oregon offers a perfect illustration of that smug outlook. The city has proudly held a "Worst Day of the Year Bike Ride" for almost two decades. Hundreds of cyclists "laugh at the elements," knowing full well that what's momentarily the worst will eventually be better. Good days are always just ahead. That's how it's always been, and that's how it will remain in the future. They're so sure of it, they thumb their nose at Mother Nature. Every year.

That will continue to be both the outlook and the behavior of most Americans until the Climatic Singularity. Even before then, however, and in some places right now, there are small but real warning signs of a different kind of reality. They are incidental – like Hurricanes Laura and Delta hitting almost exactly the same spot on the Louisiana coast in 2020 – but they are also a trailer for what the future will be like. It will unfold everywhere as an epic experience of increasingly severe weather, and even Portlanders won't be spared. It was a lesson they learned the hard way in 2019, when their cocky Worst Day of the Year Bike Ride had to be postponed ... because of dangerous storms.

Circa 2040, such disruptions will no longer be occasional incidents, but commonplace occurrences, and not only in Portland but nationwide. The Climatic Singularity will close the gaps between severe weather events, eliminating any time for recovery. There will be no more days, weeks, months or even years to put things back together. To repair what was broken. To replace what was lost. To restore what was disrupted. Foul weather in all its manifestations will become a continuous and thus much more insidious force in American life. It will strangle the vibrancy and recuperative energy of our nation. It will impoverish our society.

A Pandemic of PTSD

Without a timely and meaningful federal response to prevent the Titancity, Americans will witness the automation of human work in every profession, craft and trade even as they are exposed to continuously destructive weather in every city, state and region of the country. That convergence of two mega-crises will violate them in two ways. It will undermine their wellbeing and sense of security by threatening their ability to care and provide for themselves and their families. And, it will simultaneously deplete their sense of community and fray the bonds of their society. Each will consume their attention, distort their perspective, overwhelm their senses, and hammer at their spirit.

The impact of this perfect catastrophe, however, won't be the simple sum of two separate, if simultaneous occurrences. It won't be one plus one equals two. The Titanicity will be an existential concussion from a boundless uncertainty that never ends. The Technological and Climatic Singularities will reinforce, exacerbate and feed off each other, producing an exponentially expanding cataclysm in America. As a consequence, the economic and societal devastation that Americans experience in 2040 will accelerate into even greater devastation in 2041 and then accelerate again in 2042 and remain on that unforgiving trajectory into the future.

In the face of this relentless physical and spiritual trauma, people of all ages and in every socio-economic class will lose any certainty of recovery, any hope of relief, and even any belief in certainty or access to hope. Normalcy will dissolve, aspirations will fade, expectations will shrivel, dreams will disappear and people's individual and collective confidence will collapse. It will feel as if their minds and bodies – indeed, their very essence and distinctiveness on the planet – have been permanently imprinted with the horror of humanity's plunge from grace or at least from its perch atop the evolutionary heap.

This brutal violation of our species will subject tens of millions of Americans to posttraumatic stress disorder or PTSD. The condition has long been associated with those engaged in combat, having been described as “shell shock” in World War I and “battle fatigue” in World War II. It's impossible to know how pervasive the disorder was during and after those conflicts, as no scientific surveys were taken among combat soldiers. However, it's now estimated that between five and twenty-five percent of World War II troops presented the symptoms we now associate with PTSD. For those involved in the most intense fighting, it's estimated to have been as high as fifty percent.¹²¹ Even decades after the cessation of hostilities – in 2004 – as many as 25,000 World War II vets were being treated for the condition.¹²² And, the troops who have fought in America's wars since then – from Korea and Viet Nam to Iraq and Afghanistan – have undoubtedly suffered similar levels of affliction.

This widespread experience with the illness may be at least partially responsible for its recognition in other spheres of human activity. As WebMD describes it, the condition develops “after a person has experienced or witnessed a traumatic or terrifying event in which serious physical harm occurred or was threatened. PTSD is a lasting consequence of traumatic ordeals that cause intense fear, helplessness, or horror”¹²³ From muggings and other street crimes to violent aggression such as rape and assault, from car accidents and severe injuries on-the-job to mass shootings and politically motivated violence, PTSD can happen everywhere and to anyone. By one estimate, as many as eight-out-of-every-one-hundred people in America will be

exposed to a dangerous situation that could result in serious injury or loss of life, and that trauma will then lead to the onset of the condition.¹²⁴

While individual reactions to the Titanicity will of course vary, every American will experience it as a traumatic blow to their personal sense of security and wellbeing and to the perception of the nation's health and prosperity. It will be a startling and horrifying decline for a people who have long seen their nation as both exceptional – that shining city upon a hill – and the most powerful on the planet. Americans are aware of their shortcomings, but also fervently believe that – through their principles and values, their valor and compassion – they have by any measure, been a force for good throughout their entire history. They may have been humbled by the Covid-19 pandemic, for example, but they never lost faith in their power to recover and reestablish the nation as a global leader in public health and medical science. To them, therefore, the Titanicity will seem an undeserved and unjust downfall. It will leave them feeling wronged and helpless, abused and defenseless. The resulting shock will trigger an outbreak of historic dimensions – a pandemic of PTSD – in the nation.

Those who are afflicted with the condition will struggle with symptoms ranging from anxiety and depression to substance abuse and even suicide. Even more devastating, the relentless nature of the trauma will make it impossible for them to untangle themselves from it, to forget or at least to manage the situation emotionally so they can move on. There will be no reprieve. No let up. The illness will be omnipresent, afflicting millions directly and millions more who live with and care for suffering spouses, children, parents, friends and neighbors. No one will be untouched. No one will be unharmed. It will be a society-wide affliction.

Historically, even pandemics – as terrible as they are – have had the expectation of recovery embedded in their public perception. No matter how severe or widespread the contagion, humans have always gotten better. With some, we have found a cure, as was the case with yellow fever, or a way to contain and eventually

snuff it out, as is likely to be the case with Ebola. With others, we have developed a vaccine – such as the annual flu shot or the Covid vaccine – that provides immunity or at least life-saving protection against a contagious illness or disease. It has been a reliably beneficial outcome, but it will not be our experience once we pass the Titanic. The trauma of that event will be unending, so the PTSD it evokes will become an integral facet of our lives. It will attach itself to our national character. It will fuse itself to the American genome.

America will become a society of just two cohorts. All of the old distinctions of class, age, ethnicity and gender will disappear. Everyone will be unemployed and either be one of those consumed by PTSD or one of their care-givers. The once vibrant land of opportunity, of go-getters and problem-solvers, of entrepreneurs and innovators will become a memory, a faint film that runs before the mind's eye of its people and then turns black and warped in the heat of their condition.

The fire will go out beneath our melting pot; our multicolored tapestry will unravel. A monochrome of despair and misery is all that will be left. The States of America will be United by a perfect catastrophe ... one we can already imagine simply by extrapolating from the reality we see in our daily newsfeed. Each post and commentary, every update and opinion piece leaves no doubt about what it will be like.

Chapter 5
What It Will
Be Like

Author's Note

Logically, it's difficult even to conceptualize what life will be like in the United States when the Titanicity clock strikes midnight and the country enters that new passage in its history. The notion of a point of no return – a demarcation line beyond which, life as we have known it in this country will be completely and forever altered – is so extraordinary, its impact so consequential, that it seems more fiction than fact. And yet, it is that very fantastical quality which makes the harm it will inflict so potentially eviscerating to the American Dream.

Indeed, the name of this phenomenon – the Titanicity – sounds more like such theatrical thrillers as *Independence Day* and *Star Wars* than it does like even the most consequential challenges we face in real life. So, just as we can watch and then walk away from those make-believe tales, many of us will see it as entirely reasonable to treat the prospect of simultaneous technological and climatic cataclysms as something we can simply put aside. Ignore. Dismiss. Or, at least, relegate to a less than critical priority in our lives. They are so far beyond what we know and experience, they can and should be supplanted by the more pressing demands of other, closer-at-hand concerns.

The syllogism goes like this: science fiction imagines the future. The Titanicity also imagines the future. Therefore, the Titanicity is science fiction.

It's a neat logical argument, but as with all syllogisms, both of its premises must be true for the argument to be valid. And, in this case, one of them is false. The Titanicity isn't a fictional rendering of what's ahead for America, but instead the designation of an actual point in time – the de facto opening of a new era in American life. Absent any change in our behavior, it is actually going to happen.

Science fiction is derived from fact. The Titanicity, in contrast, is fact. It is much more momentous than anything we have ever known in life, but it is the life we will actually experience. And for that reason, we ignore its essential truth or treat it as inconsequential at our peril. In fact, thinking of the Titanicity as an imaginary construct sets us up to be far more grievously harmed by its inevitable consequences. We increase our vulnerability because we fail to prepare for the next generation of reality.

To avoid that fallacy, this chapter employs a technique best described as **newsfeed realism**. It begins with but then moves beyond what we encounter in the present to create an understandable and believable representation of the future. A cousin of the literary genre known as magical realism, it offers an authentic extension or derivative of what is now known and accepted as commonplace. It constructs a realistic version of the abnormal by rooting it in what is considered normal today.

Newsfeed realism supercharges those contemporary elements – the occurrences, behaviors and comments one might see reported in an online newsfeed – by extending their current expression or usage into an extra-realistic portrait of what they are likely to be at one minute after midnight on the point of no return clock. It isn't fabrication, but is instead an augmented documentary. It takes the kinds of information we are now seeing in our everyday lives and extrapolates it into a depiction of what we are likely to see in our everyday lives after we pass the Titanicity.

Welcome to 1 Minute
After Midnight
The East Coast

Newport, Rhode Island

It didn't make much of a splash in the national news media – to use a lousy metaphor.

The Point, a tiny enclave sitting along the shoreline in Newport, Rhode Island, has long been one of the best-preserved Colonial-era neighborhoods in the United States. Founded before the American Revolution, its streets and houses remain largely untouched by time or progress. Unlike the faux attractions built to resemble 18th and 19th century communities, The Point is the real deal. Everything from the siding on its dwellings to the cobblestones on the streets is original to the village and lovingly preserved by local patrons and town officials.

Beginning in the early years of the 21st century, however, the rising level of the sea began to erode the village's shoreline and encroach on all of that careful preservation. Water is a relentless intruder, finding its way into every crevice and crack of human construction, and the age-warped seams of The Point's buildings and byways made them especially vulnerable. Sadly, it shouldn't have come as any great surprise. The federal government's *Climate Science Special Report*, issued in 2017, had noted that higher sea levels were already threatening some coastal areas in the U.S. and that the situation was likely to deteriorate even further in the near-to-mid-term.

The findings were described this way in the report's Executive Summary:

"Global sea level rise has already affected the United States; the incidence of daily tidal flooding is accelerating in more than 25 Atlantic and Gulf Coast cities.

"Global average sea levels are expected to continue to rise—by at least several inches in the next 15 years and by 1–4 feet by 2100. A rise of as much as 8 feet by 2100 cannot be ruled out. Sea level rise will be higher than the global average on the East and Gulf Coasts of the United States."¹²⁴

By 2035, even that ominous prediction fell far short of what was happening at The Point. The melting of sea ice in the Arctic had accelerated so much that the sea level along Rhode Island's beaches had risen by almost four feet. High tides now crept perilously close to The Point's oceanfront, and the most modest of winter storms sent water spilling into its streets where it ate away at the already fragile foundations of its shops and homes.

Newport's citizens, however, were evenly divided on the question of what to do about the situation, and in a 21st century democracy, that meant no decision could be reached and nothing got done. Those who argued that it was only prudent and responsible to prepare for the gathering climate threat were countered by those who said the cost was too high and that other civic needs were greater. The mayor was in the former group, but his plan for a defensive sea wall was blocked by those in the other group, and they controlled the city council.

The deadlock was similar to others that were occurring all over the country. Compromise was out. Stand pat was in. Political scientists called it a "Mitch Ditch" after the former U.S. Senator who had perfected the tactic of refusing even to consider an accommodation with those holding a different view from his own or simply membership in a different political party. A professor at Brown University described it as "the tyranny of obstinance," but to the people of Newport, it felt like the north

poles of two magnets repelling one another. The partisans on either side of the seawall question were cheered on by their respective bases, but for everyone else, the field lines of dissension created only disappointment and frustration.

Ultra-Cons Upend Construction

The situation at The Point had grown dire enough by 2038 that a group of architects and community planners pushed the partisans out of office, repudiated their intransigence-driven paralysis, and compromised on a set of techniques to “flood proof” almost all of the village’s structures. The mayor’s seawall was replaced by a more aesthetic string of beach dunes anchored with coastal grasses, and a low stone jetty was erected on the south side of the neighborhood’s beachfront to interrupt wave action during storms.

The plan was heralded as an exemplar of citizen action and it did the trick, at least for a while. The rising tides were held at bay; The Point was saved. With no supporting action at the national level, however, the protective measures were slowly but inexorably overwhelmed by the ongoing deterioration of the climate. All the residents could do was watch as the tide cycles rose so high, they made several buildings unfit for occupation and threatened a half dozen more. Ironically, the inundation also washed away whatever climate skepticism still existed among Newport’s residents, creating a common view of the situation. Everyone now agreed that the very existence of The Point was at risk and a much more aggressive response was

required.

In March of 2041, Newport's newly elected mayor announced that the city was launching a bond initiative to fund the erection of a eight-foot high sea wall around The Point. The barrier would forever block out the ocean vistas which made the neighborhood so special, but at least it would protect the historic buildings and streets from the encroaching waves. "No one wants this," the mayor acknowledged, "but we have no choice. It's either block the water and the view or lose The Point and our heritage to the water."

To make the bond campaign as appealing as possible, the city committed to holding down costs by contracting with one of the automated construction companies that had launched in the last several years. These enterprises eliminated the significant expense of human labor and claimed to improve quality by using intelligent backhoes, cranes and assemblers in all phases of construction. The "ultra-cons," as these construction companies were called, used self-directed machines that could be employed twenty-four hours a day, seven days a week without rest or overtime pay and thus ensure project completion on time and within budget.

Despite this precautionary approach, however, it still took a while for the project plan to be approved by the city government. Neighbors complained that the long construction days would ruin their right to reasonable periods of peace and quiet. Local merchants objected to the disruption of traffic and parking slots, arguing that many of them would not survive the inevitable decline in daily shoppers. Even school children joined the fight with one concerned 6th grader writing to the mayor to say that "these machines are like video games without parental controls, and that makes them unsafe for the kids in our town (and for our families too)."

It was the carpenters, roofers, plumbers and electricians of the local area who made the biggest fuss, however. Dozens of these skilled trade workers jammed town hall meetings about the project in a bid to get human labor included in the con-

tract. They also picketed along the road leading into The Point, but instead of flying a rat balloon as they had in past protests, they vilified the mayor's proposal with a robot holding a knife painted bloody red to its hilt. "That's what's happened," one protestor told a local TV reporter. "We've been stabbed in the back by a bunch of machines." Many of the city's residents supported that position, but they couldn't honk in solidarity as their cars cruised by because auto manufacturers had long since deleted the horn as an unnecessary feature in driverless cars. Their protests did draw sympathetic comments on the Newport community blog, though not enough to move the mayor, and several months later, the contract was awarded to the ultra-con company that had submitted the lowest bid.

The story seemed ready-made to be picked up by one of the national automated news services that had been introduced to compete with traditional television and print outlets or what they referred to as the "geezerstream" media. They had their competitors too, of course, mostly from the so-called Citizen J-Force or independent journalists who were living just about everywhere and quick to post reports and cell pics online. Some of these community correspondents even snagged an advertiser or two, but most did it for the thrill of chasing down a story and seeing it shared on the web. They didn't show any interest in The Point, however, and much to the relief of the Newport mayor, only the local bloggers bothered to cover the story.

Even the consortium of Florida-based newspapers formed way back in 2019 to focus on climate change ignored what was happening to the enclave. It certainly resonated with the newsbots that did all the reporting – the last professional human journalist having been laid off in 2035 – but as always, their "ConInt" or Consumer Intelligence pod actually determined what news got published. Its analysis of the trending stories with the highest click-through rates for interstitial ads found more interest among "actively shopping readers" – the new Key Performance Indicator (or KPI in bizspeak) for successful online publishing – in another situation playing out further down the east coast.

New York, New York

The Big Apple never did anything in an unpretentious way, and the T-Wall was no exception. As the city proudly put it, this plan would launch “the mother of all climatic protection projects.” The description referred to a twenty foot high floodwall that was being constructed to protect the iconic buildings and neighborhoods of the southern half of Manhattan. Sure, the Netherlands had its pricey sea dike, but the T-Wall would up the ante. It would create a colossal and even more expensive barrier – the T in its name stood for “tidal,” but the public made a different connection and called the wall “The Trumpster” – to hold back the seemingly endless caravans of winter storms that were marching into New York Harbor and pushing its waters into the very heart of America’s financial sector. In fact, the sea level had already risen so high that tours to Liberty Island had been cancelled because it was largely underwater. Lady Liberty still lit the country’s doorstep, but the waves in the harbor now lapped directly up against her skirts.

The initial design work began way back in 2013, but it envisioned a much more modest wall, rising only along parts of lower Manhattan and only to eight feet in height. Called the Big U, it was connected to a series of levees and a park, all of which would, in theory at least, protect the most vulnerable parts of the island from another Super Storm Sandy-like event. The city had been devastated by that once-in-a-century tempest so the barrier was to be a hedge against something similar

happening again.

Construction on the first section of the wall began in 2024, and most of the project was completed seven years later in 2031. Unfortunately, however, it was overtaken by events just a decade later. The unconstrained pace of global warming was producing much higher sea levels during normal tides and behemoth waves during storms. Even worse, what had formerly been once-in-a-century super storms were now once-every-other-year ultra-storms. The city's mayor was nothing if not politically savvy, so she turned the problem into an opportunity. She held a ceremony to mark the completion of the original wall and at the same time, announced construction of the T-Wall. "It will be," she declared without a hint of modesty, "the Great Wall of NYC."

Unlike its predecessor, this monstrous barrier would loom over retail stores and chic brownstones, city streets and municipal parks from the George Washington Bridge in the west to the Brooklyn Bridge in the east. Like a 21st century Maginot Line, it would be the ultimate defensive fortification for the entire lower half of Manhattan. Yes, it was a drastic expansion of the seawall strategy, the city acknowledged, but it was also both appropriate and necessary because by 2040 two things had changed.

First, all human stock traders had been replaced by hyper-fast, intelligent machines. The New York Stock Exchange as well as the firms located throughout the financial district were fully automated and all of their trading was performed in the cloud by super intelligent broker bots that processed billions of transactions a second every single day. The rising sea level no longer endangered humans, but it did pose a threat to the power cables and banks of computers that nurtured those trading systems.

To deal with that situation, most financial services companies had moved all of their technology above the fifth floor in their buildings and converted the lower

five floors into low income housing for which they claimed a tax deduction. Cubicle farms had been subdivided into modest apartments, which were quickly occupied by a demographic not seen before in the upscale neighborhoods around the financial center. Within a year or so, the faces on the crowded sidewalks went from being mostly white and mostly male to a palate of racial colors among men, women and children. “Lower Manhattan has now become a true American village,” the mayor said, “and its people no less than those who are better off deserve to be protected from the rising sea.”

The well-heeled tenants in nearby residential buildings agreed with the mayor on the need for protection, but they were outraged by her acceptance of low income housing in their neighborhood. They bitterly complained about what they called “this invasion of human graffiti,” arguing that many if not most of the newcomers were “losers and lowlifes.” They even petitioned the city government to issue new regulations that would prohibit what they described as “inappropriate social engineering,” but came away empty-handed. That outcome led to the establishment of a new and amply-funded protest organization called MoveOut.org. It organized marches and rallies to mobilize public opinion and force the mayor to back down, but her allegiance to corporate interests and their PACs held firm. “These companies,” she declared, “will keep both their low income residents and their tax breaks. It’s the face of compassionate capitalism, and good for New York City.”

The second change that justified the new wall was much less controversial. There was no arguing about the rising sea level. Initial projections for an increase of eight-to-thirty inches were substantially below what actually occurred. By 2040, those faster ice melts in the Arctic and the total disappearance of the ice sheet in Greenland brought the level up by almost seventy-five inches, which had been at the top of the range of projections for the year 2100. As a consequence, storm surges during the hurricane season and winter months would regularly overtop the original wall and flood subway tunnels, store basements and underground parking garages. At a height of eight feet, the Big U was history redux. It was about as effective as

King Canute commanding the tide to stop.

Worse, the sea kept on rising past that 75-inch mark. A study by Climate Central done way back in 2017 pictured what Manhattan, Liberty Island, Ellis Island and the rest of Gotham would look like if the sea rose just 21 more inches to 8 feet. The entire Financial District, Battery Park, and the South Street Seaport would all be under water. What had once been clogged streets and busy sidewalks would become Venice-like canals. Uber and Lyft drivers would have to park their cars and operate power boats, and the city's ubiquitous bicycle delivery workers would have no choice but to shift to motorized paddle boards. Most of the city's residents had shuddered at the idea, but one late night show host wasn't at all perturbed. "After all," he deadpanned, "it's not much different from what we have today. Trying to get from Times Square to Battery Park already feels like you're treading water."

Fencing off lower Manhattan from this much higher sea level necessitated a wall that was both higher and longer, and that's what the Trumpster would be. The cost, however, was staggering. Even with the most optimistic assumptions, it was estimated to run into the tens of billions of dollars. The city didn't have that kind of money, of course, but the mayor was not to be put off, especially in an election year. She called another news conference, and announced that the city would immediately start accepting bids for the T-wall's design and construction. When pressed about how she was going to pay for it, she adopted her signature gesture – a pinkie finger pointed toward the sky with the rest of her fingers curled beneath it as if in supplication – and replied, "New Jersey and Connecticut will pay for the wall."

Funding the Wall

There was nothing modest about the Trumpster. It would even be visible from the Space Spa, the tourist lodge floating alongside the old space station. The mayor described it as the world's first global warming tourist attraction. Critics, however, found plenty of deficiencies in her plan. First, there was no avoiding it. The wall would be omnipresent from every upper floor condo window and penthouse patio in the city. That depressed real estate values, developers and landlords complained, especially among more desirable owners and tenants. And second, it was a galling intrusion on a coveted perk among the residents of certain tony buildings along the Hudson River. This monstrosity would forever intrude on their exclusive views across New York Harbor. "I wouldn't want to live in New Jersey," one Manhattanite sniffed, "but I sure as hell want to be able to look at it, at least at night, when all you can see are the lights."

