1

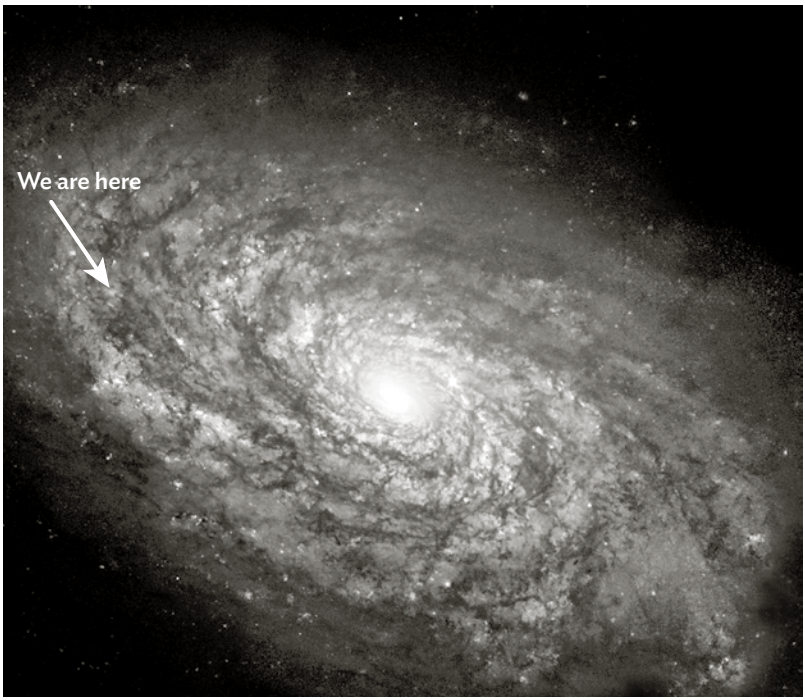
IMPOSSIBLE NEWS

We've got to live, no matter how many skies have fallen.

— D. H. Lawrence

We are where?!

Let's begin by getting ourselves situated:



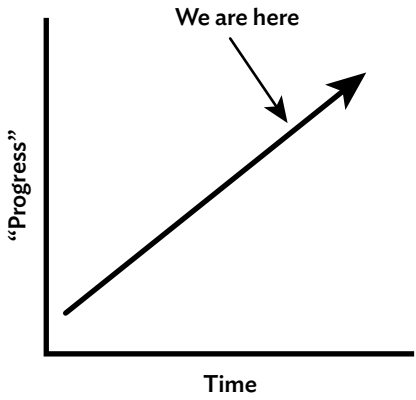
Credit: Ref. 1

…a sentient denizen of a blue-green dot orbiting a humdrum star in the outer suburbs of a galaxy of 200 billion other stars; a galaxy that is itself but one of 100 billion galaxies in a universe expanding at 68 kilometers per second per megaparsec (and if you thought megaparsecs were just a term *Star Trek* screenwriters came up with to sound scientific, you're not

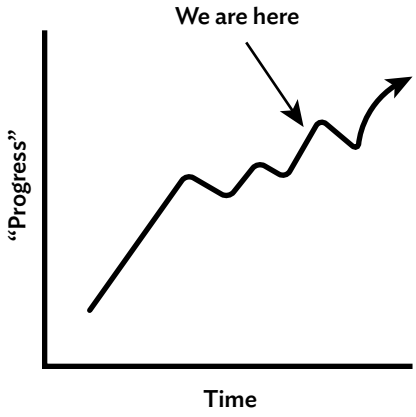
alone). But we are alone! God is dead, or so Nietzsche has told us, and as far as we know we're the only creature in the Universe able to fathom its unfathomable vastness.[1]

It's confusing. It's an absurdity. But hardly the only one: We fall in love. We know we are going to die. We do strange things like make art, and dream, and put each other in prison, and cut ourselves when we're depressed. And try to be kind when we can.

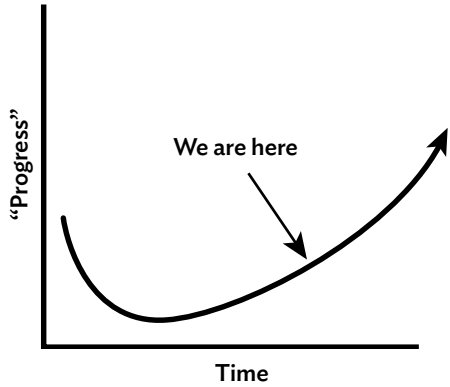
And maybe even do something to make our little home a better place for the next wave of existentially challenged humans that follow. Because we know how hard it can be. And because we believe things can get better. Because we've been told, and many of us still believe, in Progress. We (note: in this book, when I say "we" I usually mean the dominant culture on the planet) believe that History, in the very broadest sense, works like this:[2]