The mayor, a savvy veteran of more than a few municipal food fights, expected such pushback and had an answer at the ready. The wall, she announced, would be made with huge sheets of transparent plastic, so the panoramas would be preserved. Moreover, with so many oil and gas companies having begun construction of plastic manufacturing plants in Ohio, Pennsylvania and West Virginia in the 2019-21 time period, she went on, there was now an excess of capacity, which meant lower prices both for the material and its transport to the city. "And best of all," she concluded triumphantly, "the stuff takes 500-1,000 years to decompose, so this is one urban development that won't ever have to be reconditioned."

That quieted some of the critics, but not all. The most controversial aspect of her plan, of course, was its financing and especially her claim that New Jersey and Connecticut would pay for the wall. Both states had quickly and categorically denied that they would ever fork over even a penny. The mayor countered by holding a rally of her supporters in front of City Hall, where she declared that these two “deadbeat states” could either pay the cost directly or she would impose a commuter’s tariff on everyone entering the city with a license plate from either state. “They can either be a friend of Manhattan or its enemy,” she thundered, “but either way, they will pay to keep the sea out of New York City.”

Machine Productivity

Empty highways were the new silent spring in America, but with a twist. In 2019, the threat posed to Connecticut and New Jersey by New York City's mayor might have given both states' governors pause, but by 2041, the daily stream of commuters heading into Gotham had dwindled to a trickle. It began with the remote working phenomenon of the Covid-19 pandemic, but by 2025 was largely driven by corporate America's accelerating reliance on machine productivity. So many workers were being replaced by machines, that cars were a rare sight on the once-clogged highways, and parking garages became echo chambers littered with trash. The term "driverless car" had become a double entendre. In both states.

Rampant unemployment was a big and festering problem for the governors, but ironically, it also meant they had little to fear from the mayor's plan. Instead, they agreed to counter with a tariff of their own. If the mayor imposed her tax, they would institute an equal surcharge on the City's residents who visited their states. Their plan was based on a longstanding tradition: New Yorkers loved the beaches of New Jersey and Connecticut and visited them every chance they got. Indeed, day trips to the shore at Asbury Park and Point Pleasant Beach in New Jersey and to Stamford and Old Greenwich in Connecticut were so common, there were often more New York license plates than those of local residents on the vehicles in their parking lots.

The beaches were only open at low tide, of course, and only for sunbathing as the water was too cold for swimming thanks to all the ice melt in the Arctic. That didn't make any difference to the New Yorkers, however, as anything was better than the baking front stoops and sweltering streets of their own neighborhoods. At other times when the tide was up and the beaches disappeared beneath the waves, these escapees from the five boroughs would congregate in the shopping malls sprinkled like colored candy across the two states. These cavernous buildings had been reborn as centers for a new kind of recreation – “fantasy shopping” – where people could pay to enter upscale stores and try on some of the world's most expensive clothing and accessory brands. They could then model the apparel for family members and friends in each store's theatre seating and even queue up with others at the auto-cashier as if they were about to make a purchase. Since all real shopping now occurred online, it was a novel experience for the kids and a fun trip down memory lane for parents and grandparents. It amplified the appeal of a daytrip out of the City, and put even more New Yorkers on the roads to New Jersey and Connecticut.

Their effective counter to the ploy by City's mayor notwithstanding, both states had their own problems with the rising level of the sea. The broad powder-like collars of New Jersey's Atlantic-facing communities as well as the more modest New England girdles worn by the towns along Long Island Sound in Connecticut were all being threatened by encroaching water. The U.S. Army Corps of Engineers had stopped trying to replenish the sand on beaches in 2033 because most were underwater, not only during storms, but even during normal high tides. By 2041, the much revered day at the shore with sandy sandwiches and lukewarm soda had become a treasured memory, something that grandparents recounted to their grandkids, while scrolling through the sun-washed pictures on their old cell phones.

The looming storms seemed a perfect fit with the dark mood among residents of both states. Intelligent machine domination of the workplace was throwing hundreds of thousands of workers out of their jobs in every profession, craft and trade. Whether it was in defense industry manufacturing, pharmaceutical research

and development, oil and gas distribution or insurance and private equity sales and management, company-after-company compared byte-collar workers to humans and came to the same conclusion. The total lifetime cost of a machine was far, far less than the employment tenure cost of human workers, with their benefits packages, vacation days and Monday-after-Super-Bowl flu.

Not surprisingly, the driving conceptual framework behind this shift had its beginnings in the elite business schools of Ivy League institutions. A *New York Times* Op-ed written by a Harvard Business School professor summarized the movement: “The days of maximizing labor productivity for business success are over. The key to market penetration and domination in the age of automation is machine productivity, and the companies which ignore this new reality are dinosaurs and bound to suffer the same fate.”

Ironically, the strategy was embraced by academic institutions as well as for-profit businesses, and many of New England’s ivy-festooned colleges and universities replaced their human adjunct instructors and even some of their much more expensive tenured faculty with a new breed of teaching robots. They were much better at tailoring their pedagogy to the needs of individual students, and they didn’t disdain teaching for more fame-making or lucrative research. These android professors almost always scored high marks from students for their empathy and consideration, and when they didn’t, they were quickly reprogrammed to eliminate the glitch.

Even the region’s booming tourism industry saw humans replaced by intelligent technology. While the byte-collar workers in other business sectors actually looked like machines, however, the SCMs in its historical buildings and museums, galleries and concert halls were androids that had been carefully sculpted according to the Goldibot rule – not too pretty or handsome, not too ugly or homely, but just right for the vast majority of visitors. They sold tickets, answered questions, provided directions, and even happily posed for pictures, all without a word of complaint. And on top of that, they were never late, never missed a shift and gave every single

person an experience they would always fondly remember. New Jersey went so far as to commission a TV ad campaign to promote what it called “automated vacations” or auto-vacs in the state. Its tagline was “Everyday in the sun is automated fun in New Jersey.”

The Great American B-Reef

In addition to the social and work-related adjustments driven by the Titanicity, a whole new set of legal entanglements was also created. America is the most litigious country on the planet, so it was no surprise to anyone that this tectonic shift in the American way of life would also provoke a tidal wave of lawsuits. Employees sued employers for forcing them to train the SCMs that would replace them on-the-job. Towns sued companies for setting up server farms that generated virtually no local employment but turned their communities into heat islands. And, public interest groups sued cities and towns along the east coast for failing to protect ecologically sensitive wetlands and marshes from the rising sea.

One of these cases – *Esther M. Green v. Dare County, NC* – established the single most important rule regarding individual rights in the post-Titanicity era. It dealt with a homeowner in Duck, a village on North Carolina’s Outer Banks. At least, that had been the community’s location prior to the Climatic Singularity. By 2041, however, all of its tourist shops and restaurants, fast food outlets and mini golf courses, individual homes and even its police station and town hall were submerged in twelve feet of sea water. The once hospitable spit of land was still officially known by its original name, but to tourists and even some locals, the spot was more frequently referred to as the Great American B-Reef. It wasn’t a true barrier reef, of course, but it was the closest America had to Australia’s famed attraction.

Many of the local homeowners whose houses were now underwater built floating residences that they anchored above their property. These buildings had all of the amenities of their former dwellings except one: they had no beach access. Nevertheless, with state-of-the-art appliances, fashionable décor and patios with hot tubs and mini-pools, they were prized summer rentals among the well-to-do residents of the mid-Atlantic states. The ever-lengthening hurricane season made reserving a stay an iffy proposition, but a newly mandated tenants' rights clause in short term leases ensured renters would get refunds if a weather calamity struck. It was a very different vacation experience from that of days gone by, but thousands of people happily took the risk each year, so the houses remained a very lucrative source of income for the homeowners.

That financial boon precipitated the lawsuit. Duck officials wanted to build a floating amusement complex that would generate revenue for other municipal activities. "The trash still has to be collected," one member of the Town Council argued, "and we still need to support a police force and our volunteer fire house. There was no free lunch in the old Duck, and there isn't in today's Duck either." So, to pay for the project, the Council voted to impose a floating property tax. It would fill the void left by the discontinuation of the town's real property tax in 2034 as land disappeared beneath the waves. The notice describing the impending levy was posted to the town's blog on a Friday evening and on Monday morning, Esther Green sued.

"I've been a resident of this town for fifty-five years," she wrote on the blog. "My family was here before me and stuck it out through hurricanes Fran and Diana. We love this place, but now it's different. The houses out on Corolla are gone. Hell, Corolla itself no longer exists. You can still see Big Kill Devil, but half of it's submerged. So is what was our family home. But we haven't left. We're still here, and we've spent our hard-earned money to build an aqua-rental so we can earn a living and stay here. It hasn't been easy, and now the town wants to stick its hands in our pockets and take some of that money. It's like kicking us while we're down and I say, we've endured enough! And that's why I'm suing."

Back in the days when humans were running the court system, it would have taken months, possibly even years for the case to be heard. By 2028, however, all lower courts had been automated and the interminable delays of human friction had been eliminated. As a result, Esther Green had her day in court just six weeks after her suit was filed. The SCM judge reviewed its database of relevant prior litigation and contemporary judicial analysis, and issued a ruling on the spot in favor of the town. Green's auto-attorney immediately filed an appeal at the district level where she lost once again. Just one year later, the case was argued before the last remaining human judges, those sitting on the U.S. Supreme Court.

As was still their custom, they released their verdict at the end of the session. Machines and humans agreed: a changing climate did not restrain the authority of municipal governments. Duck would keep its tax. Three justices dissented, arguing that failing to recognize the dramatically altered circumstances imposed on people by climate change was the equivalent of ignoring a massive meteor strike on the planet. The reality of life had been dramatically altered and it was irrational to ignore that fact. One judicial blogger summarized the decision with this tongue-in-cheek title to her post: "Supremes Issue Judicial Earthquack!" The decision stood nonetheless, and Esther Green had no recourse but to accept the verdict. She was so distraught, however, that she sold her home and moved to Biltmore Village in the mountains of North Carolina. "It was my only recourse," she wrote later in her memoir, "after my livelihood and my country were stolen from me."

Welcome to 1 Minute
After Midnight
The Midwest

The Rise of SCMs

The Midwest was also impacted by the rise of byte-collar workers. As early as 2018, the World Economic Forum had warned that robots were on pace to take on half of all human workplace tasks by the year 2025. Just a decade and a half after that, super strong, super smart machines – a workforce category the U.S. Department of Labor officially recognized as Super Capable Machines or SCMs in 2028 – had pushed unemployment among blue- and white-collar workers to a historic level. There wasn't a job in any field or industry these automated byte-collar workers couldn't do and wouldn't do better – far better – than humans. They were more knowledgeable retail sales associates, more patient customer service representatives, more empathetic nurses and doctors, more competent car mechanics and more strategic chief executive officers. "SCMs are now a company's most important asset," opined a talking head on CNBC. Three weeks later, he too was replaced by a newsdroid whose features had been carefully tested among business viewers and confirmed to be optimized for trustworthiness and congeniality.

Even the coders and programmers who created the artificial intelligence that powered these super-capable systems had been declared obsolete. As predicted by a 2017 report from Oak Ridge National Laboratory, the Technological Singularity in 2040 meant that machines were able to program themselves and could do so better and faster than their human developers. Without the friction of human error

and bias, these “intelligent creative systems” brought a never-ending parade of new products to homes and businesses everywhere. Once seen as a pathway to secure employment, coding became just another job where humans were deemed subpar. And replaceable.

Some companies still kept human workers on staff, of course, but these ventures quickly found themselves at both a financial and engineering disadvantage. Their AI-based products were more expensive than those programmed by machines and, in almost every case, they performed less ably. By 2050, many of these companies were struggling, so they banded together and petitioned the federal government to create a new product standard – Human Engineered – that would give their developments some cachet. The quest failed, however, in large part due to the ridicule it suffered on social media. “All we were trying to do,” a spokesperson for the group explained, “was give the American consumer an option – like Organic for food products.” The plaintive tone of that explanation, however, was like red meat for the trolls online, who promptly began to mock the companies that were involved, tagging them as the group from HELL or the Human Engineered Latter-day Luddites.

As usual, the virtual din attracted far more attention than the group’s proposal in the real world, and before long, AI-based systems, robots and androids were the norm in almost every workplace in the region. Old timers said it felt just like the outsourcing frenzy of the late 20th and early 21st centuries. The only difference was that the jobs didn’t go to China or Mexico, but to high performing, dependable and cheaper machines working right here at home. One jokester called it the “byte-me revolution.” It wasn’t a completely inaccurate description: layoffs exploded in business parks and manufacturing plants, malls and retail shops throughout the Midwest. It wasn’t the hollowing out of the economy, but instead its dehumanization.

Des Moines, Iowa

A perfect illustration of just what the rise of SCMs would mean for human workers occurred at St. Tabitha Research Hospital for Children in Des Moines, Iowa. By 2041, all of the surgeries at that institution had been reassigned to surgibots, putting even highly trained and successful surgeons out of work. The bots were simply more agile and less prone to mistakes, the Board of Directors noted, so automating such procedures was the best way to keep the hospital's insurance premiums down and its quality ratings up.

No less important, the machines were considerably less expensive over their total life cycle and far less hassle for management than the all-too-human surgeons. Byte-collar surgeons had an average life expectancy of twelve years and could labor in the operating room 24 hours a day, 7 days a week during that entire time. There were no travel costs to absorb for doctors to attend medical conferences – unlike their human counterparts, surgibots were instantaneously updated from the cloud – and the escalating compensation costs required to fend off poaching by other institutions disappeared altogether. In addition, the hospital could depreciate the cost of those automated surgeons and recompense them with nothing more than the electricity they consumed.

The physicians, of course, didn't give up without a fight. They funded a local PR campaign with the theme *Only Humans Treat Humans Humanely*. The medical

and healthcare professions were simply better, they argued, at making the human connection with patients, and that person-to-person touch was absolutely essential to curing young children with debilitating diseases. It was the centerpiece idea in a barrage of social media posts and even in an old-fashioned paper pamphlet that was distributed door-to-door in neighborhoods throughout the city. The last page featured the picture of a doctor, a nurse and an orderly standing beside a child's hospital bed and this message: "Children need a human touch as well as good medicine to get well." Surgeons may have paid for the campaign, but it was a plea on behalf of everyone at the hospital – for the doctors and nurses, technicians and attendants and cooks and janitors no less than the surgeons who were losing their jobs to machines.

The Board of Directors at the Hospital was unmoved, however. As *MIT Technology Review* reported as early as 2017, researchers were looking for ways to give machines "artificial emotional intelligence." By 2040, they had succeeded, and SCM doctors and nurses were able to detect and appropriately respond to human emotions, sometimes even better than distracted or tired humans. The Board pointed to a cover story on the local news blog which featured a nursebot being named Employee of the Month at a competing hospital across town. The article described how much the patients loved having her greet them each morning and seeing her patrol the halls each night. "It makes me feel cared for and safe," one patient said, "and she's always there when I call her."

Blackmailed By Bots

Des Moines was also seeing the automation of another kind of job, but it wasn't nearly as supportive of the public good. In a 2016 interview, cyber defense expert Cameron Brown stated his belief that by 2040, computers and artificial intelligence would commit more electronic crime than actual humans. "Forget about the hackers and swindlers in Eastern Europe and Russia," he declared, "these mafiabots will take ransomware to a whole new level. They'll make the Godfather look like a petty crook."

Unfortunately, his prediction was almost spot on. In 2039, the computer systems of the city's government were "e-napped" by a stand-alone, fully automated criminal botnet. The rogue system didn't demand money, however – bots don't get any pleasure out of late model cars and bling – but instead demanded that the city give it access to all personal, financial and governmental databases. Information is the opiate of intelligent machines, and this botnet intended to binge on every aspect of human data available to the city.

At first, the mayor refused the botnet's demands. The information was simply too sensitive to be released, he argued, and besides, he didn't have the legal authority to do so even if he wanted to. Even more problematic, giving up the information may unlock the e-napped computers, but it would also inevitably result in litigation. The city would face a tsunami of class action lawsuits by its citizens, claiming they were harmed by the unauthorized release of their personal information. It was the pro-

verbial Hobbesian choice: face the wrath of citizens unable to get the services they needed because the city government's computers were paralyzed or face the wrath of those same citizens who were worried instead about the identity theft and financial damage that could result from the unauthorized release of their most sensitive information.

A similar dilemma had occurred in a New Jersey school district in 2019. Unlike in Des Moines, the e-napping of the district's computers was perpetrated by human cyber-crooks, but the resulting crisis was identical. The district superintendent heard from parents who were angered that classes had to be canceled because schools could not get into their computers to access the data they needed to operate. And, they would also be angered, he knew, if he paid the ransom the e-nappers demanded to release the computers because that would reduce the district's budget for classroom and extracurricular activities.

The crisis dragged on for several days with no apparent progress toward a resolution. Then, all of a sudden, the problem disappeared, and students were notified they could return to class. Ironically, the school district was able to restore its computer systems because they had been hacked by humans. Their malware worked, but its human design was also imperfect. The defect was susceptible to remediation by other human engineered software, which the district had quickly deployed.

Sadly, that happy outcome would not be replicated in Des Moines. Its systems had been captured by a SCM-based botnet and could not be overcome by human programmers or even intelligent repair bots. The mayor was left with no alternative but to make a choice. After conferring with the city's attorneys, he ordered the release of all of its data to the botnet and simultaneously directed the preemptive filing in federal court of a bankruptcy claim by the city. City services were immediately restored, followed by the first class action lawsuit twenty-four hours later. Additional lawsuits were filed in the following weeks, and the mayor was forced to institute layoffs among city employees to conserve operating funds. The lights stayed on, but they

illuminated a city that had been knocked to its knees.

It was a tragic turn of events, as Des Moines had been on a roll before this incident. Described in a 2019 study by a University of Iowa historian as “among the very worst places for African Americans to live,”¹²⁵ the city had gone to work upgrading blighted neighborhoods and the local schools that served them. In addition, it mobilized the insurance companies that were the foundation of its economy and funded an innovation zone for startups and early stage companies willing to employ local residents. That initiative brought upward mobility and dignity to a much broader cross-section of the city’s population, but the progress was quickly forgotten in the uproar over the mayor’s capitulation to the criminal botnet. “How could he cave,” the community blog editorialized, “to a simple computer?”

A petition drive was launched calling for the mayor’s removal from office, and a member of his own party announced that he would be challenging the mayor in the next election. He even previewed his campaign theme, arguing that it conveyed exactly what the city needed for a future of safety and prosperity: “Peace With Automation for Our Time.” Eight weeks later, the mayor was voted out of office, and Des Moines moved on ... to what, however, no one seemed to know.

A New ICE Appears

Despite the criminal activity of some of their number, machines were fast becoming a new class in America, one that humans admired and supported. This shifting perspective was supported and given credence by the articulate CEO of WonderFo, an information technology company based in Silicon Valley. To him, worries about having a machine control information were misplaced and backward. As he put it in a *Machine Insider* interview, “Information needs nurturing, and intelligent machines are the mothers of all information. Much more than we humans with our petty privacy and ethical concerns, these wonderfully maternal creations are dispassionate and attentive care-givers for all classes of human data.”

Newsbots quickly picked up the story and covered it extensively. *The WonderFo Ideal*, as it became known, scored at the top of their value circuits, so they gave it a featured spot in their feeds and a very favorable spin. It wasn’t long before the PR machines of the major tech companies also took up the cause and spent millions of dollars turning intelligent control of information into an American cultural ideal. Social media influencers added their enthusiastic voices to the chorus and happily published ads from the companies on their sites. The hashtag #InfoBirthers trended for weeks on Twitter, and a petition on the federal government’s We the People site gathered over a million signatures in just sixty days. It was entitled Machines Matter Too.

By 2047, the Ideal had become a reality. Businesses and government agencies, school systems and even religious organizations accepted technology from a vast ecosystem of corporate “information collection and exploitation” companies – dubbed the New ICE by an enthusiastic blogger – and turned a blind eye to the intrusive functionality that was embedded in their programming. To them, the end – “hyper purified data” – justified the means. “Sure, we give up some confidentiality and control,” one school principal was quoted as saying, “but what we get back is far more important: data we can trust. And only machines can offer that.”

Politicians are always holding a wet finger in the air and were quick to recognize the shift in public opinion. Many had only a superficial understanding of the issue, but nevertheless, they happily hopped on the ICE bandwagon. Congressional Representatives and Senators accepted campaign contributions and free dinners from the lobbyists employed by ICE companies, and without blinking an eye or feeling even a twinge of shame, blocked any committee investigations or legislation that might interfere with the commercial application of their technology. “Americans believe as much in free information,” a Senator from Ohio declared on the Senate floor, “as they do in free speech. It’s an American value.”

What the ICE companies didn’t acknowledge, of course, was the amorality of their position. Even the widely celebrated term “hyper purified data” had never been defined or explained. Neither academicians nor business pundits could agree on what it entailed or how it was or was not to be used. As one ICE exec famously put it in 2039, “Our job is to create the capability. It’s someone else’s job to figure out how to integrate it into the world.”

A privacy advocate posted a counter perspective on her blog, but most newsbots ignored it. Her words, however, were prescient. She wrote, “This ‘what me worry’ attitude is the same view scientists and inventors have held since the creation of Frankenstein. In this case, however, it’s fraught with a whole lot more risk to the public square. Machines don’t have a conscience or moral calculus, so even those

with good intentions see no problem in exchanging their data sets with those machines with less benign intentions. The potential harm, therefore, isn't constrained in any way; it can affect any and everyone and do so forever."

Her warning was hardly Chicken Little clucking at the sky. Prior to 2041, the mafiabots that fed on free information were controlled by humans, who then used the acquired data for identity theft and cyber ransom. Crime syndicates and plain old garden variety crooks in Russia, Eastern Europe, Africa and Asia used the technology to pilfer money from bank and credit card accounts, retirement and investment funds, and even individual tax refunds from the U.S. Internal Revenue Service. McAfee, the security company, estimated cybercrime in the US at \$157.5 billion in 2018, and while most of that activity involved technology, it was all still guided by a (crooked) human hand.

By 2045, however, that check on technology, such as it was, had disappeared. Humans were no longer required to stiff a mark. Crime had become fully automated, and the cost to individuals and businesses in the U.S. exceeded \$1 trillion a year. While "medical bankruptcy" was still a prevalent problem in society, a growing number of Americans were being impoverished by automated theft and forced to declare "cyber bankruptcy." They teetered on the edge of poverty and homelessness, not because they were sick but because they had been fleeced by a machine.

To protect themselves, a small but growing number of Americans resorted to the practices of their great, great, great grandparents in the years after the bank failures of 1929. They so mistrusted financial institutions with their machine-based ledgers and electronic funds transfer protocols that they withdrew every dollar they had and stored their money in home safes. The U.S. safe and vault industry generated \$1.2 billion in total revenue in 2020, and a significant segment of those sales were driven by a concern for personal safety.¹²⁶ More and more homeowners were purchasing guns to protect themselves from home invaders, and they needed a secure place to store the weapons. Thirty years later, the industry's sales had soared to

\$10.8 billion, and once again, most of the growth was among homeowners seeking family protection. This time, however, it wasn't human crooks they were worried about, but rather ICE-developed technology gone rogue.

E Technium Unum

Despite its high toll, the financial burden of automated crime, wasn't the biggest drag on the economy and quality of life in the Midwest. Even worse was something Americans had done to themselves. They had let the Climatic Singularity pass in 2040 without taking any meaningful remedial steps – people still drove huge SUVs, power plants still burned coal and spewed carbon ash into the sky and farmers still raised methane-producing dairy and beef cattle. As scientists predicted, the result was an environmental disaster of epic proportions.

The first manifestation of the planet's anger was the dramatic increase in the number of tornadoes hitting the region. Often arriving in killer packs of five or more simultaneous funnels, they tore through farmlands and towns, office parks and mega-malls, baseball fields and picnic grounds. Roofs were ripped off homes and schools, trucks and cars were stacked in piles on city streets, the windows of stores were shattered and their inventories destroyed, cable towers were toppled and power lines severed, and business computers and desks were scattered across parking lots and fields. The devastation was so horrific, it was almost beyond comprehension. And then, it happened all over again. And again.

Neighbors helped neighbors as best they could, but food, water and gas deliveries were erratic and never enough, pushing even peaceful communities to the edge

of chaos. Their normally quiet and safe streets became battlegrounds as police confronted scores of looters and a new breed of anarchists who saw the weather as an exploitable opening in their battle to destroy what they considered a “corrupt social order.” The situation was so bad in 2042, the Iowa National Guard was deployed in the state 123 times, breaking the record its units had set with call-ups to Afghanistan way back in 2017.

Federal assistance was provided, but it was limited as the FEMA budget was already stretched to the breaking point by destructive storms elsewhere in the nation. Complicating the situation was the lack of a human perspective in the resource allocation process. Decisions about where and when to send support and supplies had been completely automated at FEMA and were now based on an algorithm that was updated and maintained by other machines. Cubicle farms in the agency’s headquarters, once the workplace of career civil servants, were replaced with rows of computers whirring quietly in temperature-controlled rooms. Compassion was trumped by efficiency, and selfless dedication was factored out of the equation altogether.

A 2019 report by the Partnership for Public Service had raised the alarm about the automaton of government services, but even its report vastly underestimated the extent of the switchover. It estimated that about 130,000 jobs would be lost, mostly in the IRS, Securities & Exchange Commission and other financial agencies. In actuality, SCMs took over more than 500,000 jobs, including all but a very few at FEMA. As a result, support from the agency was distributed based on a calculation of each town’s GMP or Gross Municipal Product – its contribution to the digital economy. The more significant a locale’s GMP, as measured by the machines at FEMA, the more support it got. The number of people whose homes were destroyed, whose families were separated or whose lives were lost didn’t matter, at least in the algorithm. What counted – all that counted – was a town’s contribution to and use of machine-based products and services. The country’s motto and its ideal of *e pluribus unum* was reset into something only a machine could appreciate: *e technium*

unum – out of intelligent technology, one. In this case, however, it wasn't one nation that was being memorialized, but one vast machine state.

Indianapolis, Indiana

The climatic situation was especially grim in Indiana. The state had frequently been hit by tornadoes, including the deadliest twister ever recorded in the U.S. That storm struck in 1925, killing 71 Hoosiers as well as others in Missouri and Illinois. The state's capital, however, had never suffered a direct hit, at least not until 2041, when two F5 tornados slammed into the city and stayed on the ground for over fifty-five horrific minutes. Thousands in Indianapolis were left homeless, over five hundred of the city's citizens lost their lives, and manufacturing and business in general screeched to a complete stop.

In the past, citizens of neighboring states would have leaped into action and provided food, water, clothing and even tents and RVs to help the city's residents get back on their feet. Not this time. The entire region was reeling from successive climatic disasters, so the traditional compassion and generosity of Americans was wiped out by their own need to care for themselves and their families. Like the ship that bore its name in World War II, Indianapolis was on its own .

The city, of course, did what it could. Lucas Oil Stadium was opened to those who had been displaced from their homes. The city had spent hundreds of millions of dollars on the arena, so it closed off the seating areas and field to protect its investment. That forced the evacuees to stake out small patches on the cement floor of the concourses to camp out. It was more orderly than the land rushes of the 1800s, but had the same effect. People claimed the right to settle what had once been pub-

lic space, and many began to personalize their spot to make it more comfortable. What the city government intended to be a temporary fix until more suitable quarters could be found became a de facto neighborhood of survivors. Luckily, there was plenty of drinking water, but other necessities were scarce. Many of these so-called “stadium settlers” arrived with only the clothes on their backs, so bedding and blankets, towels and sweaters quickly became valuable commodities. The lack of food, however, was the biggest problem as there were no stockpiles in the building and the city was unable to organize any deliveries. Within days, hunger began to gnaw at every person on the concourses, parents and children alike. Where once there had been unlimited brats and pizza, there was now only the growing desperation of aching bellies.

Two weeks after the tornado, food riots spilled out of the stadium and surged through what was left of the downtown. In a scene reminiscent of the Minneapolis Food Riot in the Great Depression, store windows were smashed and anything that could be bartered for food was stolen. Grocery and convenience stores were stripped bare, leaving only empty shelves to glisten in the overhead fluorescents. The mob even marched out to the suburbs and broke into restaurants and fast food outlets where they ransacked pantries and emptied cash registers.

The state called out its National Guard to quell the crowd, but the anarchy had spread too far. The city had already devolved into tiny fiefdoms controlled in some cases by gangs and in others, by groups of people simply looking for security and basic necessities. The latter areas became known as “free-food zones;” they took on names, created their own flags and armed themselves against outsiders bent on stealing what supplies the huddled groups had been able to obtain. One went so far as to declare independence from the United States. As its leader explained, “If the country can’t guarantee us our rights – our Life, Liberty and pursuit of Happiness – then we have the alternative right to do that for ourselves. It says so in black and white in the Declaration of Independence.”

And, he wasn't the only one who felt that way. Similar incidents of urban fragmentation occurred in Chicago, Cleveland, and Kansas City in the Midwest and in cities elsewhere around the country. The movement was spreading so quickly and was so unprecedented, it wasn't long before a new term was coined to describe it. "BalkanAmerica" was first used by a sociologist at Indiana University, who blogged that a new social order was being created in the country. Like the virtual communities on Facebook and other online sites, he argued, these new structures would soon overwhelm and replace traditional and more formal forms of self-government. "States were an atavistic form of plurality-based government," he opined, "and will be replaced by micro-democracies. They may or may not accept the overarching authority of the federal government, but they will reject and replace any other form of intermediary rule. America is becoming the New Balkans."

Welcome to 1 Minute
After Midnight
The West Coast

NoGoCal

By 2041, the Titanicity had reset California into two armed camps. The situation was as much a psychological and emotional separation as it was a physical standoff. Way back in 2018, NBC publicized the term “climate grief,” to describe the depression, anxiety and mourning that was often the direct byproduct of climate change. In southern California, shade became the new symbol of one’s economic class. Those few who were wealthy enough to live on tree-lined streets and wooded lots were at the pinnacle of the social pecking order, while everyone below them baked in concrete canyons and asphalt arroyos. Further north, however, economic class melted away as a distinguishing characteristic. Drought-fueled forest and brush fires consumed multi-million dollar mansions in posh communities as quickly as they annihilated track homes in modest neighborhoods. There was no safe haven from the angry climate, and the resulting sense of hopelessness thrust many, maybe even most Californians into a deep well of despair.

That grief was, in turn, multiplied and then multiplied again by frustration, anger and panic as massive layoffs surged through the state’s once-thriving tech industry. Ironically, the people who had paved the way for the automation of work – programmers, engineers, datacenter administrators, data scientists and even the sales and marketing staffs – were especially hard hit. The angst didn’t end there, however. The layoffs metastasized into the companies that serviced and supported the tech industry as well as the local businesses that relied on spending by the em-

employees of those companies. It was soon a near universal experience as unemployment surged into every segment of the state's economy.

For some, the human fight or flight response to external threats morphed into fight or give up. Unable to find any relief in what once had been two of their state's prime attractions – endless summer and a tech-centric job market – thousands of formerly successful white- and blue-collar workers felt disoriented, anxious and abandoned. Suicides escalated dramatically as college graduates and seasoned professionals no less than day laborers and union workers lost their grasp on a comfortable middle class life style in a climate that mocked their downfall with bright sunshine and blue skies. The state once known for its laid-back, surfer dude culture became a dog-eat-dog war zone where neighbors fought among themselves for even the bare necessities of life.

The area north of San Francisco was the epicenter of this struggle for survival. As the year-round fire season became more intense, the once golden hue of sunny days was replaced by an ominous gray-brown tint. The heaviest fires were in the Klamath Mountains, the coastal ranges and the Modoc Plateau. By 2038, the threat had become so severe, the state declared that it could no longer guarantee adequate fire suppression in that region. Insurance companies refused to write policies either for businesses or residential property. Electricity was sporadic as the state utility was unable to defend its transmission lines from winds and fire. And, deliveries of food and other consumables slowed to a trickle, while postal and package delivery services were discontinued altogether.

Three years later, in a move that turned the state into a political cauldron, the governor signed an Emergency Declaration that made it illegal to live or run a business anywhere north of a line drawn due east from Point Arena to the eastern border of the state. The acronym for Northern California went from NoCal to NoGo-Cal with the stroke of the Governor's pen. The Declaration ran for several pages, but

the opening paragraph read like a prison sentence to many Californians: “In keeping with its responsibility to protect the lives and property of its citizens, the State of California hereby declares the geographic area specified in Appendix A to be uninhabitable due to the unpredictable dangers of forest and brush fires. Those presently living in this area will be relocated to special resettlement camps until such time as they or the State can find acceptable replacement housing.”

The Crocketts

Californians have always been an independent people, and within days, tens of thousands of the state's citizens began to defy the Governor's order creating NoGo-Cal. Those already living in the forbidden zone barricaded the roads leading into their towns and villages, determined to stay right where they were. At the same time, their population climbed steadily upwards as newcomers arrived from the Bay area and beyond. Having lost their jobs to the byte-collar workforce, they had nothing to keep them in their over-priced apartments and rental homes, so they joined up with other displaced tech workers and reprised the caravans of the Dust Bowl. These former technorati turned vagrants, however, had their own distinctive look. Instead of jalopies and buggies, they traveled in the BMWs, Teslas and Range Rovers that had previously signaled their place high up on the state's economic ladder.

The California National Guard was ordered to barricade the highways and major thoroughfares and intercept the convoys before they reached the no-go line, but they were largely ineffective. There were simply too many back roads to cover, and the travelers were just too determined to find relief. They saw themselves as economic immigrants seeking asylum; many were just everyday Americans desperately trying to escape the high cost of living and disappearing public services they were enduring in their old hometowns. The state, in contrast, considered them "alien citizens" – an oxymoron they used to denote illegal border crossers who were ignor-

ing their civic responsibility as state citizens to obey a properly executed government order and, therefore, threatened the safety and security of the rest of the populace.

A social media site that provided a virtual forum for these sojourners to the forbidden land posted a comment by a woman who had previously held a mid-level job at Google. She updated Emma Lazarus's poem memorialized on the Statue of Liberty to reflect her own experience of American immigration: "We are the new wretched refuse, not from some teeming shore but from our own native land. We are the homeless, the tempest tost of America and no one cares. The lamp has gone out beside the door. The dark surround envelopes our lives and our future."

Those last words accurately captured the feelings of loss and betrayal that coursed through the people in the caravans. They were a despondent tribe following a trail of heartache. That dark mood was a temporary condition, however, as the woods and high plateaus of the north gave them a nurturing freedom. This was no government-forced trek to a reservation of spiritual imprisonment, but instead, a self-directed breakout from the darkness.

Almost to a person, they felt as if they were embarking on a new beginning, a fresh start that would open a very different and better future for both themselves and their families. It was a physical and spiritual liberation that transformed them into the founding settlers of a new and uplifting community. So, they swore allegiance to the independent ethos of the original NoGoCal homesteaders and rejected the economic and social structures that would entangle them with the life they had left behind. In a stunning cultural reset, these former true believers in the west coast's technocracy chose instead to live with their fellow colonists entirely off the grid.

Many proudly referred to themselves as a Crockett, seeing in the famous frontiersman a model of hardy individualism and self-reliance that fit perfectly with their own situation. They farmed and fished, traded and looked out for one another. The days were filled with chores and parental schooling for the children, and the evenings

with neighborly visits and bedtime stories. It was the diurnal flow of a post-modern collective, but also the foundation for their survival.

It was not, however, a Utopia, and no one pretended that it was. These neo-separatists accepted that the easy life of their past was over. They lived with the daily threat of forest and grass fires and from raids by state police and paramilitary forces. To deal with the former, they devised a Campfire Code that was widely seen as a civic duty and strictly enforced by all. Personal fires were never left unattended, and each community kept a fire watch that would extinguish lightning strike blazes as soon as they occurred. To deal with the latter, they formed volunteer militias and set up early warning systems of teenaged runners who, like modern day Paul Reveres, would spread the word if an approaching state patrol was spotted. They seldom put up any resistance when these forces entered the NoGoCal zone, but chose instead to avoid confrontation by slipping away into the forests and hidden valleys of their new homeland.

A New Form of Gas Warfare

The Crocketts felt safe and secure in nature and, in what many described as an almost mystical experience, they also felt unburdened and liberated from the daily grind. It was a decidedly unexpected, even ironic turnabout, as many had formerly been committed acolytes of go-big-or-go-home America. They had done everything they could to stand out from the crowd – to be part of an economic and social elite that was celebrated or at least envied by others. In their new home north of the no-go line, however, they were just another slice of the American population, individuals to be sure, but no longer defined by the car they drove or the vacation experience they could afford. Each had their own story, of course, but all shared a deep sense of having been betrayed by their government. While some would acknowledge having taken their democracy for granted, no one saw that as justification for what it had allowed to happen to the country. They still revered the idea of America, but they were outraged by the crass self-serving and never-ending ineptitude of its political careerists.

They also harbored a deep-seated hatred for the tech companies of Silicon Valley and especially for the executives who led them. To the Crocketts, that cabal was as hostile to the vitality of America as the communists of China and Russia and the religious fanatics of Iran. Not only had these oligarchs been largely unscathed by the artificial intelligence revolution, they were the ones who had actually perpetr-

ed its assault on everyday Americans. They were the CEOs and their c-suite cronies who directed the development and then the widespread installation of super intelligent machines, while blithely ignoring the human consequences of doing so. They pocketed their millions and in some cases their billions and didn't bother to consider what their creations might do to working men and women. As one Crockett put it, "They might as well have said, 'let them eat some artificial cake'."

The automation of human tasks in the workplace had simultaneously supercharged the profits of the Valley's companies and consigned even their most loyal employees to desperation. As more and more segments of corporate America ditched labor productivity and converted to machine productivity as the sine qua non of bottom line success, human workers were deemed obsolete and no longer of value in the workplace. They were worthless inventory that could be discarded in the human version of landfills – the city alleys and homeless parks of San Francisco, San Jose, Mountain View and Sunnyvale. Academics and futurists called it the Fourth Industrial Revolution, but for working men and women, it was something else altogether. It was an imperious assault on their humanity.

That was all the justification some of the more extreme Crocketts needed to take up arms against what they called the "techno-calitalist regime and its fellow travelers." To them, these companies were no different than enemy states, and their rallying cry became "Remember Denmark." It was a reference to that country's decision in 2017 to appoint the first-ever official Ambassador to the globe's largest tech companies. Two years later, the Ambassador, Casper Klynge, gave an interview on his experiences in Silicon Valley. He said, "Some companies have been enormously interested and open for dialogue from day one. Others have been much more reluctant to engage in uncomfortable political discussions."¹²⁷ Though carefully couched in the politesse of diplomacy, the statement laid bare the ethos of the tech industry. Its members govern populations larger than many independent countries, but they are more comfortable and profitable working in the shadows, free of the responsibilities and restraints of nation states.

The tech companies still talked a good game, of course. The leaders of these commercial Goliaths had all been schooled in the “best practices” of corporatespeak and the diversionary tactics of industrial PR. They opined constantly about humans being their “most important asset” even as they acted to do more with less and optimize shareholder value and their own compensation. They did interviews with newsbots and bloggers and had op-ed pieces ghost-written for them about the centrality of working men and women in the wondrous future of the 4th Industrial Revolution and simultaneously invested in replacing them with more productive SCMs. They filled the air and the ether with billions of words, all carefully tested and refined to present a portrait of good corporate citizenship so they could carry on with their campaign to terminate individual opportunity in America.

The more radicalized element among the Crocketts considered this PR campaign a new form of gas warfare, incapacitating people with a blast of narcotizing falsehoods. It overwhelmed their senses and kept them from absorbing the truth about what these companies were actually doing. Most hideously of all, the attack was happening right out in the open, in plain sight. No HUMINT or SIGINT was required. To the activists, it was a clear and present danger – the corporate version of a weapon of mass deception.

At first, this aggrieved group was satisfied with calling it out for what it was – an assault on their humanity – and venting about it around community campfires and in communal dining tents. The airing of their charges refreshed their spirits, but as time passed, it was increasingly viewed as an inconsequential and even cowardly response. So, in 2043, they declared war on the high tech titans. They organized small guerilla parties that ventured out of their sanctuary to strike at soft targets wherever they could find them. Their raids were little more than pinpricks against the military and paramilitary might of the state, but the fact of their existence and the signs of defiance they left behind sent shivers through the gated communities of the technocratic oligarchs.

The 5th Revolution - IoP

The Crockett radicals focused most of their anger on **Silicon Valley**. Though their raids weren't violent or even particularly disruptive, they were striking at the beating heart of the high tech domain. In Palo Alto, for example, they scrawled *BizWarCriminals* and swastikas in red paint on a company headquarters building. And down the road, they draped a banner from an Interstate 280 overpass that read "Screw the 4th – Join the 5th Revolution – IoP, the Independence of People." They even did a leaflet drop from a small plane over San Francisco that flooded the city with old-fashioned Wanted posters featuring the mug shots of five leading Valley CEOs, all photoshopped to look grisly and mean.

As the weeks went by, however, even these more visible and brazen acts were considered too passive, a glove slap of a protest rather than the retaliatory strike the companies deserved. The 5ers, as this group of more radical Crocketts had become known, were angry with the state's politicians, but they hated the high tech companies that were their former employers. As they saw it, those companies weren't truly American enterprises, but were actually extra-state organizations whose sole allegiance was to maximizing profits. They were indifferent to the harm they inflicted on American citizens in the process and thus could legitimately be seen as a foreign enemy which Americans had every right and, indeed, the responsibility to repel. So, the 5ers changed their tactics once again. They plotted much more violent attacks, designed with one purpose: to exact vengeance by hurting the high tech companies

the exact same way those companies hurt people – financially and psychologically.

The impact was immediate and shockingly audacious. The 5ers blew craters in the 101, so shipments of robot parts were delayed. They torched the towers of the special power lines that ran into one company's production facility, disrupting its operations. They lobbed gasoline bombs over the wall of a gated community where a number of tech company CEOs lived. And, in their most violent act, they stormed one of the electrical substations that served downtown San Jose in an attempt to occupy and then shut it down. The attack was foiled by a rapid response force from several local police departments, but as the 5ers retreated, they stripped the picture of a late model Bentley from a highway billboard and left behind a message for the authorities. It read, "You will be powerless without power. We are powerful despite it. IoP!"

MAD Morphs

The CEOs of some of the most famous high tech brands on the planet screamed at local and state officials, demanding that more be done to capture the culprits or, at a minimum, contain them. The 5ers' safe haven in the no-go zone, however, complicated the situation and made it much more intractable and potentially dangerous than the business leaders realized. These latter-day vigilantes were in a position where they could do more than disrupt commercial activity; they could actually threaten the security of America's most powerful weapons. A significant portion of the US nuclear arsenal was located in California, and like the U.S. Capital before January 6, 2021, their storage facilities weren't designed to defend against an internal threat like a 5ers' guerilla raid.

The Point Loma Naval Base, for example, housed the U.S. Navy's Submarine Squadron 14. That single unit included five nuclear capable Palo Alto class submarines, each with enough destructive capability to incinerate an entire city, let alone a company production facility no matter how vast. Other nuclear assets were stored in facilities located throughout the state as were the command and control centers that oversaw their security and maintenance. It was a formidable nuclear capability – greater, all by itself, than the total assets of most other nuclear nations – and yet also more vulnerable than most Americans realized. In response to lower defense budgets, the federal government had eliminated most of the high cost humans in its

workforce and relinquished control of these weapons to intelligent machines.

In fact, artificial intelligence had played a role in defense planning in general and nuclear weapons deployment, in particular, for decades. As early as the 1980s, the Survivable Adaptive Planning Experiment had been established to use AI to translate reconnaissance data into nuclear targeting plans. By 2040, however, DOD's application of AI had expanded exponentially. Although the United States had publicly renounced the use of autonomous weapons, much of the military's intelligence collection and analysis was being done by smart machines. On the one hand, that freed up soldiers, sailors, airmen and marines to focus on executing the right offensive and defensive decisions, but on the other hand, those decisions were now based solely on options presented by SCMs with no moral or ethical calculus. A 2019 RAND paper posited that this total reliance on AI dramatically increased the risk of a miscalculation, if not by a machine then by a human who misinterpreted what a machine was telling them.

The 5ers added another and extremely dangerous dimension to this situation. No one believed they would actually try to take control of a nuclear weapon, but they might mount an operation to embarrass authorities by breaching the perimeter of a facility where they were stored, just to show how serious the 5ers had become. That relatively limited objective, however, could inadvertently provoke a disastrous response. Confused by what was happening, the intelligent machines operating the facility could overreact and unleash a massive counterassault that would devastate the attacking 5ers, to be sure, but also inflict horrific collateral damage on innocent citizens in nearby areas. The weapons would remain secure, but humans would pay a very severe price. Mutually assured destruction had become "machine assured devastation," and once again, humans would bear the consequences if a mistake were made ... only now, that mistake might be caused by a befuddled machine.