OK, it's not quite as smooth or linear as that; maybe more of a one-step-back-two-steps-forward kind of deal:

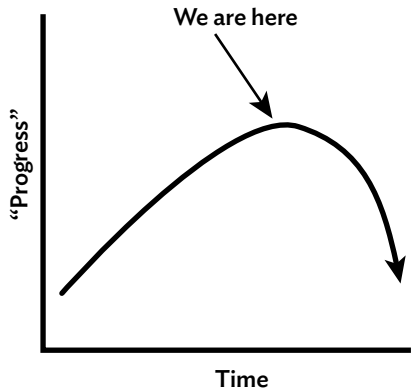


Or maybe—in the spirit of Martin Luther King's celebrated (and surprisingly line-graph-friendly) claim that, "the arc of the moral universe is long but it bends towards justice"—it's more like this:

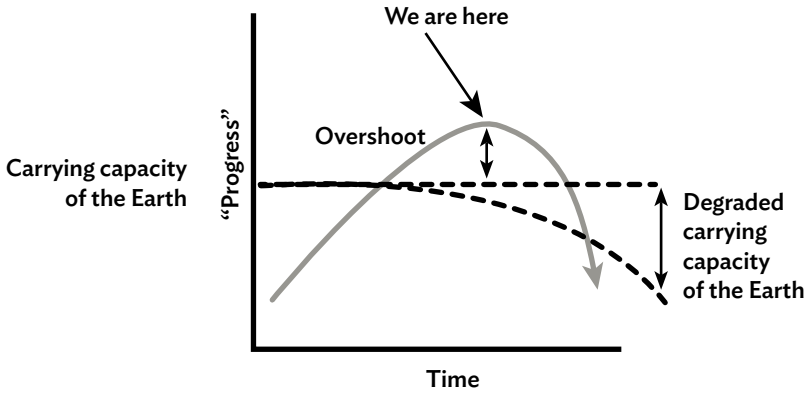


In any case, weirdly graced with an opposable thumb and the gift of gab, we rose from the primordial muck to burn fire, legislate laws, and paint paintings. With a fervid mix of violence, care, farming, and metallurgy, we upswung through Time, through Ages of Stone, Bronze, Iron, Steel, and Plastic; until we were bending rivers, splitting atoms, and replacing hearts. Along the way we drove the woolly mammoth and the passenger pigeon to extinction and committed unspeakable acts against one another; yet we also eradicated small pox, defeated Hitler, codified universal human rights, wrote symphonies, and went to the Moon. The past keeps handing us gifts and responsibilities, which we keep both honoring and squandering, and then passing on to the future. Our track record is decidedly mixed, but this continuity across Time, this Great Chain of Being, gives our smallish lives an extraordinary sense of meaning.

So, what if it turns out that, actually, we are here:



What if Progress is a lie and we're on the cusp of a historic-level catastrophe? This would be very unwelcome news indeed. Profoundly disorienting. Almost impossible to hear. How could this be? Well, here's how Richard Heinberg, scientist, author, Senior Fellow at the Post-Carbon Institute, and one of the foremost analysts of our energy future, explained it to me:



In short, our rate of consumption is overshooting our planet's sustainable sources of production. According to the Global Footprint Network, humanity is currently using the equivalent of 1.75 Earths to provide the resources we consume and the waste we generate.[3] Even worse, if everyone else in the world had US rates of consumption (and most countries are trying their damnedest to), we would need five Earths.[4]

Well, we don't have 1.75 Earths let alone five. (Newsflash: we only have one.) So we compensate by drawing down the future supply of non-renewable resources, which degrades the Earth's ecosystems and impoverishes future generations.

To avoid—or at least lessen—the catastrophe we're setting ourselves up for, we will have to make a double adjustment:

1. to the simple fact that the Earth has a limited carrying capacity; and
2. to the slightly less simple fact that, because of how irresponsibly we are currently managing it, that limited carrying capacity is itself being degraded.