That was exactly the conclusion of a Top Secret wargame conducted by the Pentagon in late 2045. The public was kept in the dark, of course, and defense offi-

cials were reluctant to install safeguards that could potentially arouse the curiosity of some do-gooder citizens group. As a general told a Congressional committee in a classified briefing, “Part of our job as the nation’s defenders is to avoid stoking panic, so we think it’s appropriate to let the public think everything is okay. In fact, that’s exactly what we tell them. We are strongly, very strongly in control of the nation’s nuclear arsenal. It’s a beautiful thing.”

No one had the courage to disagree. At least no one in the Congress. However, an analyst working in the planning division of the Defense Department wasn’t so easily put off. He wrote a memo to his boss, arguing that the failure to deal with the double-barreled threat of machine control of nuclear weapons and a possible 5er attack on nuclear installations put millions of Americans at risk in California and beyond. Two days later, he was fired. As required by law, he turned over all of his work files to others in the division, and was then promptly escorted from the building. The next morning, a national security blogger named Fanny Eller got an anonymous email message with multiple attachments that told the whole story. She called it *The Military Message* in her subsequent postings and used it as the title of her bestseller a year later.

Hollywood Misses a Happy Ending

The Military Message and the firestorm of news reporting and blogging that followed it brought the danger of nuclear weapons back into the public consciousness.

It was a much-needed reminder. The widespread fear of nuclear weapons that had colored the national mood during the last half of the 20th century had largely receded from memory by the fourth decade of the 21st. Unfortunately, however, machine assured destruction had only a Warhol-like tenure in the spotlight. Americans were now aware of the danger, but they were fixated on a much more tangible and proximate threat: the hydra-headed demon of hunger and physical insecurity. They had given up altogether on satisfying their higher order needs, and spent their days and often their nights as well searching desperately for the basic necessities of life.

Like an oil slick fouling a pristine beach, the situation polluted the outlook of those Californians who continued to live south of the no-go line. It blackened whatever optimism and hope they had been able to muster and coated them with despair. Most were also still self-aware enough to recognize the condition for what it was – PTSD – and to know they needed help. But with no employer-subsidized health insurance or a public health system to fall back on, their only resource was online. Happily, free counselorbots were readily available and because all had been trained

with similar data sets, their prescriptions were reassuringly the same: give yourself a break. Get away from it all, if only for an hour or two. Enjoy a happy ending, even if it's make-believe.

It was the perfect shoutout for that most Californian of all institutions, Hollywood. Its studios had long been an enthusiastic chronicler of human triumph over all forms of existential doom. A life-ending meteor about to hit the Earth? No problem, a gang of roughnecks will come to the rescue. An alien invasion about to decimate humankind? Don't worry, a broken-down, old pilot will save the day. The movie makers of tinsel town have long known how to frame an end-of-humanity threat and, equally important, how to give movie-goers something to cheer about in the end.

They also had years of experience portraying the threats of runaway technology and weather disasters. More specifically, a number of productions – from the original *Terminator* in 1984 to the *Terminator* sequel in 2019 – had depicted the rise of intelligent machines, and at least two films – former Vice President Al Gore's 2006 treatise *An Inconvenient Truth* and the 2019 movie ironically named *2040* – had addressed the effects of climate change. No movie, however – not a single one – had piled the two crises on top of one another and created a dramatic version of the cataclysm that was actually upending peoples' lives. So, that's what a couple of young actresses set out to do in 2039.

As might be expected, the first draft of their movie script was not ready for prime time. They were smart enough to recognize that it had deficiencies and brazen enough to talk their way into meetings with a number of seasoned Hollywood scriptwriters, where they asked for feedback and suggestions. Six rewrites later, they had a story that could potentially be bankable, so they went looking for someone to back the venture. They expected to get some rejections, but they were stunned by how many they got and how fast they came. Worse, the explanation they were given was always the same: the story was just too complicated for people to understand. And,

if they couldn't understand it, they wouldn't be willing to suspend their disbelief and accept humanity's victory in the end.

"Look ladies," one potential investor told them, "humans can deal with horror – in fact, we make a ton of money by frightening people – but the horror has to be simple, really simple for people to buy into it. And this – this story of two different disasters at the same time – well, that's just too much for Joe and Jane America to comprehend ... let alone believe they have the right stuff to overcome it."

By that point, the two actresses had invested two years in their script, so they took stock of their situation and decided to end their quest. They still believed they had a good story – an epic challenge that pushes people to be the best they can be and ultimately, against all odds, prevail – but finding the money to make it into a movie had become a Quixotic venture. It wasn't Hollywood that had passed them by, however, but exactly the opposite. They had raced past an industry that was living in the past. It was a startling abdication of institutional imagination, and one that extinguished the reassurance of a happy ending, no matter how much it stretched the limits of plausibility.

Even as the beaches in Santa Monica were lost to the rising sea and even as millions of people lost their jobs to the rise of intelligent machines, tinsel town contented itself with the production of cartoonish tales of super heroes. The industry that had once championed the heroics of everyday Americans turned instead to tales where only extraordinary beings could save ordinary humans. People still went to the movies and streamed them online, of course, but they went to be drugged, not reaffirmed. They went to escape, not to be stirred to action. And, with each passing day, each new movie release, the tragedy of their lives' desecration became more real, their courage lost more of its certainty, and their hope grew ever more faint.

Chapter 6
Whither We
Goest ...

A Tragedy or An Epic Tale

The Titanicity will profoundly and permanently change what it means to be a human and what it means to live and work as one everywhere around the world and most especially in the United States of America. Its twin and concurrent crises are the existential challenge of this time in the country's history. It is not another assault on our health like the coronavirus pandemic, as terrible as that has been. Nor does it mirror the economic contraction and loss of jobs caused by the contagion, as widespread and debilitating as they have been. Rather, the Titanicity is a dark menace so monstrous it dwarfs those threats to our wellbeing and security. It will overwhelm the guardrails of modern life in America, assault the values and beliefs we cherish, and imperil our purpose and possibilities as a people.

When the Technological and Climatic Singularities intersect in 2040, they will engulf us in economic insecurity and societal impoverishment beyond anything we have ever experienced, and beyond even what we can comprehend. These two crises will subject us to a life-altering cataclysm of simultaneous financial, physical, psychological, emotional and spiritual stresses. The resulting trauma will be crippling. It will maim some, paralyze others and diminish the quality of life for all. The Titanicity will be a democratic tragedy beyond comprehension and, as a result, beyond our ability to respond effectively.

But, it could be something else. There are actually two possible responses to this life-defining challenge that's about to engulf our nation.

If We the People who compose today's four American generations refuse to recognize the threat, if we let political advantage or financial gain cloud our vision, if we refuse to act promptly and impactfully, we will subject ourselves to horrific suffering and loss. We will be responsible for the harm we endure and the crippled future we bequeath to those who follow after us.

On the other hand, if we find the courage and commitment to face up to the tests of character the threat will impose, if we are willing to reset the values and behaviors that precipitated its constituent crises, if we can salve the shock and brutality of simultaneous technological and climatic disruption, we can minimize the harm they do and reset our course to a productive and fulfilling future. We can transform the tragedy into an epic tale of human talent and accomplishment.

We the People of America can forge a new destiny for ourselves and for our kids and grandkids. We can make this nation the place it has always aspired to be.

We can refuse to allow ego-driven and dehumanizing behaviors to expose us to the unethical development and application of our technology.

We can recreate our economy and society so that they protect our home planet and truly embody the ideals enshrined in the founding documents that define us.

We can rise to this occasion; we can see the crises we have created, and we can harness the exceptional power of our native talent to resolve them.

We Boomers and GenXs, Millennials and GenZs can be the next generations to be recognized as the greatest in American history.

We can be heroic.

The First Perfect Catastrophe

In 2040, Americans will pass through an inflection point that changes everything about the American experience. It will thrust us into a nation-rending catastrophe. A trauma so staggering, so devastating to our self-image as a people that it will overwrite our DNA with an all-consuming grief and hopelessness. In that respect, it will be perfect – a convulsion that leaves us with no escape except into despair and misery. And tragically, it will also repeat history. It will echo another perfect catastrophe, one that touched almost every single American almost a century ago. That event was also an economic and societal reversal so all-consuming, it stunned the nation. It too ripped apart our self-confidence and weakened our faith in the American Dream.

As with the Titanicity, this first perfect catastrophe was caused by the convergence of two crises, and those crises also both displaced opportunity in the world where Americans work and ravaged hope in the world where they live. It was powerful enough to inflict suffering more terrible and widespread than anything we had ever seen and to scar us with a memory that staggered our inherent optimism and battered our faith in the future. It hit us as a one-two punch so vicious, we thought we were down for the count or worse, out for good.

Our first perfect catastrophe was a deeply painful passage for millions of us,

and yet, we found a way to move past it. We charted a course that enabled us to resurrect ourselves and return to prosperity. There were dissenting voices raised against the plan, of course – this is America after all and disputation is one of our core competencies – but in the end, we agreed on a strategy of sufficient scope and scale to defuse the threat. We not only survived the catastrophe, we used it to build an even better America.

It is both logical and reasonable, therefore, to see that strategy as an appropriate guide for addressing the new challenge now taking shape in the country. The steps we took back then, individually and collectively, would seem to provide exactly the instruction manual we need for dealing with the Titanicity, both now and after it occurs. It might require a bit of updating, but other than that, it is likely to be the ideal shortcut to a positive outcome. It can get the job done with a minimum of uncertainty. All we have to do is stick to what we know, and that hard-earned wisdom will pull us through.

We won't, however, be able to count on the federal government for such a common-sense approach. Not in this era of hollow civic leadership. What happened in the past was a formidable undertaking, and the current denizens of Washington, D.C. will resist accepting the responsibility and the risk of doing so again. Too many of them lack the requisite courage and conscience, so they will fixate instead on half-measures and small steps. Resolving the Titanicity will require big ideas and bold action, but they will discuss and debate, dither and delay and ultimately do nothing of any genuine substance.

Their cowardice will be disguised as philosophical disagreements, their meekness tricked out as the exercise of principles. It will be the kind of drama that only plays well on C-SPAN, however, and the American people won't be fooled. So, when the enormity of the situation becomes too much to bear, when the disgust they feel finally boils over, they will rise up and launch a **Second American Founding**. Not to protest the tyranny of a distant monarch, but to rally the citizens of a government

that's let them down. Not to establish a new Republic, but to reclaim the one that's been forsaken by their leaders. Not to take over the federal government, but to do exactly the opposite – to get involved in their democracy. To practice citizen activism – responsible civic engagement that is the antithesis of January 6th. They will come from every walk of American life and unite in a national mobilization designed to produce the right response to the Titanicity.

That response must have the scope and scale to address the enormity of this second perfect catastrophe. The apostasy of corporate America will subject the workplace to such a massive reconfiguration that only a fundamentally different approach to employment will be able to protect the country's working men and women. And, the reckless destruction of the planet will drive its climate to such dangerous extremes that anything less than a total reconceptualization of citizen service will endanger every man, woman and child in the country. Each of those realities will be a self-evident truth to the American people. And, that recognition will morph into a clarion call, not to rally citizen-soldiers, but to assemble citizen-activists. As it was for their ancestors, the common cause of these Americans will be freedom – freedom from the insecurity of job loss brought on by out-of-control AI development and freedom from the devastation of ever more destructive weather caused by the willful behavior of too many of our own people, businesses and institutions.

No less important, with 2040 already in sight on the horizon, there will be no time for routine governmental action (or inaction). The threat is too near for some special commission to study the situation or for some blue-ribbon committee to debate alternative approaches. The harm intelligent machines and an angry planet are already beginning to inflict on the American people as well as the anguish and anger that harm evokes will make such normal bureaucratic procedures blatantly inadequate. Instead, the government will have to turn to the only appropriate precedent we have. It will have to look backward to move forward and learn from our history during our first perfect catastrophe – the Great Depression. It will have to look to the New Deal as a guide to resolving the Titanicity.

Introduced in the 1930s, the New Deal was a national mobilization implemented through an enormous, multifaceted agenda of legislative initiatives and new regulations, all designed to stimulate commercial activity and put people back to work. The campaign's goal was to restore the vigor of businesses, the vitality of farms, and the capability of the financial sector that supported them. It consciously and explicitly tapped into the country's native faith in recovery, both to reinvigorate peoples' self-confidence and to propagate visible signs of progress. Fittingly, its centerpiece was called The National Industrial Recovery Act, and its stated purpose was to "regulate industry for fair wages and prices that would stimulate economic recovery."¹²⁹ That two-pronged objective was essential as both the nation's workers and its businesses were suffering.

The stock market crash of 1929 gut punched investors who were over-extended and couldn't meet their debt obligations or provide the capital required to sustain the market. It then sucker-punched average Americans who lost both their life savings when their banks failed and their jobs when their employers collapsed. Businesses couldn't get the money they needed to pay their workers, and customers no longer had the cash to pay for even basic necessities. Unemployment, which was at 3 percent in 1929, shot up to almost 25 percent of the total workforce and almost 40 percent of the non-farm working population by 1933. Another 25 percent of the labor force had to take a pay cut, just to hang onto their jobs.¹³⁰ As a result, both those who were lucky enough to still be working as well as those who weren't had no choice but to stand in desperate breadlines in order to feed themselves and their families.

This collapse of the country's banks and businesses left America's workers reeling with anxiety and fear. Paid employment became a precious possession beyond the reach of many and always at risk of being snatched away from everyone else. It turned American life into an impoverished and treacherous passage. And even as we were enduring it, a second crisis was battering the nation. The unemployment caused by the Great Depression was accompanied by a climatic disaster unfolding in America's agricultural sector. The drought-fueled Dust Bowl ruined more than

100,000,000 acres of farmland on the High Plains and left even more Americans without a way to earn a living.¹³¹

Farmers could no longer produce a sufficient crop on their land to feed themselves, let alone have enough left over to bring to market. Most struggled on for a year or two, but by the early 1930s, the situation had become untenable and unbearable, there was nothing left for them in their fields. So, as John Steinbeck chronicled in *The Grapes of Wrath*, they piled their belongings onto jalopies and farm trucks and gave up on a way of life that had sustained their families for generations. It's estimated that between 1932 and 1940, 2.5 million Americans were forced to abandon their farms and search for work in other regions of the country.¹³²

The New Deal addressed the unemployment crisis and the lack of a social safety net by establishing the Works Progress Administration and introducing an agenda of groundbreaking human services legislation, including the Social Security Act. These initiatives were buttressed by others that attacked the root causes of the catastrophe. Regulations were implemented to correct many of the most egregious business behaviors and dangerous investment practices on Wall Street. Reforms were launched in the banking system so capital could begin to flow again to both large corporations and Main Street businesses. And, still other initiatives helped to invigorate the labor movement, which in turn, led to sustained wage growth and the emergence of a true middle class in the country.¹³³ Slowly but steadily, working Americans became consumers again, and their spending helped to regenerate the economy even further, and put even more Americans back to work.

That turnaround was replicated in the agricultural sector. The New Deal laid the foundation for recovery there by establishing the Farm Security Administration and the Soil Erosion Service (now called the Natural Resources Conservation Service).¹³⁴ As it was in the business sector, the goal was to provide a bridge over the hard times for those who had been affected by the crisis and to institute systemic improvements that would restart growth and expand it in the future. Loans were

extended to help family farmers get back on their feet. Crop rotation and other more sustainable agricultural techniques were implemented. And, research on heat and pest-resistant strains of grains and other plants was funded. It took years to accomplish, but the net effect was to transform America into the most prolific agricultural producer on the planet.

Those outcomes in the workplace and on the farm were conjoined successes. Achieving them through separate legislative initiatives that were integrated into a single federal campaign essentially acknowledged that the Dust Bowl and the Great Depression were two unique, but inextricably linked crises. They were different in kind, but they confronted the nation with sibling threats. The only way they could be effectively resolved, therefore, was with a plan that addressed both of them concurrently. The New Deal involved many different programs, to be sure, but all of them were part and parcel of one focused strategy.

This strategy had two goals. The immediate and most pressing was to ameliorate the struggles of the American people, to get them off the breadlines and back on the country's production floors, farms and retail store payrolls. It was a herculean undertaking, but fewer than ten years after the collapse of the stock market, that objective was well on the way to being accomplished. The greatest economic and climatic disaster in American history was being successfully resolved, and a growing number of Americans were going back to work and enjoying a more secure standard of living. Sadly, it would take the threat of World War II to complete the recovery, but still, the New Deal not only got it started, it revitalized Americans' faith in their country and its ability to meet any challenge.

The second goal of the New Deal was more corrective than recuperative. It was to address the single most important cause of both crises – human behavior. The Depression and resulting unemployment crisis were the result of human arrogance and market manipulation compounded by governmental laxity; the Dust Bowl and farm crisis were the product of human carelessness and agricultural illiteracy

compounded by a drought. Together, those two strains of misconduct were an indictment of both the country's business practices and its stewardship of the land. For that reason, the New Deal was explicitly designed to install protections that would eliminate or at least restrain such character deficiencies in the future.

America is a country of DIY practitioners. We fix stuff that's broken. So, in addition to all the suffering they caused, the Great Depression and Dust Bowl also produced a positive outcome. They forced many of the country's leaders to recognize the need for improvement and to dedicate themselves to achieving it. Since the country had brought these disasters on itself, they believed, the New Deal also had to be a platform of groundbreaking laws and regulations that would resolve them. There would be debate about their specific purpose and scope and even Supreme Court rulings that invalidated some initiatives, but in the end, sufficient agreement was achieved, and the New Deal's policies, structural reforms and administrative rules would significantly improve the quality of life in America.

Collectively, the New Deal's legislative and regulatory actions proved to be an effective strategy that put the nation on the road to recovery from its first perfect catastrophe. They were not without shortcomings, but they enabled the country to meet the challenge, overcome it and move on to something better. Given that success, they would appear to be exactly the right precedent and blueprint for the federal response that will be required to address the Titanicity. The New Deal was effective because its proponents recognized and responded to both of the crises that were shaking the nation in the 1930s, and they did so with speed, focus and imagination. They introduced exactly the campaign we needed at exactly the moment we needed it.

But, what about at this moment? And, what about when we hit that trigger point now just two decades away? As we confront the prospect and eventual arrival of our second perfect catastrophe, we have to be certain that a New Deal 2.0 can deliver yet another recovery. We must eliminate any doubt about its ability to marshal

our individual and collective strengths and produce, in the 2020s and 2030s and then in 2040 and beyond, the same positive outcome it achieved in the 1930s. And, to do that, we must first be certain that its animating vision is appropriate and sufficient for this new challenge. In effect, we must make sure the way it looked backward to move forward is the right strategy for resolving the Titanicity.

The Grand Deal

The brilliance of the New Deal was that it not only addressed and overcame the country's unemployment and climate-driven crises, it repaired the spirit of the American people. Its vision was broad and bold enough to reset both the country's business and agricultural sectors and to do so before the suffering made the nation too weak or too dejected to recover. Historians today may quibble about the impact of this or that program, but the restoration of the country's self-image and confidence is uncontested. Following the New Deal, Americans could once again hold their heads up.

Given that successful outcome, it seems entirely appropriate to simply rinse and repeat when devising our campaign for combatting the Titanicity. The recovery strategy of the New Deal has been tested and proven to work, so why meddle with success? We have a winning strategy, and we should stick with it.

It's a logical conclusion as well as a practical approach to solving the problem. Unfortunately, it would also be a grave mistake. Our second perfect catastrophe is similar in kind to our first, but very different in scale and impact. For that reason, the New Deal provides the precedent today's government will need, but not the totality of what it must do. That campaign was designed to ensure the American people had the standard of living and quality of life to which they are entitled by restoring

the country's traditional commercial and agricultural institutions. That is the right mission, but not the right strategy. It is the correct vision, but not an adequate plan of action. The New Deal, even with its programs and policies updated for our time, does not marshal the generosity of imagination or the abundance of determination required to overcome the Titanicity.

The New Deal addressed a *fait accompli*; the Great Depression and the Dust Bowl were already underway when it was inaugurated. The strategy we need today must be able to change fate altogether; it must prevent the Titanicity from becoming a second perfect catastrophe. Its mission must be to avoid the negative consequences of that point of no return before they occur or, at the very least, to minimize the harm they do to the American people once we pass it. We must, therefore, use the period between now and 2040 to devise an entirely different approach.

Instead of a New Deal 2.0, we must launch a **Grand Deal**, one with the generosity of imagination – the power, scale and substance – to address the impact of the Technological Singularity and the causes of the Climatic Singularity. And then, we must find the abundance of determination – the grit, courage and sense of duty – to stay the course for however long it takes in the years ahead to implement that plan fully.

The New Deal was a campaign of restoration; the Grand Deal must be a campaign of creation. The New Deal put Humpty Dumpty back together again. The Grand Deal must pick up the pieces – soften their sharp edges – and at the same time, devise an entirely new figure to replace him. It must establish an American reality that has never before existed.

Only a campaign of such grand ambition is sufficient to the task. The impact of the two constituent crises of the Titanicity will be far, far worse than those of the first perfect catastrophe. The Wall Street crash of 1929 put as many as 11 million Americans out of work. The Technological Singularity will cause near universal

unemployment and force almost all 154 million working men and women in this country from their jobs. The Dust Bowl drove an additional 2.5 million Americans off their farms. The Climatic Singularity will cause near continuous ruination in the country and subject all 327 million people living there to a diminished quality of life.¹³⁵ The enormity of the Titanicity will so shatter the American experience that only a strategy of equally enormous scale will be able to deal with its impact and create an entirely new reality for the American people.

In addition to the adequacy of its scale, this strategy must also be shaped by grand aspirations. Its scope must be explicitly envisioned to accomplish extraordinary ends through awe-inspiring effort. The dictionary defines the word *grand* as describing something that is “large and striking in size, scope, extent or conception.” But more than that, the word also signals something magnificent, even noble in character. So the dictionary indicates its denotation of enormous dimension, but also advises that it “adds to the greatness of size, the implications of handsomeness and dignity.”¹³⁶ Said another way, grand indicates something that is both mammoth in its dimensions and momentous in its purpose, consequence or both.

Those attributes would seem to give the word a positive cast, but in everyday usage, it has had a somewhat checkered record. For example, in 2011, the Republicans and Democrats in Congress tried and failed to achieve a Grand Bargain that would have allowed the passage of a federal budget. In the Grand Ole Opry, on the other hand, the word denotes the most storied and respected stage in country music and performing there often represents the high point of an artist’s career. Similarly, in the Grand Canyon, the word evokes the unparalleled size and majestic beauty of that creation, while in Grand Teton, it designates the highest mountain in the Teton Range and one known for its splendor. There are, of course, many other uses of the word, but these suggest that when “grand” is applied to something over which humans have little or no influence, it is invariably a positive description, but when applied to those things we can influence, the word can be positive or negative depending on our actions.

To be seen as positive, therefore, the Grand Deal must be a campaign that is mammoth in scale, momentous in scope and beneficial for all. It must set Americans off on a quest that will take them well beyond restoration to the accomplishment of outcomes that are both original and extraordinary. It must produce three results so impactful and constructive, they change the course of American history for the better.

First, the Grand Deal must challenge Americans to be the very best of themselves. It must represent a test every bit as monumental as those we celebrate for inspiring our finest hours in the past. The Grand Deal must engage us in an undertaking so vast and demanding, it requires an epic level of effort, an awe-inspiring display of courage and an unbending devotion to duty from all of us. World War II was exactly that kind of challenge, and the Greatest Generation earned their acclamation in response. Similarly, the Grand Deal must be the opportunity and responsibility that transforms Boomers, GenXs, Millennials and GenZs into the next greatest generations in the country's history. It must call them to their destiny as citizen-activists and demand exceptional acts from each and all of them.

Second, the Grand Deal must end forever both the ethical failures inherent in the current approach to AI development and the unsanctioned imposition of a financial burden caused by our abuse of the planet. It must correct corporate, academic and other programs that advance the development of artificial intelligence without any consideration of and preparation for the consequences of introducing that technology into the workplace and society. And, it must close down the environmental abuses that cause global warming and violate every person's right to air and water that is clean and accessible and land and seas that are free of pollution and degradation. The Grand Deal must enable Americans to meet their basic needs and to devote themselves to fulfilling work when they no longer have access to paid employment, and it must reduce and eventually eliminate the human sources of our planet's debasement, which in turn, are diminishing our quality of life and our standard of living.

And third, the Grand Deal must make real the values articulated by the country's Founding Fathers. It must redefine the words "all men are created equal" to include every man and woman regardless of their ethnicity, national origin, religion, disability or age. In order to do that, ironically, the Grand Deal must adopt a design methodology used most recently in the development of technology. This approach focuses every step in the creation of a product on optimizing its ability to work in a particular setting. Such a product is described as being designed for that setting "first." For example, a product that is developed specifically to work with a mobile device would be characterized as "mobile first." This methodology has been found to yield a far better result than taking an existing product that was designed to work one way and retrofitting it for an entirely different way of working. To achieve the realization of the country's founding values, therefore, the Grand Deal must be designed with an "equality first" methodology. Its vision, constituent legislative programs, and implementing rules and regulations must be consciously constructed from the very beginning to provide every American with equal access to Life, Liberty and the pursuit of Happiness.

Even with the right scale and appropriate scope, however, the Grand Deal will be an imperfect endeavor. It will reflect the accumulating, but never complete awareness, understanding and engagement of the American people. And, it will be the product of a government composed of people with those same limitations. For that reason – and to be a truly grand quest – it must be viewed and implemented as a work-in-progress. Just as the Constitution recognizes America as an ongoing journey toward "a more perfect union," We the People must embark on the Grand Deal with a commitment to continuous transformation, to becoming an ever better America. We must create and recreate ourselves over and over again in a multi-generational campaign known as The National Aspiration Act.

The National Aspiration Act

The key to looking backward in order to move forward is to have a clear understanding of both the goal we want to achieve and the route we must take to realize that vision. What do we want America to look like – to be like in 2040 and beyond – and how do we intend to get there? If we have the most disruptive technology ever devised and the gravest climatic threat to humankind since the Ice Age, what are we going to do to protect ourselves? How are we going to remake this country, not only for ourselves but for those who follow after us?

The New Deal's National Recovery Act was designed to return America to an improved version of its pre-1929 way of life. It was a strategy to recover what had been lost and to make that past experience even better going forward. The Act was a plan that would restore and refurbish what once was. Its constituent initiatives were conceived to achieve a more perfect version of the *status quo ante bellum* in the private sector and in society at large.

The strategy worked, and that goal was achieved. So, while the Grand Deal will be very different from the New Deal, a version of the latter's National Recovery Act could conceivably be the right plan for dealing with the Titanicity. The programs of the Grand Deal would simply be another chapter in America's well known saga of recovery. Its familiarity would be comfortable, its tenets would be understood, its

requirements would be acceptable, and its prospects for success would be reassuring. Most importantly, a Grand Deal implemented with the driving initiative of the New Deal would connect us to a revered tradition, to an unbroken record of triumph in the face of adversity. It would affirm our intention to stay the course, to retain America as it has always been. Improved, of course, but with its essential structure and modalities unchanged.

As appealing as that approach might be, however, it is a wholly inappropriate response to the Titanicity. As a point of no return, that threat forecloses a reinstitution of what once was. After we pass the 2040 milestone, there will be no going back to the days of human superiority in the workplace and a more temperate climate. And if that's the case – if restoration is no longer an option – then neither is a strategy designed to produce it. The moment we confront our second perfect catastrophe, recovery as a way of achieving progress in America becomes both ineffective and irrelevant.

Faced with that certainty, Americans have no choice but to devise a new implementation blueprint for the Grand Deal. To decide how we will forge an entirely original form of our native exceptionalism. We will continue to be that shining city upon a hill, but we must redefine what that vision encompasses and what we must do to create and nurture it. We can't recover the past, at least as it's been experienced over the last three hundred years, but we can – and we must – build upon it. **We must reach back to where we began in order to reach for what we hope to be.** We must return to our founding aspiration – our original ambition as a nation. Ironically, the only way we can create an entirely new reality in America is by reconnecting with the American Dream as it was first envisioned. We must embark on a Second American Founding.

Taking such an audacious step will require that we establish **The National Aspiration Act** as the animating strategy of the Grand Deal. Its scope and scale must be designed to bring us closer to our founding self-image, to the nation defined

for us by the Declaration of Independence and the Constitution. The elements of our aspiration must be the self-evident truths enunciated in those documents. Our plan for overcoming the existential threat posed by the Titanicity must set us on a course to realize those noble ambitions. It must create a more perfect reality of Life, Liberty and the pursuit of Happiness for all Americans.

Some will argue, of course, that such an aspiration is exactly the same as looking backward to move forward. That's true conceptually, but false in actuality. The National Aspiration Act will look to our spiritual heritage for its cardinal direction, but it will not replicate yesterday's America. We cannot recover what never was. Indeed, the self-evident truths to which we aspire have always been a glimmer on the horizon, and in this moment, they are especially faint. We have allowed ourselves to deviate from their fundamental righteousness by falling into a disposition of self-evident imperfections. We have, for example, accepted:

- the enrichment of an oligarchical class and stultifying income inequality,
- the enduring harm caused by biases in the structural availability of education and healthcare,
- the demeaning of life perpetrated by racial profiling in policing and housing,
- the cruelty of a digital divide that forever limits the future of children, and
- the tyranny of a federal government riven by careerism and the influence of money.

There are, to be sure, other aspects of how short we have been of our founding aspiration, but those are among the most egregious and persistent. As the daily notices in our newsfeed indicate, these imperfections have been both ever present and deeply rooted. They provide more than ample proof of why restoration – even restoration with benefits – would consign Americans to a quality of life that is far less

than they deserve.

From *The Washington Times* in 2014, reporting on a study by Princeton and Northwestern Universities, “America is an oligarchy, not a democracy or republic, university study finds.”¹³⁷

From NPR in 2019, “U.S. Income Inequality Worsens, Widening To A New Gap.”¹³⁸

From CNBC in 2018, “Why the gender pay gap still exists 55 years after the Equal Pay Act was signed.”¹³⁹

From the National Institutes of Health in 2000, “Understanding and Addressing Racial Disparities in Health Care.”¹⁴⁰

From *The New York Times* in 2019, “Still Separate, Still Unequal: Teaching About School Segregation and Educational Inequality.”¹⁴¹

From the U.S. Department of Education in 2011, “More than 40% of Low Income Schools Don’t Get a Fair Share of State and Local Funds, Department of Education Research Finds.”¹⁴²

From an industry publication, *Affordable Housing Finance*, in 2015, “Unaffordable Housing: A Root Cause of Social Inequality.”¹⁴³

From *Smithsonian Magazine* in 2017, “The Racial Segregation of American Cities Was Anything But Accidental.”¹⁴⁴

From *U.S News* in 2019, “Homelessness Spike in California Causes National Rise.”¹⁴⁵

From NBC News in 2019, “Inside 100 million police traffic stops: New evidence of racial bias.”¹⁴⁶

From *Education Week* in 2020, reporting on a study by Common Sense Media, “A Third of K-12 Students Aren’t Adequately Connected for Remote Learning, Report Says.”¹⁴⁷

From MSNBC in 2015 “Money has too much of an influence in politics, Americans say.”¹⁴⁸

From *The Atlantic* in 2015, “How Corporate Lobbyists Conquered American Democracy.”¹⁴⁹

From The Heritage Foundation in 1994, “Term Limits: The Only Way to Clean Up Congress.”¹⁵⁰

In theory, the Congress and every presidential administration work on the issues that stand in the way of our achieving a more perfect union. As we teach our kids, that is how they perform their service to our common good. And yet, those headlines make undeniably clear that we – the adults who are their parents and our nation’s leaders and citizens – have fallen far short of that obligation. The self-evident truths celebrated in our founding documents have become half-truths or worse, self-evident failures.

Our mission, therefore, must be to correct these shortcomings. We must implement a truly Grand Deal by launching The National Aspiration Act, a plan that turns our pledge of allegiance to self-evident truths into bold, transformative action. This Act must introduce specific measures that redress our original sin and all of our other deviations from those truths. It must use the solutions we devise to address our second perfect catastrophe – the convergence of the Technological and Climatic Singularities – to create an ever more perfect reality for America. Its constituent legislation, regulations and policies must ensure that all Americans can meet their basic and psychological needs in an era of machine domination in the workplace and global warming on the planet and in the process, bring the nation ever closer to our founding ideals.

That is the government's job, but it is the responsibility of We the People. It is our duty at this moment in the nation's history. **It is up to us to compel this transformation through active citizenship.** Individually and collectively, we have to become our aspiration – it must shape the way we live and the direction we give our government. It must, in short, determine the way we act as Americans. That is how we look backward to move forward. Alexander Hamilton called America a “grand experiment” in democracy; we must embark on The National Aspiration Act to transform the experiment into a conclusive fact– to recreate ourselves as a nation that finally approaches *e pluribus unum*.

Unconditional Actualization For All

Even with an imaginative and comprehensive strategy, the campaign to resolve the Titanicity will be an **onerous and lengthy one**. We will undoubtedly need every minute of the years leading up to 2040 just to arrive at a consensus on what needs to be done, to draft an appropriate agenda for The National Aspiration Act, and to begin both the fundamental rethinking We the People will have to do and the restructuring that will be required of our government, our economy and our society. Moreover, the challenge won't end there. Beyond that, it is likely to take every ounce of our national will to stay the course and actually see our new reality instituted. Indeed, the final outcome is unlikely to be achieved for a hundred years or more. In effect, successfully concluding the campaign to save the nation from the Titanicity will take ten times longer than the New Deal took to pull the nation out of the Great Depression and twenty times longer than our Greatest Generation took to achieve victory in World War II.

Americans don't shy away from such lengthy endeavors, but we do need to believe that the objective is worthy of the effort we will have to make. We want the result of our undertaking to mean something, to have enduring value, not only for us and those who labor alongside us, but for our family, our hometown and the nation,

as well. We will do whatever it takes, but only if it produces an outcome that matters and in which we can take pride.

Such an objective must meet a number of criteria to be effective, to be both inspiring and empowering. First, it has to be material. It must be significant enough to justify what's being asked of us. To warrant an extraordinary commitment by all Americans, the goal must simultaneously fire our passion and take us to an end state that ennobles and advances us. Second, it must be finite. The campaign must produce a new reality that can be measured and its achievement verified without equivocation or question. It must simultaneously encourage us to reach for an extraordinary vision and enable us to map and measure its dimensions in a way that ensures we have achieved it. And third, a goal capable of both inspiring and empowering the nation must also be relevant and applicable to all. It must be a universal quest that summons the best of every single American. It must simultaneously create a sense of duty within each of us and engage all of us in a kinship of commitment that transcends our individual differences.

Americans had such an objective in World War II. A simple but unambiguous phrase, it gave the efforts of every man and woman a worthy purpose and justified the sacrifices they were being asked to make. It called to each individual and to the nation as a whole and explained why we should exert our last full measure of devotion.

The phrase was first publicly pronounced by President Franklin Roosevelt after his meeting with Prime Minister Winston Churchill in Casablanca in January, 1943. Here's how it's described by the Franklin D. Roosevelt Presidential Library and Museum:

“Although hundreds of pages of detailed plans and contingencies were written during the Casablanca Conference, two words stand out as perhaps the most significant of any uttered during the entire war. Two words that defined Pres-

ident Roosevelt's pledge that '... the American people in their righteous might will win through to absolute victory.' Two words that would set an almost impossible target for the greatest military force the world has ever known 'Unconditional Surrender.'"¹⁵¹

That brief yet profound statement of the country's objective crystallized the reason for and the purpose of everything Americans were being asked to do in World War II. And as history records, they responded. They were inspired by its unflinchingly heroic definition of victory. They felt empowered by the undeniably extraordinary scale of its challenge. And to a person – man and woman; black, brown and white; native America and immigrant – they heard its clarion call and did their duty. They became what we now honor as the Greatest Generation.

Today's American generations deserve no less for the effort and sacrifice that will be asked of them on the long campaign to overcome the Titanicity. That threat, however, is not an external one. Unlike in World War II, the "enemy" we face isn't a foreign axis of evil bent on world conquest. It is, instead, the shortsightedness, the greed and the indifference within our own population. Americans are recklessly introducing intelligent machines into the workplace, and at the same time, Americans are also producing the carbon dioxide that is overheating the planet. As the cartoonist Walt Kelly is reported to have said, "We have met the enemy, and he is us."

Our rallying goal shouldn't, therefore, be something we intend to impose on those who have harmed us, but rather, something we are determined to achieve within ourselves. Only one objective can meet that standard. Only a single audacious aim has the power to unite the American people in a Grand Deal to overcome the Titanicity and at the same time, unleash their native energy in a National Aspiration Act to realize their founding vision. It too is an "almost impossible target" and yet, it alone can mobilize our commitment to the greatest civic campaign this nation – indeed, the world – has ever known. Our goal must be to give every American the genuine opportunity and means to become the best of themselves. Our pledge must

be to achieve **Unconditional Actualization For All.**

As Maslow made clear, actualization is the summit of human need and motivation. It is each and every person's innate desire to experience their epitome of being by engaging in whatever activity challenges, inspires and fulfills them. Unconditional Actualization, therefore, is the individuation of those self-evident truths we hold dear. It achieves its unconditionality by guaranteeing every citizen's access to the fullest and most rewarding expression of themselves. As the Founding Father's put it more mellifluously, it is each person's right to Life, Liberty and the pursuit of Happiness.

Further, to make its promise credible, Unconditional Actualization also signifies the universal satisfaction of every other need identified in Maslow's hierarchy. Reaching the epitome of being human is possible only if every American also has their basic and psychological needs met. They must be able to put food on the table and a roof over their head and to enjoy a healthy and secure life. They must also feel that they are a full and equal member of American society and that they are recognized and respected for their value as a citizen. Those are preconditions for actualization, so this twenty-first century call to action also achieves unconditionality by eliminating any factor that could restrain or prevent every citizen from achieving them. It isn't two words, but four. It isn't Unconditional Actualization, but Unconditional Actualization For All.

A Two-Front Campaign

As with our drive for Unconditional Surrender in World War II, the campaign to achieve Unconditional Actualization For All will be waged on two fronts. Instead of a war in Europe and a war in the Pacific, however, it will be the struggle to contend with the Technological Singularity and the struggle to address the Climatic Singularity.

Dealing with the Technological Singularity will be a battle against consigning humans to the role of attendants serving their machine overlords and masters on-the-job or, worse, to the status of unvalued and therefore unwanted resources in the world of work. Those machines, however, are not the threat; it is instead the unconsidered consequences of their development and application. That human behavior is an immoral assault on our ability to self-actualize and to meet our basic and psychological needs.

Sadly, there are already numerous examples of such unethical behavior both in the development of intelligent machines and in the preparation for their introduction. With the exception of criminal applications, those behaviors generally fall into two categories: failure to consider the consequences of their use in the workplace and failure to address the future of working men and women after that use becomes widespread. Unethical development creates adverse impacts, which while usually

unintended, nevertheless stigmatize people and undermine their access to full citizenship. Unethical preparation for the introduction of SCMs increases the vulnerability of people to the destabilizing shock and potential harm of profound economic and societal change. Both are immoral because they attack the inherent need of every person to meet their basic and psychological needs or what we in America recognize as their right to Life, Liberty and the pursuit of Happiness.

Unethical SCM development is most often the result of a phenomenon called black box AI. The term describes the creation of intelligent systems so complex that even their human creators are unsure of what's going on inside the machine. In some cases, unscrupulous developers deliberately present their product to customers as a black box to avoid any examination of its likely outcomes, while in others, the hundreds of thousands or even millions of lines of code in the product make its internal workings difficult if not impossible to comprehend even by its developers. In both cases, however, this developmental ignorance produces a host of harmful consequences in such diverse fields as education, criminal justice administration, human resource management, and mortgage lending.

In the case of mortgage lending, for example, unconsidered SCM development has actually increased the unethical practice of discriminating against minority loan applicants. A report by professors at the University of California, Berkeley's Haas School of Business states:

“... even if the people writing the algorithms intend to create a fair system, their programming is having a disparate impact on minority borrowers — in other words, discriminating under the law.”¹⁵²

Machine bigots are keeping African-Americans and Hispanic-Americans from receiving loans for which they qualify and thus immorally limiting their ability to meet their basic needs. There was likely no intentionality on the part of the machines' developers, but there was a harmful outcome, and that outcome was directly

caused by those developers. They trained the machines, so they are complicit in the outcome. They created the bigotry.

Similarly, ProPublica analyzed the algorithm used in several states to determine which criminals were most likely to reoffend and thus should continue to be incarcerated. They too found that machine bigots were at work, in that case by immorally denying certain individuals their right to Liberty simply because of the color of their skin. According to a media report:

“... the algorithm incorrectly labeled black defendants as ‘high risks’ almost twice as often as white defendants. Unaware of this bias and eager to improve their criminal justice system, states like Wisconsin, Florida, and New York trusted the algorithm for years to determine sentences.”¹⁵³

While the vast majority of enterprises engaged in producing intelligent machines are good corporate citizens, these and a host of other examples make clear that their developmental processes are generating too many unethical outcomes. There are two schools of thought as to what exactly is the root cause of this problem. One school believes that it is the lack of transparency in corporate research and development programs. They argue that there is no feedback loop to provide a real-world perspective on how artificial intelligence is interacting with humans in the present, so all of the data used to teach these systems is historical and thus representative not of our aspirations, but of our shortfalls in the past. In their view, the great irony of unethical outcomes from intelligent machines is that they are the product of one group of humans – developers – excluding another group of humans – users – from participating in the developmental process.

A second school argues that unethical outcomes from intelligent machines are caused by a lack of industry oversight. There are no established standards or rules that provide clear and unequivocal guidance on what is right and what is wrong, so companies are left to decide for themselves. That’s problematic, this school con-

tends, because companies have an inherent conflict of interest and thus cannot be expected to regulate themselves. A corporate Ethics Committee composed of external subject matter experts serves at the pleasure of the company and may or may not have the authority to influence its research. A company's Board of Directors, on the other hand, often lacks the expertise to evaluate the research and determine either its soundness or appropriateness. For that reason, the proponents of this school argue, only governmental involvement provides a satisfactory approach.

That view was the driving force behind the American Artificial Intelligence Initiative launched by the federal government in 2019. As reported in the media, the program had two primary thrusts. The first was to help Americans understand and trust the potential benefits of AI applications. The second was:

“... governmental oversight and regulation to ensure that AI development and innovation continues to protect the interest of ordinary people within US borders. These newer regulations should expand AI capabilities while ensuring the technology remains safe.”¹⁵⁴

While it's too early to tell if this initiative will eliminate the unethical outcomes of current SCM development, it leaves untouched the equally unethical lack of preparation for the introduction of these machines. It attempts to guide their development in a positive direction, but fails to address what will happen to working men and women as those machines displace them from their jobs. In effect, the government is facilitating the development of machines that will create near universal unemployment and ignoring the consequences of doing so. That lack of concern threatens the ability of every American to meet their basic and psychological needs. It is either governmental myopia or governmental malpractice, but unquestionably immoral. And sadly, the evidence of the harm it will inflict is an almost daily entry in our newsfeed.

Recent events at a place called iHeart Radio provide a case in point. In an ee-

rie echo of the PepsiCo incident in Plano, the parent company of this free broadcast, podcast and streaming radio platform announced a “massive” layoff early in 2020. As cited in *Digital Music News*, one source to Billboard actually called it “a blood-bath.” Reports in other media indicated that as many as 850 employees lost their jobs.¹⁵⁵

The company, in contrast, described the action this way:

“As it enters the new decade, iHeartMedia today announced a new organizational structure for its Markets Group as it modernizes the company to take advantage of the significant investments it has made in technology and artificial intelligence (AI) and its unique scale and leadership position in the audio marketplace.”¹⁵⁶

And then, reprising the “technology is your smiley-faced coworker” meme, it went on to say:

“Additionally, the company’s technological advancements increase its ability to support its employees and its customers through world class systems and innovation.”¹⁵⁷

Such reassurances rang hollow, however, to industry technicians and broadcast talent. A sound engineer at a major EU radio network spoke for many in his online post to the article:

“OMG!! The AI disaster for humanity has already started ... what a mess!”¹⁵⁸

That engineer understood full well that iHeart Radio’s installation of intelligent machines wouldn’t stand alone for long. The company’s competitors would have no choice but to embark on a similar strategy to retain their market position. As a result, what began as one company’s layoffs would soon become an AI arms race – an industry-wide assault on working men and women everywhere in the audio

business. Indeed, with each new generation of more capable SCMs, even more of iHeart's remaining human workers are likely to get their pink slips and then, so too will their counterparts in every other digital and broadcast company. It is the death dance of paid employment, and it will also play out in every other industry in the nation's economy.