We not only have a five-Earth appetite, we're not replenishing the one Earth we do have. Heinberg's conclusion, and that of many others who've

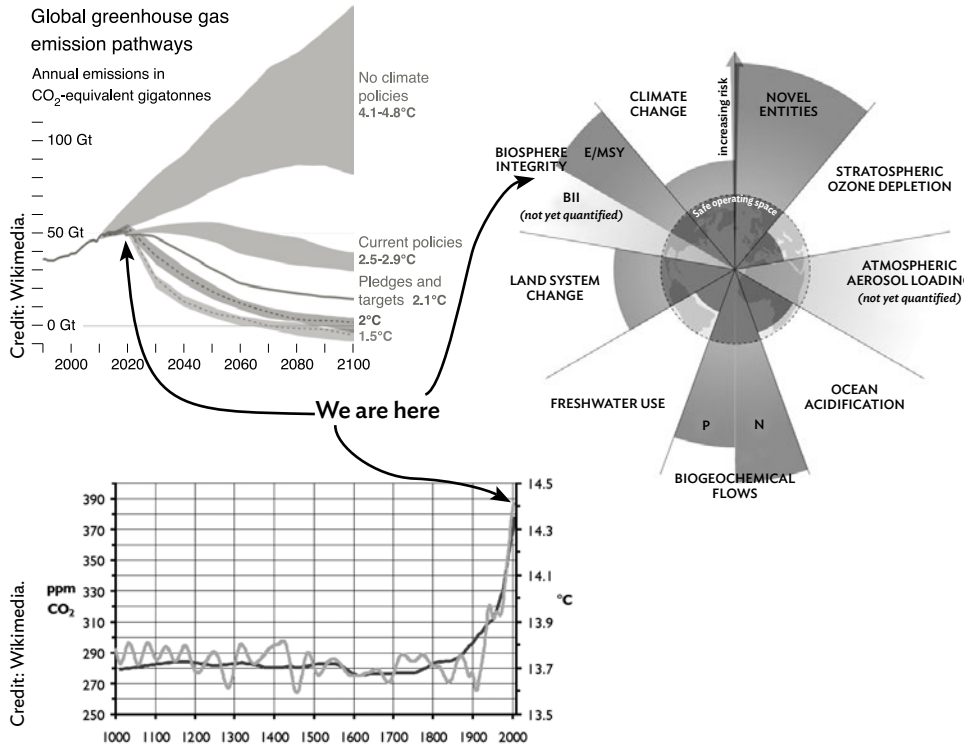
analyzed the same trends: We need a planned "degrowth" of the world's richest economies. We need to partly "power down" our civilization. (Along with a fairly radical redistribution of wealth to soften the blow for us non-billionaires.)

Wait, God is dead, we're alone in the Universe, we know we're going to die, and now you're telling me that after finally clawing our way up the Ladder of Progress to some kind of half-decent (for some of us) civilization, it's all going to fall apart again?

We-e-ell, the exact mix of chaotic falling apart vs. thoughtful restructuring is partly up to us, but, in a word, yes.

Well, fuck you. Fuck you, and the data you rode in on.

Actually, it's even uglier and more complicated than all that because we are also here:



Andrew Boyd, Ref. 2

That's what climate change looks like all at once in cereal box recipe-sized type. There's a bunch of math in there. A lot of numbers and data and science and hockey-stick-shaped graphs and possibilities and probabilities and trend lines and scenarios and it can be hard to sift through it all. But here's the short version:

We're fucked.[5]

And here's a slightly less-short version, cribbed from the opening line of David Wallace-Wells' 2019 blockbuster, *Uninhabitable Earth*:

It's worse, way worse, than you think.

Indeed it is. And to explain how much worse, here's the slightly-longer-but-still-fairly-short version, from Nathaniel Rich's 2018 *New York Times* Magazine special feature, "Losing Earth":

> The world has warmed more than one degree Celsius since the Industrial Revolution. The Paris climate agreement—the non-binding, unenforceable and already unheeded treaty signed on Earth Day in 2016—hoped to restrict warming to two degrees. The odds of succeeding, according to a recent study based on current emissions trends, are one in 20. If by some miracle we are able to limit warming to two degrees, we will only have to negotiate the extinction of the world's tropical reefs, sea-level rise of several meters and the abandonment of the Persian Gulf. The climate scientist James Hansen has called two-degree warming "a prescription for long-term disaster." Long-term disaster is now the best-case scenario. Three-degree warming is a prescription for short-term disaster: forests in the Arctic and the loss of most coastal cities. Robert Watson, a former director of the United Nations Intergovernmental Panel on Climate Change, has argued that three-degree warming is the realistic minimum. Four degrees: Europe in permanent drought; vast areas of China, India and Bangladesh claimed by desert; Polynesia swallowed by the sea; the Colorado River thinned to a trickle; the American Southwest largely uninhabitable. The prospect of a five-degree warming has prompted some of the world's leading climate scientists to warn of the end of human civilization.[6]

Oh, and climate change is just one of several ecologically destructive macro-trends. Combine it with deforestation, overfishing, habitat en-

croachment, ocean acidification, biodiversity loss, and plastic pollution, and the very web of life is under assault. The UN estimates that over a million species, including key pollinators, are now at risk of extinction in the next few decades, with dire consequences for humanity.