Even as this disaster is unfolding and being simultaneously replicated in thousands of other companies, the second front in the fight for Unconditional Actualization For All is also underway. It, of course, is a drive to end the human behaviors causing climate change. The carbon dioxide that is created by the cars we drive, the public utilities we license, and the homes and business buildings we heat and cool as well as the way we farm and ranch, mine and manufacture and endlessly pollute are already destabilizing our weather. Droughts are parching the land in some areas, while rainfall is flooding fields and stores in others. Forest fires are destroying entire communities on the west coast even as hurricanes batter shore towns in the east. Heat waves are baking neighborhoods in the midwest while record high temperatures create life-threatening situations in the southwest. More and more, Americans feel as if they are cooped up on an ever-warmer planet with no prospect of a return to more temperate norms.

As with the introduction of intelligent machines, this depiction isn't science fiction, but a daily documentary all over the country. In 2019, for example, the U.S. Department of Agriculture published a report on the state of farming in the United States. According to CNBC, the Department stated that "19.4 million acres of farmland nationwide weren't planted due to record spring rains and historic catastrophic flooding."¹⁵⁹ In Steinbeck-like terms, its report went on to note:

"A ripple effect of the crisis has turned some farm-dependent communities – like Downs, Kansas, population 103 and dwindling – into ghost towns, as farm families leave, jobs disappear, stores close and dust from soil erosion covers sidewalks and streets."¹⁶⁰

Another report, this one by the Associated Press, echoed that description in its portrayal of the climatic disruption in other parts of the country:

“In Missouri, the number of annual 4-inch (10.2 centimeter) or greater rain-falls was 58% higher than the long-term average. In Iowa the increase was 31% and in Nebraska it was 23%....

“Heavy rains and flooding kept farmers from their fields in more than a dozen states this year, the wettest on record through October in the contiguous U.S., and breached levees along major waterways that included the Arkansas and Mississippi rivers.”¹⁶¹

Deke Arndt, the climate monitoring chief at NOAA, described the situation this way:

“... we’re seeing big rain and even bigger snows that are consistent with what we will see in a warming world.”¹⁶²

The despair caused by the unconsidered introduction of artificial intelligence and the irresponsible warming of our planet is a direct assault on our efforts to achieve Unconditional Actualization For All. It is as if We the People have been transformed into two hostile forces that are intent on destroying the bounty of our workplace and beauty of our land. These are self-inflicted harms – acts by American public and private sector leaders and by we ourselves – and if we fail to reject them, the economic insecurity and societal impoverishment that results will shut down any effort to reach for the best of ourselves. They will generate so much devastation and misery that Americans will lose all hope as well as the opportunity to be fulfilled.

In 2018, CBS News published an article which described the findings of a study conducted by Nature Climate Change.

“In the not-too-distant-future, disasters won’t come one at a time. Instead,

according to new research, we can expect a cascade of catastrophes, some gradual, others abrupt, all compounding as climate change takes a greater toll.”¹⁶³

That same compounding effect will also occur as a result of our culture of unconsidered technology development. As Wendell Wallach, an ethicist and scholar at Yale University’s Interdisciplinary Center for Bioethics, put it:

“Social disruptions, public health and economic crises, environmental damage and personal tragedies all made possible by the adoption of new technologies will increase dramatically over the next twenty years.”¹⁶⁴

Such warnings have been issued for decades, but most Americans still find it difficult even to imagine that they could go hungry or be seriously inconvenienced by the weather. Or lose their job or worse their career to some robot that’s smarter than they are. At least that has been the case until recently. Logically, they understand that climate change and artificial intelligence might threaten the health of poor people and the jobs of manufacturing workers in the country. In their minds, those are particularly vulnerable groups, but for everyone else, the danger simply isn’t credible. America is the land of plenty and plenty of opportunity. Or, at least it was until 2020 arrived. In that single turn of the earth, every man, woman and child in the country learned what a threat to their actualization would actually be like.

The Covid-19 pandemic brought shortages of food and other essential supplies to just about every region of the country. Like incessant rains and persistent droughts, like intelligent machines and automation, the virus maimed lives indiscriminately. It made some crops unharvestable because sick farm laborers were too weak to work in the fields and drove millions of Americans to local food banks because laid off workers lost their income and any prospect for reemployment. For the first time in the lives of most Americans, there was the possibility they would not have enough to eat. Or be forced out onto the streets to live.

The Covid-19 pandemic not only proves that such a traumatizing situation is possible, it confirms that the far larger and more devastating catastrophe of the Titanicity has the capacity to thrust the entire nation into a contagion of desperation. Without exaggeration, it is a life-threatening situation, and it can only be prevented with a life-affirming alternative. The only counter equal to the disruptive power of the Titanicity is the hopefulness of Unconditional Actualization For All. And, that noble goal can only be achieved if a new reality is introduced in America. If citizen-activists establish the Neonaissance.

Chapter 7
The Neonaissance

The Possibility

If we are able to overcome the Technological and Climatic Singularities – if we can correct the human behaviors causing the Titanicity – what will be the outcome?

If we can move beyond our recent past and instead look to our founding vision to remember and realize the nation of our Dream, what will life in America be like?

If we can mobilize our generosity of imagination and embark on a Grand Deal, if we can unleash our abundance of determination and implement The National Aspiration Act, what will we have wrought?

To answer these questions, we must first appreciate how we will be affected by the new future we will create. We have to understand the changes a Second American Founding and Unconditional Actualization For All will forge in and for each of us. While “actualization” is generally considered to be an individual realization, its framing as a national objective transforms it into a democratic experience. To free ourselves from the horrific devastation inherent in the Titanicity, we must establish an end state unlike any other previously achieved. We must redefine America’s opportunity as fulfillment for everyone.

Maslow expressed his view of actualization in a simple phrase: “What a man

can be, he must be.”¹⁶⁵ It is the fullest expression of a person’s innate talent – their capacity for excellence. That expression enables a person to touch the epitome of their being, to reach the ultimate essence of themselves, to go beyond simply being who they are and instead become the best of which they are capable. Individual actualization comes both from understanding what we love to do and do best and from experiencing that talent in a worthwhile endeavor that advances the world around us. That is how humans achieve their nobility. It is their singular defining attribute, one that ranks them above every other species on the planet and every machine – no matter how sophisticated its programming.

Maslow did later hypothesize that there was a tier of human need above self-actualization, a tier he called transcendence. In this tier, a person builds on what motivates and benefits him or herself to dedicate themselves to serving others. As Maslow described it, “Transcendence refers to the very highest and most inclusive or holistic levels of human consciousness, behaving and relating, as ends rather than means, to oneself, to significant others, to human beings in general, to other species, to nature, and to the cosmos.”¹⁶⁶

While he saw that universal relationship as a separate and superior tier in his hierarchy, however, it can also be conceptualized as the vehicle for self-actualization. In other words, one can achieve actualization for themselves by applying the ultimate expression of themselves – their talent – to help others satisfy their basic and psychological needs so that they too are able to reach for their own actualization. It is fundamentally the sharing of their capacity for excellence with the world around them in order to make that world a better, more fulfilling place for their fellow humans. That doesn’t obviate Maslow’s view of transcendence as a metaphysical need, but instead conceives of it as a binary state, achievable both in the selfless act of service to others as well as through prayer, meditation and other acts of spirituality.

As a consequence, when Unconditional Actualization For All is effectively achieved, the United States will enter a new and heretofore unimaginable era best

described as the **Neonaiissance** (neo nay sance). This post-industrial, post-information, post-Titanicity period is the possibility in the nation's future. It is an age when humankind in general and Americans in particular will be empowered to become what they can be, what they have the right to be, what they must commit themselves to be, if they are to experience the finest expression of themselves.

The Neonaiissance is, at one and the same time, both derivative of and a complete break from what is widely acknowledged to be one of humankind's greatest periods of philosophical, artistic and scientific achievement – the Renaissance. Indeed, that era's three-century long duration, from approximately 1300 to 1600, is celebrated as a particularly important shift in human history. It marked the end of the Middle Ages and the beginning of what we now call the Modern Age. The Neonaiissance will also be a transposition in human history, but it will take us in a very different direction. It will mark the end of the Modern Age and the beginning of what we will eventually call the **Age of Self-Ennoblement** – a time when humankind commits itself to being at its best in caring for all of its members and for their home planet.

A more detailed comparison of the two eras brings these differences into sharp focus. While there is ongoing academic debate regarding the causes and central dynamics of the Renaissance, most agree that it can be accurately described as follows:

- The period looked backwards for inspiration. It was shaped by the “rebirth” of classical Greek and Latin philosophy, literature and culture, beginning in Italy and then sweeping across the whole of western Europe.
- It produced a deluge of societal, philosophical, political and scientific advances that reset the human experience, including most significantly, the rediscovery and then extension of humanism, a system of thought that emphasizes realism and reason, observation and evidence.¹⁶⁷
- The goal of humanists was to leverage research, data, analysis and logic “to create a universal man whose person combined intellectual and physical ex-

cellence and who was capable of functioning honorably in virtually any situation.”¹⁶⁸

- While the period saw the patronage of scholar-princes produce some of humankind’s greatest artistic accomplishments, the most important societal development was the replacement of feudal relationships with commercial ones, enabling broad segments of the population to achieve occupational independence and the ability to pursue their own fortunes and dreams through paid employment.

The Neonaissance, in contrast, will have an even more consequential impact on human society, economics and culture. It will achieve that influence by creating alternative visions of the world of work and the world in which we live.

- The period will also look to the past for its inspiration, but it will be a “new birth” of human endeavor and exploration. It will not rediscover and then build on ancient ideas and values, but instead continue the perfection of America’s founding vision by enriching it with a more inclusive and holistic conceptualization of the human experience, one that is centered on a reverence for both human talent and aspirations and the beauty and bounty of planet Earth. This new-found allegiance will open in the United States and then sweep across the rest of the developed world from there.
- The Neonaissance will produce not one, but two outcomes:
 - o A vast array of societal, philosophical, political and scientific developments that reset this period in history, expanding its focus on humanism and advances derived from rationalism and reasoning to include an equal commitment to the perfection of each individual’s unique being through self-development and the expression of that being through purposeful work rather than paid employment.

- o A vast array of altered individual behaviors, societal expectations and governmental actions, all designed to advance the remediation of the harm already done to the land, sea and air of the planet; to acknowledge and meet humankind's responsibility for nurturing the Earth's health for future generations; and to ensure our exploration of the cosmos leaves it without human alteration or pollution.
- The goal of this movement will be to leverage all learning and existential inquiry to create a "noble person." Each individual will be encouraged, empowered and enabled both:
 - o To identify their unique capacity for excellence – their innate talent – and to develop that capacity to its fullest extent so that they can then employ it in service to others, thereby achieving actualization and its outcome, personal fulfillment.
 - o To acknowledge and cease their personal actions that pollute the planet, interfere with its ecosystem or contribute to its warming and to adopt new habits that will protect and preserve the biosphere and serve as a model for our kids and grandkids.

By performing those deeds, each and every American will be able to participate in and thus personify the Age of Self-Ennoblement.

- While figures of great nobility will emerge during this period and their individual acts and accomplishments will fill the pages of post-22nd century history books, the most important cultural developments will be two that liberate humans to reshape the content of their days and the distinction of their legacy:
 - o Technology's elimination of nonvoluntary work, enabling all Americans to discover and reach for the epitome of their being through service to others.

- o America's commitment to reverse global warming, inspiring and mobilizing its citizens to care for the Earth's health through public service.

This epic new era also represents the realization of four possibilities. A possibility, of course, is only something that may happen. It is not inevitable or certain. So, turning not one but four possibilities into reality – moving them from what's conceivable to what actually occurs – seems almost ... well, almost impossible. It's asking us to be too hopeful, too willing to suspend what we know about the obstacles and disappointments life puts in our way. And yet, we also know from experience that there is no limit to what can happen. Who would have believed in March of 2020, for example, that scientists would create at least three globally-accepted vaccines to protect humans from the novel coronavirus and do so within the space of just nine months? As humans have proven time-and-time again, we are a species that routinely transforms what may happen into what actually does.

The four possibilities that will be realized in establishing the Neonaissance are:

- The possibility that “everyday” Americans – people who have never thought of themselves as extraordinary – will discover, develop and use their talent – their capacity for excellence – to improve the world around them.
- The possibility that we can overcome the divisions and self-interests, the fears and biases that pull us apart and instead find common cause and mutual respect in confronting and overcoming the Titanicity.
- The possibility that we can establish a new democracy that will, for the first time in human history, offer Unconditional Actualization For All through voluntary service to humankind and the planet it calls home.
- The possibility that today's Boomers, GenXs, Millennials and GenZs can be-

come the next of America's greatest generations by leading the world into the Age of Self-Ennoblement.

It is now time to launch the campaign that will transform these possibilities into realities. Unquestionably, it will be a daunting and humbling task, for it will require that we take a stand not to defend what we have, but to create what we could be. Not to act in our common defense, but to act on behalf of our common humanity. As it was with our beginning two hundred and fifty years ago, preparing America for the Neonaissance – launching the Second American Founding – will be a revolution of the human spirit. It challenges us to affirm our bond, our living interest in one another.

A Universal Living Interest

The campaign to launch the Neonaissance – to turn its four possibilities into realities – will be executed through the introduction of a Universal Living Interest. This strategy is both a commitment and a plan of action. It is a statement of values and the means by which those values are implemented. It commits the country and, no less important, its citizens to ensuring that Life, Liberty and the pursuit of Happiness are available to all Americans on a planet that is healthy and well cared for. And, it is a plan of action that will build and then continually reinforce two new pillars of American life:

A Universal Human Initiative comprised of an income replacement program coupled with a healthcare delivery system, which together provide a better-than-basic standard of living for every American citizen; and

A Universal Earth Initiative encompassing a range of remediation and preservation activities that promote a healthy planet with clean air, water and land available to all and sufficient to provide for their basic needs.

This bimodal **Universal Living Interest** will shape the character and content of a novel era for Americans in four important ways.

First, it recognizes the inherent value of a person's quest to discover and nur-

ture their talent – their capacity for excellence – and to apply that gift in work that improves the lives of others and our planet. It is in our interest to pursue that endeavor because it fulfills us – it makes us Happy in a way no other activity can – and it raises us to the pinnacle of being human. It builds on our historic legacy of Liberty to open each and all of us to the dignity of living purposefully. This self-initiated, self-directed journey establishes the singular, unreplicable attribute of our species – our motivation to be the very best of ourselves – and thereby provides a pathway to our nobility. Unlike in Europe, however, American nobility won't be reserved for some sovereign or exalted group, but will instead be available to and accessible by all. It is a democratic interest in living human Life to its most exalted.

Second, a Universal Living Interest recognizes that each individual's quest to use their talent for self-actualization is also in the interest of those benefiting from that quest. That support, which Americans will offer both to their fellow citizens and to those living in other countries around the world, will enable each and every recipient to meet their basic and psychological needs and thereby position them, as well, to reach for their own actualization. Some of these acts will be performed individually and others will harness the scale and dynamism of groups, but collectively, they will infuse the culture of the era with a regard for and commitment to voluntary work. It will be a refocusing of labor that empowers more and more people to be the best they can be, to achieve their own nobility by serving others. The outcomes these citizen-volunteers achieve will validate the unique goodness of a noble democracy and eventually, inevitably consign all other forms of government to the waste bin of history.

Third, a Universal Living Interest recognizes our responsibility to invest in the betterment of America. Shaping one's work to promote Unconditional Actualization For All embodies the exhortation of President John F. Kennedy to "Ask not what your country can do for you – ask what you can do for your country." It acknowledges that each person has something to contribute and that each person has a role to play in our journey as a nation. We have a common interest in looking out for

one another, in advancing the common good. When disaster strikes – whether it's a tornado or wild fire, a hurricane or flood, Americans instinctively and without reservation step up to help those affected. Americans, by nature, are built to lend a hand to others. Historically, however, that native generosity has been constrained by the demands of employment and by our own day-to-day obligations. The Neonaissance removes those handcuffs so that every American is free to devote something of themselves – to share one of Life's most precious gifts, their talent – for the betterment of all. That commitment signifies their determination to take a stake in the present and the future of their country.

And fourth, the Universal Life Interest recognizes the accumulating benefit of a collective dedication to self-actualization. That dedication of We the People represents the continuous reinvestment of talent, enabling the country to realize a compounding rate of progress in its transformation from aspiration to a true noble democracy. Each individual person's reach for the best of themselves multiplies the national experience of Unconditional Actualization For All by a factor of 1.1. The good one person does and experiences isn't limited to their life, but also touches the life of another person, positioning them, in turn, to touch someone else in a way that benefits them. It is a mathematical progression that transforms possibility into a pandemic of progress.

No doubt, in today's cynical environment with its deep divisions and unapologetic prejudices, such a vision seems achingly naïve and sentimental. It smacks of fairy tales, not realistic probabilities. And for some, sadly, that may be true. There will be Americans who opt not to find their talent or to use it in service to others. There will also be Americans who commit criminal acts and poison our social discourse with hatred and lies. And, there will be those who believe it's not their job to care for the planet or for those less fortunate than they. The Neonaissance does not represent the perfection of humans, but rather the work that will be continuously done to perfect the sum of humankind. It will designate a time when many, hopefully even most Americans will come together in a majority movement – an American

assembly of men and women from every walk of life – that celebrates the goodness of the nation they were given and vows to leave an even better nation to those who follow after them.

The Universal Human Initiative

The reality of day-to-day life over the next one hundred years will present a colossal, seemingly insurmountable barrier to the expression of talent and the pursuit of self-actualization. As the opportunity for paid employment disappears, more and more Americans will lose both their financial and their physical and psychological health support structures. The disruption has already begun, but for now is sporadic, affecting only those in certain occupations, industries and locations. Going forward, however, each passing year will bring the introduction of more and more machines into more and more segments of the economy, until finally circa 2040, a point of no return will be reached, and the pace of displacement will unstoppably accelerate. Americans in almost every profession, craft and trade and in every city, town and village will increasingly find themselves out of work and with absolutely no prospect for reemployment.

At that juncture, traditional federal intervention initiatives – one-time distributions of cash such as that which occurred during the Covid-19 pandemic and the venerable unemployment insurance program – will not only be inadequate but irrelevant. They were designed for short-term economic dislocations, and they assumed a full and robust recovery to a “normal” economy and lifestyle. The Titanicity will

not follow that pattern. It will fundamentally reset the way business is conducted and, as a consequence, lead to the permanent loss of paid employment and employer-subsidized healthcare for almost all Americans. Addressing a dislocation of that magnitude will require federal programs of much greater scope and longer duration. The **Universal Human Initiative (UHI)** will have that scale and be a permanent fixture of America going forward. It will enable all American citizens, for the first time in history, to work in a way that supports their individual and collective actualization. And, in doing so, it will create a new culture of democratic nobility in America that transforms the country's founding aspiration into a living reality.

The UHI builds on an idea that has recently gained considerable momentum among many progressive and even some conservative social policy pundits: the universal basic income. It provides “a government guarantee that each citizen receives a minimum income” – a monthly payment that is not connected to or based on their employment status.¹⁶⁹ Also known as a “citizen's income,” it recognizes that the state has an obligation to promote the wellbeing of its people by helping them meet their basic needs. The concept has roots as far back as the 16th century, but gained much more attention in the 20th century, when the idea of a state-supported income was conflated with welfare and a social safety net. That connection has cast the basic income as a supplemental payment sufficient to keep people fed and housed, but not so generous as to discourage them from looking for a job and contributing to society. It provided the bare minimum necessary for them to get by and thus incited them to seek paid employment and a more comfortable standard of living.¹⁷⁰

In the 21st century, the concept has been recast from a social to an occupational safety net. Instead of supporting those needing the care of the state, it is now seen as a way for the state to manage the impact of destructive creation. In essence, today's universal basic income can be characterized as an AI-driven citizens' assistance program. It's seen as a way for the state to help those who have lost their jobs to intelligent machines.

This view was popularized by Andrew Yang, a lawyer and entrepreneur, who ran unsuccessfully for the Democratic presidential nomination from 2017 to 2020. His campaign was based on a simple premise: the American people will need what he called a Freedom Dividend – a payment of \$1,000 per month for every person over the age of 18 – in order for them to contend with the economic disruption caused by technological change.¹⁷¹ As he saw it, the universal basic income was still a supplemental payment – \$12,000 per year may help keep someone from starving, but it does not move them out of poverty – though its rationale had changed. It was a necessary response to the unfettered proliferation of SCMs.

While Yang's unsuccessful campaign did much to bring a universal basic income to the public's attention, he wasn't the first to raise the idea. In fact, he was preceded by a long line of Americans who had proposed or at least mused about the installation of a government-provided income for all citizens. These ranged from the Colonial era pamphleteer Thomas Paine to cultural icons and change leaders such as Martin Luther King, Jr.; from celebrated economists such as Milton Friedman to tech evangelists like Mark Zuckerman and Elon Musk; and from Native American tribes such as the Eastern Band of Cherokee to current political figures including the Speaker of the House of Representatives Nancy Pelosi and even former President Barack Obama.¹⁷²

Not surprisingly, the idea has also had more than a few critics. Some argue that the program will be too expensive for a government that is already deeply in debt. Others see it as an economic slippery slope, one that will eliminate Americans' will to work. Both have some basis in fact. Even as a supplemental payment, it's been estimated that such a program would carry a price tag of \$290 billion or more. And although debunked by some, there's at least anecdotal evidence that the federal government's supplemental unemployment payments during the Covid-19 pandemic kept a measurable number of Americans out of the job market.

A more fundamental concern, however, is what a universal basic income

doesn't do. As it's conceived by today's proponents, this payment essentially sets in concrete the current class structure in America. A supplemental income of \$1,000 a month doesn't affect or change in any way the tiny class of super rich Americans at the top of the country's society, the large and expanding class of Americans who live paycheck-to-paycheck at the bottom of the country's social scale or the shrinking middle class of Americans who are uncertain where they stack up as they face a declining standard of living. It may reduce hunger and homelessness for some, but for the nation as a whole, it doesn't eliminate or even reduce income inequality in the country.¹⁷³

Moreover, the arguments, both pro and con, about the universal basic income are shaped by two flawed assumptions. These assumptions fail to recognize the stark implications of the Technological Singularity as a turning of the page in American history. They are shaped by the belief that this moment is not the opening chapter in a novel reimagination of America, but just another retelling of its longstanding story of working and doing business. And, that view fundamentally misreads reality. **The past is not prologue for the rise of intelligent machines, but epilogue for the paid employment of humans.** The Technological Singularity thrusts humankind into an existential redirection so profoundly unfamiliar, it makes the universal basic income debate, itself, irrelevant.

The first of these flawed assumptions involves the job market. Conceiving of the universal basic income as a supplemental payment assumes that there are jobs to be had, so a sum low enough to encourage people to seek paid employment makes good economic sense. In essence, it is based on the belief that the structure of employment will be essentially unchanged by the introduction of SCMs. This faith in the continuing vitality of the job market is based on the view that the introduction of intelligent machines in the workplace is an event similar to previous introductions of labor-saving technology. It is, according to this view, simply creative destruction redux. The wholesale application of artificial intelligence will replace old jobs with new ones – forcing people, as a result, to shift their occupation or industry or place

of work to get hired, but still providing them with access to paid employment.

It's a reassuring assumption, but once we pass the Technology Singularity, it will no longer be a tenable position. Instead, the nation will experience the introduction of generation-after-generation of ever more intelligent machines coopting the human workforce. That displacement will continue as each generation of technology gets shorter and shorter, until eventually, employers have nothing left for working men and women to do. A permanent state of near universal unemployment will emerge, and as a result, Americans will have no income to supplement. Only a replacement income – a Universal Human Initiative – will meet their needs.

Such an income is unlike any previous form of government-subsidized financial assistance. It does not indenture Americans into living paycheck-to-paycheck without the means to purchase more than the basic necessities of life. It does not sustain people working in poverty, unable to afford a vacation or to pay for health-care in an emergency. And, it is not a welfare payment that provides temporary assistance for food but few other necessities. A Universal Human Initiative will provide each and every American with what is today known as a middle class income. At least in part, it realizes the Grand Deal's commitment to address the country's longstanding social injustices by eliminating the economic disadvantage perpetuated by race and national origin. Instead of a financial assistance program that often stigmatizes its recipients, it is an initiative that promotes their common dignity and access to their unalienable rights.

The second flawed assumption regarding a universal basic income has to do with its financial foundation. The traditional analyses of where the money would come from to pay for a universal income (even one treated as supplemental) assume that the primary source of capital for the initiative will be its recipients. According to this view, only a tax borne by the country's citizens – typically described as a value-added or consumption tax – could provide the requisite funding. However, because the largest cohort of our population – the country's middle class – is not

only shrinking but enduring stagnant wage growth, such a tax will almost certainly be insufficient to pay the bill. And, looking to the other cohorts of the population also doesn't provide a solution. They too are inadequate sources of the necessary funds. Taxing the growing lower class isn't a viable approach because their consumer activity is constrained, and taxing the upper class leverages the spending of too few people.

Equally as problematic is the fact that the shortfall will become even more pronounced once we pass the Technological Singularity. At that point, businesses will accelerate their shift from human to machine productivity as the basis for their day-to-day operations. In global enterprises as well as Main Street shops, in cubicle farms as well as on the production line, intelligent machines will perform all white-, blue- and no-collar work, leaving humans without the means to continue their consumption. In effect, there will be little or no spending to tax.

The only alternative, therefore, is to fund the replacement income with a tax on the machines that have replaced those human workers. While no organization "wants" to see a new tax imposed on it, this levy on byte-collar workers has an important advantage. It will cost employers less than the wages, benefits and taxes they now pay for their human workers. As a consequence, taxing machines rather than humans will actually improve their market competitiveness. It also creates a durable win-win situation. Businesses have more opportunity to grow because they retain more of their financial resources which they can then use for investment. And even as that is happening, the level of financial support provided to individual Americans is upgraded from a basic to an actualization-enabling or **noble income**.

The Internal Revenue Service collects around \$3 trillion dollars in taxes each year, and employers currently pay only a third of that through the payroll tax. Individual income tax payments account for half.¹⁷⁴ A tax on intelligent machines – those that use any form of artificial intelligence technology, including but not limited to machine learning, deep learning, neural networks and natural language processing

– would accomplish two important objectives. First, it would appropriately shift the tax burden from those who are harmed by the introduction of that technology to those that benefit from it. Second, given the proliferation of that technology into every human occupation and the stagnant wages of human workers in those occupations over the past two decades, it would, if properly structured, provide more funds than the \$1.5 trillion that is now collected from individual tax payers. Those funds together with the funds generated by changes in the tax code that would require the wealthiest among us to pay a more just share of the country’s operating expenses and by companies leveraging the improved productivity available from byte-collar workers would provide the foundation for the UHI.

No less a business superstar than Bill Gates has come out in support of such a program although not surprisingly, he restricted it to a “robot tax.” According to at least one tax information website, he believes “... it’s important to properly manage the displacement of humans by robots.”¹⁷⁷ That support is a red herring, of course. Yes, robots will terminate the jobs of human production and warehouse workers and those in some other fields. But, human job termination will also be caused by AI-based office administration systems, AI-based decision support systems, AI-based medical diagnostic systems, AI-based vehicle driving systems, AI-based customer service systems, AI-based shopping assistance systems, AI-based news selection and reporting systems, AI-based legal research systems and a host of other AI-based applications. Therefore, the businesses that are employing those applications should also pay a tax on doing so. Their “consumption” of AI is no less harmful to human employment than the use of robots.

Moreover, taxing the organizations that are using such SCMs to replace their human workforce has multiple societal benefits. It is not only a feasible way to build the financial base for the Universal Human Initiative, it also resets the moral compass with which the business sector embraces the technology. It acknowledges and compensates for a harm that is done to innocent men and women. Most importantly, however, it provides Americans with what they truly deserve. That’s not a supple-

mental income payment, but a noble income, one that affirms their equal access to a middle class standard of living and the opportunity to achieve self-actualization.

Indeed, the installation of a financially solvent UHI will reset America's sense of itself as "the land of opportunity." After its introduction, Americans will simply not understand the need for employment to pay for basic necessities or to cover the cost of a visit to the doctor. Their history books will describe a time in the 20th and 21st centuries when formerly successful workers had to live in their cars after being laid off or were thrown into bankruptcy after a prolonged illness. They will read about working parents who could not afford school supplies or healthy meals for their kids and see pictures of toddlers playing in an overcrowded backyard doubling as a day care center. They'll be taught all about what their parents and grandparents experienced, but to them it will be a foreign and incomprehensible America – one that no longer exists. They will all be members of the Omni Class.

The Omni Class

An economy based on paid employment inevitably creates tiers of wealth, tiers we have historically described as the lower, middle and upper classes. The Technological Singularity will eliminate the opportunity for paid employment, and the Universal Human Initiative will replace it with a noble income – an income that provides all Americans with a middle class standard of living. All of their living requirements will be met through this guaranteed access to a new demographic cohort, one that is so broadly representative of the population, it will be called the **Omni Class**.

Every American except those in a shrinking class of the ultra-rich, will enjoy the standard of living consistent with this all-encompassing class. They will have the same income and the same medical, dental and psychological care as everyone else, and they will have those resources for life. Industrial and Information Age divisions – pay-based economic classes – will no longer be relevant, as more than 99 percent of the population will be designated by a single classification that eliminates any distinction based on an employer's determination of their value. Similarly, they won't be consigned to some latter-day proletariat tyrannized by Party overlords or forced to join some faux worker paradise that rejects individual achievement. They won't be members of a communist or a socialist state. Instead, they will live as free and independent citizens of a democracy leveraging technology to enable, empower and encourage voluntary work.

Americans will enjoy the first noble democracy in history. Machines will perform all of the labor the country requires for its economy to flourish, and that prosperity will provide an ample standard of living for every person. In 2015, the Pew Research Center found that middle class Americans had become a minority, accounting for just 49.9 percent of the country's citizens. Most of the population fell into the lower class (29 percent) or the upper class (21.1 percent).¹⁷⁶ After the enactment of a UHI, that entire demographic framework will be eliminated.

The vast majority of Americans will live a stable Omni Class life – one that brings dignity and wellbeing to all. The so-called upper class will comprise a tiny fraction of the population, and the lower class – often characterized as the working poor – will cease to exist altogether. Americans' income will not be unlimited, of course, but its very universality will ensure that each and every “jobless citizen” will have an equal opportunity for self-exploration and expression. They will even have the opportunity to add to their income in socially acceptable ways, although beyond a certain level, they will become ineligible for the UHI.

Despite its dramatic redesign of the country's demographic structure, however, a universal noble income will not change the character of America. Its much revered rugged individualism will not disappear despite its citizens almost total membership in the Omni Class. They will be neither clones of one another nor faceless denizens of some vast collective. In fact, the one attribute they will share is their access to the first true freedom of expression on the planet. Every individual will have the financial independence to “work” at something that elevates their life to a fuller and richer experience and thereby ennobles them. Most importantly, Americans will be free to participate in whatever pursuit – social, civic, commercial, metaphysical, cultural or athletic – they believe will empower them to achieve a more vibrant and wholesome expression of their best selves. They will, in effect, be able to realize and enjoy Unconditional Actualization For All.

Sadly, there will be some who fritter away that opportunity. They will use

the freedom their UHI provides to spend their days playing video games and binge-watching television. They will suppress their instinctive drive to meet their psychological needs and achieve actualization and, instead, immerse themselves in mind-numbing activities that leave them disconnected from others and from themselves. They will have everything they need in life except purpose, fulfillment and the dignity of meaningful work.

However, these self-minimized people will be a very small minority of the population, as most people will devote themselves to a new kind of employment. Instead of working for someone else, they will work on themselves. Instead of being employed to advance some company, they will employ themselves to help advance others. They will devote their work to a career in self-actualization and the achievement of fulfillment. **The Neonaissance will be the first period in history where every man and woman can guide their lives from wherever they began to wherever they can be the epitome of themselves.** The result will be an outpouring of artistic, scientific, philosophical and civic advances that far outstrip even those of the Renaissance. These advances will be powered by Americans engagement in three kinds of work:

Talent Appreciation

Each person will be taught to believe and appreciate that they were born with a unique capacity for excellence. That capacity is not defined by company job structures or the government's occupational classifications, nor is it limited to those who excel at athletics and entertainment or are selected for "gifted and talented" programs. Talent is an attribute as fundamental to being human as our opposable thumb. Every person has this capacity to excel and to experience the intense satisfaction that comes from expressing it.

Sadly, however, most Americans have been taught exactly the opposite; they've been led to believe that talent is reserved for a very few special people. The

UHI will free them from that dehumanizing trope by providing the financial foundation for a new kind of work that immerses them in discovering their talent for the first time or confirming what they have always known or suspected it to be. Americans in the Neonaissance will employ themselves in a journey of self-exploration that will unfold through programs of education, meditation and self-assessment. For the very first time in our history, they will be entitled to uncover and affirm, experience and revel in the talent with which they are endowed.

Talent Development

Humans not only possess the capacity for excellence, they are driven to expand its dimensions, to acquire an ever-greater ability to perform at their peak. As a human attribute, talent is never complete; its potential is never fully realized. It can always grow, mature and be refined. It is a summit without end, a mystery of transcendent distinction. Indeed, talent can only be fully appreciated if it is continuously developed because that evolution reveals more and more about how good a person's best can actually be.

Americans have been locked into a post-secondary educational system that, with precious few exceptions, educated them for paid employment. They were taught that their only option was to shape themselves into an employee in some company's job structure. Whether they attended a trade school or college, they were given the skills and knowledge they would need to work for others, rather than the insights and wisdom that would enable them to work on themselves. The UHI will end that pedagogical malformation of people. It will open a novel era of development supported by universal access to high caliber instruction that is designed to facilitate each person's lifelong effort to extend their capacity for excellence.

Talent Application

A person achieves actualization by applying their ever-evolving talent in an endeavor they consider to be meaningful and worthwhile. Historically, that application has been known as one's "calling." It is a form of work which, while frequently acknowledged in certain fields – healthcare and teaching, for example – has not been recognized in most of the occupations and jobs for which the vast majority of people are paid. To put it bluntly, most Americans don't work at their calling and, as a consequence, are unable to achieve actualization. They are both the result of a democracy that is not yet noble and the proof of its potential, its possibility.

There are at least three reasons for this dehumanizing situation: (1) Americans haven't been afforded the opportunity to determine their talent; (2) they know their talent but haven't sufficiently developed it to be able to secure paid employment; or (3) the application of their talent isn't sufficiently valued in the workplace to generate paid employment opportunities. The UHI removes all three of these barriers; people will have the financial foundation to appreciate and develop their talent and to prepare themselves for its application in work they consider meaningful and rewarding. While that will be a personal determination, it will in most instances involve service through governmental or non-governmental organizations or cultural or educational institutions. Their service will take many different forms, but always with the goal of improving the lives of their fellow citizens and others around the world or to improve the wellbeing of our country's land, air and waterways or the health of the planet we share with others. What was once considered volunteer work performed before or after one's career in the paid employment workplace will be transformed into the focus of Americans' work performed throughout their lives. It will be self-employment in a calling of service to humankind.

The Neonaissance will be a new birth of human endeavor – a novel definition of human talent and work – with an unprecedented outcome. It will produce a grand

flourishing of human excellence and respect for individual rights and responsibilities that reconceives the human experience. It will enable, encourage and empower the American people to establish and fully participate in the first noble democracy on our planet.

The Universal Earth Initiative

The word “humankind” is an oxymoron. At least, that’s the case when it’s used in conjunction with our home planet. There’s nothing kind or even respectful about the way our species has been treating the Earth. And, we’ve been doing so since we learned to walk upright. Until now, however, that misconduct hasn’t had much of an impact. What we did and how we did it were insufficient to inflict either catastrophic or lasting harm on the planet. But, that’s no longer true. Humans are now fouling their own home – dirtying its air, land and water – and the abuse is so extensive and so frequent, the planet is unable to refresh itself. The implication of this new reality is irrefutable: humans are no longer immune to the consequences of their own behavior. A planet that is damaged beyond repair cannot, will not support the continued prosperity of human beings.

A large and growing segment of the American population now recognizes this threat and is looking to their elected officials to defuse it. According to a CBS News poll taken in 2019, almost two-thirds of Americans (64 percent) think climate change is a serious problem. A quarter describe it as a crisis. And, more than half (56 percent) believe something should be done about it right away.¹⁷⁷ They suffer through the droughts and forest fires, the tornadoes and hurricanes inflicted on them by climate change, and then they suffer again as they deal with the devastation left behind in their hometowns and neighborhoods. It’s a glowering presence where they

live and work, yet most think only a national response can be effective. They want Washington, D.C. to take the lead on fixing the problem. According to a poll taken by the Pew Research Center in 2020, almost two-thirds of Americans see dealing with climate change as the federal government's job, and they want it to move more aggressively than it has to date to develop a solution.¹⁷⁸

While there have been environmental programs legislated by the federal government over the past several decades, the first initiative designed specifically to address the impact of climate change was the so-called “green stimulus.” It was a subsection of the \$800 billion American Recovery and Reinvestment Act introduced by the Obama Administration to deal with the Great Recession of 2007-2009. That legislation, however, provided just \$90 billion to launch programs for clean electricity, renewable fuels, advanced batteries, energy efficiency, and a smarter grid, among a grab bag of other initiatives. It was a first step in the right direction, to be sure, but it was wholly inadequate to reduce global warming and its pernicious effects on the climate in any substantive way.

Moreover, buried as it was within a much larger package of economic programs, the stimulus was all but invisible as a government project. It failed to attract any significant attention among the public or, more importantly, to rally Americans to the cause. As *Politico Magazine* noted, “The main goal of the stimulus [Act] was to save the economy from a depression in the short term, which is why its push to move the economy toward clean energy in the long term was largely overlooked.”¹⁷⁹ As far as the climate crisis was concerned, it was a piecemeal response when a comprehensive campaign was required. It was action without a vision. Even worse, it was – in relative terms at least – so modest it clouded rather than clarified the perceived severity of the problem.

Despite these shortcomings, however, the green stimulus did have a noteworthy impact. It didn't move the needle on correcting the human behaviors causing climate change, but it did legitimize the need for the nation to act. It provided the

agency and the rationale for the development and introduction of a much more aggressive initiative ten years later.

Known as the Green New Deal, this legislative proposal was introduced by Senator Edward Markey and Representative Alexandria Ocasio-Cortez as a Congressional resolution on February 17, 2019. The bill called for “a 10-year national mobilization” to implement a nationwide reliance on 100 percent renewable and clean energy sources as well as significant revisions to the policies and practices in numerous segments of the economy. These included infrastructure and power grid improvements, changes to building codes and the retrofitting of existing structures, upgrades to the country’s transportation systems and manufacturing plants, and the redesign of its farms and ranches.¹⁸⁰

In addition, the resolution also acknowledged that the country was quickly approaching the point of no return in global warming and therefore had to take immediate and dramatic corrective action. Although it did not specifically cite the Climatic Singularity in 2040, it established the goals of transitioning to 100 percent clean, renewable energy and significantly reducing carbon emissions by 2035. No less important, the Green New Deal mimicked its predecessor and namesake by calling on Americans to do their part in addressing a national crisis that was threatening their way of life. The government could provide the framework and the resources, its proponents argued, but the American people would have to do the work, if the initiative was going to be successful.

It was a bold proposal, but Markey and Ocasio-Cortez were playing catch-up ball. A similar Green New Deal was devised by a task force of the same name in 2006 and has been an integral part of the Green Party platform since then. As with the Obama proposal, this earlier initiative didn’t make much of an impression on the American public, but it did respond to their growing concern about climate change. A poll taken in December, 2018 found that the vast majority of registered voters (82 percent) knew little about a Green New Deal, but when apprised of its general con-

cepts, were overwhelmingly in favor of them. An astonishing 81 percent said they either “strongly support” or “somewhat support” the goals of such a program and the steps it would require the nation to take.¹⁸¹

Markey and Ocasio-Cortez retained many of the provisions of that original Green New Deal in their legislation. While it was characterized as an environmental plan, it also addressed issues far beyond the scope of pollution and global warming. As described on the Green Party website:

“It seeks to solve the climate crisis by combining quick action to get to net-zero greenhouse gas emissions and 100% renewable energy by 2030 along with an “Economic Bill of Rights” – the right to single-payer healthcare, a guaranteed job at a living wage, affordable housing and free college education.”¹⁸²

In effect, this Green New Deal 2.0 has two goals: to correct the human behaviors causing global warming and to introduce programs that would advance the economic status of the working poor and other disadvantaged populations. It melds environmental and social justice initiatives into a single national improvement project. The authors may have named it the Green New Deal, but it was actually a Red, White, Blue & Green New Deal designed to rectify the conditions of those the nation had left behind as well as the planet on which they lived.

That combination, while well intentioned, proved to be its fatal flaw. It was so odd and ill-fitting, it opened the resolution to criticism by both conservative and liberal politicians and left the public uncertain about what they were being asked to do. As *The New York Times* put it when the resolution was first proposed:

“If you’ve heard a lot recently about the Green New Deal but still aren’t quite sure what it is, you are not alone. After all, it has been trumpeted by its supporters as the way to avoid planetary destruction, and vilified by opponents as a socialist plot to take away your ice cream. So it’s bound to be somewhat

confusing.”¹⁸³

This ill-fitting combination wasn't the only problem with the resolution. There were also arguments against trying to do two important tasks at once. George Hickenlooper, the former Governor of Colorado, published his critique in an Op-Ed piece in *The Washington Post*. As it was later characterized by NBC News, “He likes the idea of a Green New Deal, just not this one. He pointed to its inclusion of issues like a federal jobs guarantee.”¹⁸⁴ Other critics expressed similar concerns. Yes, they acknowledged, the nation needs to address climate change, but not in conjunction with some other initiative that is totally unrelated. Each will detract from the other to the detriment of both. Even the green parts of the Green New Deal generated opposition, not only among a huge majority of Republicans, but also from Democrat leaders as well. Some were concerned about the social impact of the remediation efforts while others were skeptical of its lofty ambition. House Speaker Nancy Pelosi, for example, pointedly slammed the proposal as the “green dream or whatever.”¹⁸⁵

Even more objections were raised about the potential cost of the program. Ocasio-Cortez seemed dismissive of its price tag, even claiming it actually “costs us \$0 if passed” because the Green New Deal is simply a “non-binding resolution of values.”¹⁸⁶ Others, however, took a much more pessimistic view. Forbes listed six of the ten major proposals in the resolution and tapped financial experts to assess the cost of each. As it summarized the calculation, “Just these six of AOC’s long list of aspirations would then roughly cost some \$2.5 trillion a year. Since Washington’s 2018 budget put spending at \$4.5 trillion, the Deal would effectively increase federal spending by a touch over half again.”¹⁸⁷ The center right American Action Forum pegged the cost even higher at between \$51 trillion and \$93 trillion. Of that range, however, more than 80 percent – \$42.8 trillion to \$80.6 trillion – would be the result of the resolution’s economic and jobs programs.¹⁸⁸ Said another way, if this was a Green New Deal, it was a very pale shade of green.

In contrast, the Universal Living Interest treats economic redress and climate

protection as two equally important but separate and distinct, parallel programs. They are sibling corrective steps, not a single leap forward suffering from a split personality. That difference enables the American public and government leaders to see each in its own right and to consider its specific cost in relation to its specific goals. Americans will still be asked to do two things at once, but each will have its own vision and justification.

While the Universal Human Initiative will redress the human behaviors causing the unconsidered trauma of eliminating paid employment in almost every profession, craft and trade, the **Universal Earth Initiative** (UEI) will correct the human behaviors causing global warming and climate change. As with its sibling, it will encompass a range of programs designed to create a new reality of living that serves the interests of everyone, regardless of their gender, race and age. Unlike its sibling, however, the engine of that effort will not be technology but citizen service. Certainly, technology will be employed where it can benefit the outcome, but the application of the technology and the other work that's required by the initiative will be accomplished by working men and women.

In addition, unlike with the Universal Human Initiative, there is no quid pro quo for generating the funds required to pay for the Universal Earth Initiative. The UEI's programs will impose a cost on the American government, the country's business sector, and on individual Americans. There is no avoiding that fact. We are confronting over one hundred years of planetary neglect, so the price tag will be large and take years to pay off. One way to meet that obligation would be to reallocate funds from what would undoubtedly be a significant number of existing governmental programs. That would effectively handicap or even eliminate those programs while failing to involve the American people in solving the problem. A better approach, therefore, would be to establish a new funding source that simultaneously generates sufficient funds to remediate the planet and guides humans toward more biosphere sustaining practices. It is a strategy of mutually-reinforcing goals, and one that can be implemented effectively with a tax on bad behavior.

Such taxes are understandably unpopular, at least in the beginning. They take money from people's wallet or purse and force them to do things many don't want to do. Nevertheless, the country has adopted bad behavior taxes in the past – the tax on tobacco, for example – and seen their ultimate benefit. That experience would make it palatable do so again. Although there are other options, the best prospect is a so-called carbon tax. It would both generate the necessary funds for the UEI and, over the next one hundred years, dramatically reduce the fossil fuel emissions spewed into the atmosphere. At the same time, it would also fundamentally change the behaviors of both organizations and individual Americans, moving them both toward those that will help to revive and nurture the planet.

Organizations

A carbon tax would penalize the emissions generated by corporate facilities – manufacturing plants, office parks, service centers and the like – and business-related travel conducted by a company's employees when the travel occurs in a vehicle powered by fossil fuel. In addition, to prevent the tax from encouraging companies to off-shore their facilities and thereby both eliminate jobs for American workers and pollute the air, land and water in other countries, it would also be applied to a company's operations located outside the United States.

The tax would encourage companies to invest in energy-efficient facilities and technology and to implement energy-saving practices such as the use of video and other online conferencing technology rather than physically traveling to in-person meetings. The tax wouldn't eliminate such meetings, of course, but it would likely accelerate both the move to remote working, enabling companies to get by with smaller facilities, and the use of hybrid formats – offering, for example, both in-person and video attendance at business conferences. Humans are social beings, so they will still want and need to get together. The carbon tax would simply act as a gover-

nor on that behavior.

Individuals

A carbon tax would penalize the emissions generated by the commuting, leisure and day-to-day travel of Americans in any vehicle they own that is powered by fossil fuels, including private cars, aircraft, boats and other recreational vehicles. The tax would be determined by the miles they traveled each year, with the total per vehicle category reported on each individual's annual income tax submission. In addition, the tax would be levied on the use of outdoor appliances and systems that are powered by fossil fuels, such as grills, fire pits and generators. It would require all of these devices to be metered and the consumption total also reported on each person's income tax statement.

The tax would encourage Americans to purchase more fuel-efficient products and vehicles and to change the way they use those products and get to work (switching to car pooling or public transportation, for example), go on holiday and vacation trips and even how they run errands around town. . It would move them to factor the consequences of their behavior into the decisions they make each day. They could still choose to drive a gas-guzzling vehicle, of course, but they would do so knowing they had paid a penalty for harming the planet.

This bad behavior tax would have two important benefits. First, it would generate the necessary funding for both global warming abatement and planetary remediation programs. It would remove the cost barrier to taking bold action by spreading that cost across the entire population according to each person's individual decisions. Those who choose to harm the planet least will pay the least, while those who chose to harm it the most will pay the most. Everyone, however, will pay something, and the total will be sufficient to finance the UEI.

Second, the reaction to the tax would over time spur a social media phenomenon known as “behavioral contagion.”¹⁸⁹ It describes the propensity of humans to copy what others are doing. When role models and friends, relatives and neighbors began to quit smoking cigarettes in the late 1960s, millions of Americans followed their lead. The same will happen with global warming behaviors. Once some Americans begin to shift away from cars powered by fossil fuels, for example, many of their fellow citizens will do so as well. The impulse to revive the planet and avoid the tax will be transmitted like a beneficial pandemic from one person to another, with the net effect adding both participation and momentum to the planet remediation effort.

While the tax receipts will primarily be used for such remediation programs, they should also be applied to research into clean energy alternatives. These initiatives should further the development of carbon neutral technology for all aspects of day-to-day living and the economy, from transportation and power generation to smart residential and commercial buildings and household items produced without crude oil and natural gas. The results of that research, in turn, would give businesses and individuals a way to change their behavior and adopt more planet-friendly practices that would also help them save money by minimizing or even avoiding a carbon tax payment. They would operate and live as well as or better than before and also be better off financially.

The carbon tax is not sufficient, however, to rejuvenate the planet by itself. It subsidizes the initiatives that will be required, but it does not provide the human investment required to implement them. What’s also needed, therefore, is the creation of an Earth Service Corps that mobilizes the American population and applies our individual and collective capacities for excellence to the UEI.

The Earth Service Corps

The development of an Omni Class society and the goal of Unconditional Actualization For All will provide an alternative vision for the human role in accomplishing the planet's restoration. As reported by *The New York Times*, "Supporters of the Green New Deal also believe that change can't just be a technological feat, and say it must also tackle poverty, income inequality and racial discrimination."¹⁹⁰ They see fixing the planet as a 21st century version of the New Deal's Civilian Conservation Corps. Despite their good intentions, however, their focus on a specific segment of the population – on the working poor and other disadvantaged populations – essentially turned environmental remediation into a poor person's job program. It's not. It is everyone's job. It is the responsibility of every man, woman and child in America, and the UEI will provide the mechanism by which they can play that role.

Moreover, by conceiving of the Green New Deal as an updated version of the original New Deal, Markey, Ocasio-Cortez and others understate the level of effort that will be required for remediation to succeed. In point of fact, the original New Deal did not fully revive the American economy. Its constituent programs launched that revival, to be sure, but it took the nation's mobilization for World War II to put the economy back on a solid footing. Millions of Americans went on the federal payroll as soldiers, sailors, flyers, marines and nurses. Tens of millions more went on

company payrolls to build the tanks, ships and planes they needed to defeat the enemy. And still more collected tin cans, worn out tires and anything else they could salvage to help keep the production lines humming twenty-four/seven.

The UEI acknowledges the importance of that general mobilization by introducing an **Earth Service Corps**, a program of national service in which every person, upon reaching their 18th birthday, is required to work on behalf of the country for a period of two-point-five (2.5) years. There will be no exemptions for college enrollment or medical conditions. it will be a universal responsibility, a democratic obligation that will serve to reacquaint Americans with one another, regardless of their gender, ethnicity, class, national origin or religion, and enable them to work together on a mission of truly national importance and one that will significantly affect their future in particular.

Many of their grandparents and great grandparents had performed their national service in World War II as G.I.s, an abbreviation for “government issued.” Confronted with another existential challenge a century later, these new campaigners will be known as E.I.s, indicating they are “earth inspired” during their service to the country. As it was with that earlier generation, theirs is a mission that will reshape the world. They will wage their battles against the destructive forces violating the Earth’s air, water and land, leeching away its vitality and strangling its spirit. They will confront degradation and despoilment on the beaches of the east and west coasts; along rivers flowing through the canyons and tidal basins of the southwest and gulf coast; on the farms and ranches that blanket the plains and prairies in the midwest; and in the cities big and small that populate the harbors and lakefronts, the river bends and valleys in every region of the land. They will do all of that and more to defend their planet.

This work will be their contribution to revitalizing the planet and activate their eligibility for the UHI, providing them with both an income and healthcare, and for their right to vote which will be affirmed by registering them to do so in their home state. Upon entering their national service, they will be recognized both as adults and full-fledged citizens of the country and access the rights and incur the responsibilities that come with those roles.

To meet their responsibilities, they will be assigned to contribute in one of the following UEI activities:

- Land, air and water remediation,
- Pollution control,
- Renewable energy development,
- Infrastructure rehabilitation,
- Public building stock improvements,
- Transportation systems upgrade, and
- Climate neutral agricultural and ranching practices.

The only alternative to working in one of these areas will be service in the U.S. Armed Forces for the same 2.5-year period of service. Offering this exception does not void the description of America's military as an "all volunteer" force, since those who elect to serve in uniform instead of in the Earth Service Corps will have decided to do so on their own. Moreover, protecting our homeland is every bit as important as protecting our home planet, so making this option available is both necessary and appropriate.

Regardless of the form of national service a person chooses, however, everyone will begin that service with the same initial training. This "actualization camp" will prepare them to excel at their work by helping them to identify or confirm their talent and learn how to develop and express it. Once that initial training is complete, those who elected military service will go on to traditional basic training, while the E.I.s will be introduced to the various earth service projects available to them. Working with counselors, they will then select a role that utilizes their talent and advance to training for that assignment. In addition, once they arrive at their service project, they will receive additional training and support designed both to maximize their contribution on-the-job and the fulfillment that experience provides to them.

This notion of universal public service will also extend to those Americans who come of working age during the years leading up to the installation of the UEI. These individuals will not lose their paid employment all at one time, but as they do, they too will become eligible for the UHI. In return, they will also be required to enter national service for two years, where they will be expected to share the skills and knowledge they acquired during their careers with younger E.I.s in their work unit. These veterans of the pre-automation workplace will become the frontline supervisors and mentors for the rising cohorts of men and women with no prior work experience, helping them to optimize their performance on-the-job and to think further about how they might apply their talent after their time of national service has been completed.

The impact of the work done by this army of E.I.s will depend upon the support they receive from the rest of the nation. To achieve full and lasting remediation of the Earth, they must be provided with the tools, technology and other resources they will need to accomplish their mission. Such an enormous undertaking will require the federal government to mobilize the country's citizens just as it did in World War II but on a much larger scale and for a much longer period of time. It must launch information, education and participation campaigns that engage and rally the population and keep them committed to the UEI and the accomplishment of its mission.

At the state level, these could include small grants to encourage local volunteer programs and hometown hero celebrations to spotlight the contributions of local citizens. At the national level, these campaigns could include the introduction of an Earth Savings Bond program to give individual citizens a stake in a revitalized planet and Scrap Technology Drives similar to the Scrap Metal Drives of World War II. The goal of these and every other support effort should be two-fold: to signal to E.I.s that the nation is behind them in their national service and their work on reclaiming the planet and to enable their parents and grandparents, their younger siblings and extended family, their hometown and their country to do everything possible to advance their success

Upon the successful completion of their E.I. service, each veteran will be able to return to "civilian life" and devote themselves to developing their talent further and expressing it

in a calling. While their pathway to doing so will be shortened by the work experience and maturity they gained as E.I.s, however, many will require (and deserve) additional support to be successful. To provide that assistance and to acknowledge their service, the nation should introduce and fully fund an E.I. Bill that covers the cost of a college or trade school education for all who want it. As the G.I. Bill did in helping to move millions of Americans into the middle class after World War II (and continues to do so today), this subsidy should be designed to help E.I.s acquire the expertise they will need to achieve self-actualization and participate fully in America's noble democracy. Regardless of their individual differences, it should empower all of them to take their rightful place in the Omni Class.

No less important, every American child should be raised to recognize and appreciate the work these E.I.s have done – the work those kids will do themselves when they grow up. That lesson should be the centerpiece of a daily curriculum that culminates each year on Earth Day, which the nation should set aside as a national holiday. On that day, America's communities should celebrate the improving health of the planet and commemorate the contribution of hometown E.I.s with parades and marching bands in their honor. They will have earned the recognition. They will have done their duty to preserve and protect their nation; they will have left a wondrous legacy for their kids and grandkids; they will have – each in their own way – helped to make the world safe for humans. They will have become the next generations of American heroes.

Afterword

A Call to Action

Typically, an afterword is an author's final comment on what they've presented earlier in a book. It is a sharply drawn conclusion designed to ensure the reader understands and appreciates the message that's been conveyed. This afterword, in contrast, isn't a conclusion, but **a call to action**. It doesn't mark the end of this book, but the beginning of a new form of civic engagement. It is the dawn of a reimagined persona, one tempered for both the challenge and the opportunity that now face this country. It is a rallying cry for America's new generations of citizen-activists.

Over its entire history as a nation, the United States has never faced a single event with the power to do as much damage for as long as the Titanicity. It is a cataclysm with both the elemental and manmade force to ravage and forever diminish the lives of every man, woman and child in the country. This perfect catastrophe is so immense and destructive, it can shatter our dreams, puncture our hopes, and rip apart our future. Beyond this point of no return, America will no longer be recognizable as either the land of opportunity or a shining city upon a hill.

It's understandably difficult, therefore, to wrap our arms around the event – to comprehend its enormity and ferocity. It's even more difficult to appreciate what we will have to do – the actions we must take and the courage we must demonstrate – to overcome it. Rising to meet this challenge exceeds anything we have ever done or had to contemplate. And yet, that is the mission we – the four generations of today's

Americans – must take on. There is no one else who can do it, no one else who can write this one story for all.

Our campaign will be founded on our common identity. Successfully accomplishing it, effectively defusing the Technological and Climatic Singularities, will require vision, determination, sacrifice and bravery – attributes only our species possesses. Establishing the Neonaissance and leading lives of fulfillment requires talent, inspiration, compassion and purpose – qualities only humans can display. And, launching a historic campaign to accomplish both of those feats will require an animate connection beyond even our best instincts – an unhesitant allegiance which unites us all in one extraordinary destiny.

On that foundation, we can, we must wage the campaign to protect our homeland. It's up to us – We the People who are now the nation's guardians – to do our duty. We must embark on a Grand Deal composed of a Universal Living Initiative that creates a new commitment to human excellence and biospheric health. We must remake America according to its founding aspirations and redefine our purpose, recalibrate our inspiration as Unconditional Actualization For All. We – today's Boomers and GenXs, Millennials and GenZs – must take up the mantle and launch the Age of Self-Ennoblement. We must transform America into the first noble democracy in history.

The campaign will be long and arduous, for its unapologetically outsized goal is to rediscover America. It boldly revitalizes our original promise. It unabashedly reaches for the exceptionalism that is our heritage and our defining character. It is an audacious drive to move this good union much closer to perfection. It is a **Second American Founding**, and it is our summons to greatness.

This mission is our opportunity to create our own distinguishing legacy. Not by taking up arms, but by taking on the human behaviors that abuse the wellbeing of working men and women and the planet we call home. Not by confronting hos-

tile enemies, but by facing up to what we are doing to ourselves. Not by fighting as citizen-soldiers, but by serving as citizen-activists. By being what's critically needed at this moment in our nation's history: by living up to the best of ourselves.

Though the importance of that commitment is self-evident, however, there's no denying that some Americans will choose to opt-out. They will refuse to accept the responsibility. They will decide against rising to the occasion. We are a free people, and there is no law that requires them to take on the role of a citizen-activist. It is well within their rights to turn their back on the mission, but doing so will not be without censure. They will feel it when they look into the eyes of their children and see them well with disappointment and hurt. And, they will see it in the discontinuity of spirit and purpose that separates them from their fellow citizens. They will bluster and snark, quibble and gaslight, of course, but in the end, deep inside, they will know they have abandoned their family and their country and stand on the wrong side of history's door.

For the rest of us, in contrast, becoming a citizen-activist will be the singular accomplishment of our lives. We will enlist in an assembly of everyday Americans drawn from every segment of society and every corner of the nation. We will embark on a momentous campaign to deter the destructiveness of the Titanicity. Together, we will face down forces much larger than ourselves. We will take on interests much more powerful than we are. Collectively and individually, we will push back against harmful behaviors and model those that advance human talent and the health of our planet. We will form an indomitable cadre of citizen-activists, and we will prevail. We will write one story for all that records and celebrates American greatness and human indomitability.

One Story For All

To write One Story For All – to wage and win a campaign for economic security and societal wellbeing in America after 2040 – we will first have to establish a foundation for citizen-activism suited for this time, for **this moment**. We will need a kind of activism sufficient to overcome today's challenge, not that of yesterday. For the Titanicity, not for World War II; for the Technological and Climatic Singularities, not for the Depression and Dust Bowl; for the Neonaissance, not for the status quo. To overcome our second perfect catastrophe, we will have to act before it occurs, not react after it has happened. We will have to launch a campaign from a bedrock that will enable, empower and encourage today's and tomorrow's citizens-activists.

Such a foundation must have two anchor points:

A binocular perspective that enables individuals to see the challenges of life in both the present and the future.

and

A community that supports both those who are already serving as citizen-activists and those who aspire to do so.

The Perspective of America's Citizen-Activists

To accomplish our mission as citizen-activists, we will first have to change our perspective. Unlike our current focus which ignores everything but the issues of the moment, we will have to condition ourselves to address the challenges of two time periods at once: those in the present and those in the future. To be sure, we must not shirk from tackling today's problems – the Covid-19 pandemic, social justice, income inequality, and foreign aggressors, to name just a few – but simultaneously, we must also devote ourselves to confronting the Titanicity. In effect, we must acquire the binocular vision to accept two #1 priorities and act on both of them concurrently.

This perspective is necessary because time is not on our side. Today's problems eat away at our national strength and degrade our sense of a common destiny. If we don't get bigotry and oligarchism and every other contemporary issue resolved, we will lose our vitality as a people and our strength as a nation. On the other hand, the Technological and Climatic Singularities cannot be effectively resolved if we don't begin to work on them at this moment, right now. They are too large and destructive for last minute fixes, and fixes – appropriately targeted, comprehensive and durable – are essential to ensuring a healthy and fulfilling life in America after 2040. We can't resort to longstanding practices, therefore; we don't have the luxury of dealing with one challenge after another. We do, however, have a precedent that should give us confidence we can tackle the near- and long-term at the same time.

Americans are present-day problem-solvers. We focus on the here and now and take on the future's problems as soon as they get here and now. There have been few exceptions to that familiar mode of operation, but one that is close enough to be instructive occurred in the 1960s. At that time, America was embroiled in a civil rights struggle, a cold war with Russia, an unpopular war in Vietnam and a counter-culture movement. Those issues of the day were more than enough to grab and hold the attention of the American people and keep their government busy. President John F. Kennedy, however, inspired them to look to the future, at the same

time. In his 1961 “Moon Shot” speech, he called them to a mission that would take almost ten years to complete – to put an American on the moon and return him safely to Earth. America’s ability to face up to its imperfections in the near-term – with the Civil Rights Act of 1964, for example – and at the same time to take one small step for man, one giant leap for mankind are proof positive its citizens can deal with two challenges at once and make progress on both.

To overcome the Titanicity, we will have to do so again and do even more. We will have to contend with the momentous issues of our time, and we will have to accept a challenge that won’t peak for twenty years. We will have to find the courage and compassion to address both historical injustices and contemporary inequities and, at the very same time, confront the human behaviors that, if left uncorrected, will savage American life for the next one hundred years and beyond. Unlike their ancestors – today’s American generations – must do their duty in the present – for both the present and the future.

The Community of America’s Citizen-Activists

To be effective as citizen-activists, we will also need a range of resources and information. This support should include both the knowledge and assistance of scientists, ethicists and other relevant experts and the energy and wisdom of fellow citizen-activists. It should be informed and shaped by the best of ourselves, and most especially by the talent and camaraderie of those committed to establishing a noble democracy in America. Each and all of us should see ourselves as members and act as a community of **We the People with a mission.**

Whether we are involved as individuals, as members of a group or both, we should look out for and assist one another. We should back each other up when times or events get difficult, as they surely will. We should share our expertise and experience so we devise and implement the most effective strategies and tactics for

achieving meaningful, enduring success. We should contribute our insights and observations so we have a single, accurate understanding of where we are with our goals and what we must still do to accomplish them. And, we should reach out to those who have not yet become citizen-activists and help them to appreciate the power and promise of that role. We should do all of that and more, because we believe in and are dedicated to opening the Neonaissance – the Age of Self-Ennoblement – for ourselves and for future generations of Americans.

The website **OneStoryForAll.com** provides our community with a platform for marshalling that support and a rally point for organizing and implementing our activism. It is a work-in-progress, but one that always provides supportive resources for:

Learning

Citizen-activists will be able to acquire two different but mutually supportive kinds of knowledge:

1. Lesson plans for using this book and other sources that will help them understand the evolving nature of the technological and climatic threats now facing America as well as their timing, potential consequences and the alternative courses of action they could take to counter them.
2. Guidance on where and how they can discover and/or confirm their talent – their inherent capacity for excellence – and identify the alternative ways to develop and apply it in order to achieve self-actualization, both in countering the Titanicity and in the Age of Self-Ennoblement that will follow the opening of the Neonaissance.

Action

Citizen-activists will be able to achieve a sustained impact on American life through:

1. Morale and esprit-building resources as well as peer and mentor relationships that will fire their passion, steel their courage and keep them committed to their mission, especially in the early years, when they are likely to face resistance or, worse, indifference.
2. Information, insights and lessons learned from earlier actions that will help them design and plan new acts to reset the human behaviors driving the Technological and Climatic Singularities. These acts will occur on four fronts:
 - Modelling the personal behaviors that will inspire children and adults alike to revere their own talent and their home planet.
 - Electing governmental leaders at the local, state and federal level who recognize the Titanicity's threat and commit to addressing it effectively.
 - Using economic pressure to force companies large and small, local and transnational to adopt practices that respect both We the People and the Earth.
 - Organizing marches, rallies, voter registration drives and other initiatives to educate the American public about the dangers of the Titanicity and the possibilities of the Neonaissance and motivate them to democratic action that will protect and advance the nation.

Advocacy

Citizen-activists will transform their mission into a defining dynamic of We the People through:

1. Individual and collective acts that will enable them to engage others in their hometown, their workplace, their career field, and the organizations and social circles to which they belong and share with them the mission, commitment and possibilities of citizen-activism.
2. Modelling the credo of Unconditional Actualization For All by advancing and celebrating diversity, equity and inclusion in our nation – a community that each day strives to draw a little closer to the perfection of America’s founding aspirations.

Our Foundation

A virtual destination is not a substitute for one in the real world. But for now, OneStoryForAll.com is the community green for citizen-activists. It provides a meeting place from which we can launch the Second American Founding. It is our starting point; the place where we can learn to appreciate the majesty of the world’s first noble democracy and acquire the will and wisdom to carry that vision to the rest of the American people.

This outpost online is also the dawn’s early light in the transformation of our homeland. And, that will continue to be its role even after the Covid-19 contagion has disappeared. Citizen activism will always unfold – as it should and must – in our neighborhoods and hometowns, our corporate offices and mom and pop shops, our centers of learning and our cultural institutions, our state capitals and Washington,

D.C., but the site will continue to be the genesis of our purpose and our campaign. It will be the beginning to which we always return. It will be – year-after-year – where our truth is marching on.

The Next of America's Greatest Generations

It's the rarest of opportunities – an infinitesimal fragment of chance – to be in a position to effect historic change. It happens so seldom and for so few, and yet, that's precisely what today's four American generations have before them. For Boomers and GenXs, Millennials and GenZs, it is the sternest of tests and the most incandescent of possibilities all rolled into one.

We can preserve and reinforce humankind's supremacy atop the evolutionary ladder, not by diminishing technology, but by employing it responsibly and ethically.

We can overcome the Technological Singularity.

We can restore and strengthen the beauty and bounty of our home planet by resetting our behavior and adhering to the guiding principles of our Republic.

We can avert the Climatic Singularity.

We can advance the perfection of America's union by making real its founding vision as a land that offers Life, Liberty and the pursuit of Happiness to everyone.

We can launch the Grand Deal and achieve Unconditional Actual-

ization For All.

We can open a breathtaking new era of human progress by recognizing the universality of talent and reimagining the purpose of our work.

We can introduce the Neonaissance and transform America into the first noble democracy in history.

We the People can do all of that. We can step forward as citizen-activists. We can write a legacy of heroism that will forever strengthen the beating heart of our nation. We can grasp that infinitesimal fragment of chance and become the next of America's greatest generations.

Let's begin.

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