Of course, ecological catastrophe is not the only catastrophe we're facing. If you're the apocalypse-inclined type, there's many to choose from. A COVID-19-like pandemic, but with a far more virulent pathogen, could rage beyond efforts to contain it and rip through the human population. Some perfect storm of surveillance ubiquity, terrorism, and collapse of democratic norms could usher in a 21st-century fascism that might be next-to-impossible to turn back the clock on. AI and automation could develop past some mysterious "singularity" threshold and flip the switch over to a society where humans are literally slaves to their robot-superiors and can never regain control. I'm not a conspiracy theorist, nor a doomer by inclination, I'm just obsessed with climate because it has a hard, relentless trajectory that I can't wish myself around.

Whether these other apocalypses happen or not remains to be seen, but the climate apocalypse is already happening, and happening fast. The facts are brutal.

To stay under 1.5°C, the global economy can burn only a fixed amount more carbon, which at time of publication, the Mercator Research Institute on Global Commons and Climate Change estimated at approximately 275 gigatons and dropping fast.[7] This is our carbon budget. The maximum amount of coal, oil, and gas the world can burn and still stay under the 1.5°C limit.

However, the world's already known carbon reserves are many times more than this, which means the lion's share of these reserves must stay in the ground. The rub, of course, is that, while the carbon may be in the ground, its monetary value is already above ground, circulating in the economy—and most significantly, already counted on the balance sheets of the world's fossil fuel companies and petrostates. If you can't burn it, it's worth nothing, which means Exxon, Shell, Kuwait, et al., are likely sitting on a $14 trillion "carbon bubble" write-down.[8] And we have little evidence of those players forgoing profit for the greater good.

And so the battle lines are drawn: A fossil fuel industry whose survival depends on burning every last drop, even if it means killing the planet versus an increasingly mobilized citizenry trying everything it can to "keep it in the ground"—everything from carbon taxes to fossil-fuel divestment to pipeline blockades to rapid deployment of renewables to a

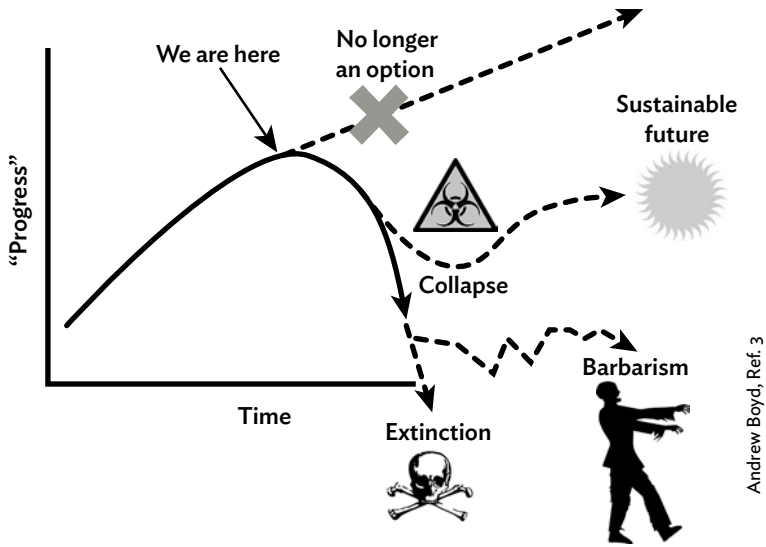
Green New Deal. Meanwhile, the vast majority of people are still sitting on the sidelines.

If industry prevails and we stick with a business-as-usual scenario—and pretty much all data indicates this is what we are doing—we'll blow through our carbon budget in less than seven years.[9] Global temperature rise will continue on its trajectory of 3°C[10] increase or worse by the end of the century, and, in environmentalist Bill McKibben's words, "we won't be able to have civilizations like the ones we're used to."[11]

But—and if you follow the climate story at all, you know there's always a "but"—that's not the only scenario. If a perfect storm of technical progress, enlightened government and victorious social movements can force a tipping point of action and a WWII-level mobilizatin to move the global economy off of carbon, we could keep global temperature rise under, if not 1.5°C, then maybe 2°C. That would prevent the very worst outcomes.

But at this point even the very best outcomes are not very good. Which means in the decades ahead my hometown of New York City will be inundated by rising sea levels. It means humanity's one and only home will be plunged further into a sixth mass extinction; and droughts, fires, flooding and irreversible damage to critical habitats will give rise to hundreds of millions of climate refugees, widespread social chaos and, very possibly, some degree of civilizational collapse.

And so it seems we are here:



Andrew Boyd, Ref. 3

Catastrophic climate change is going to happen. Period. Whether we're locked-in for the fatal worst-case scenario or still have a shot at a better-but-still-pretty-terrible-case scenario depends on who you talk to. Much of the uncertainty lies in the difficulty of accurately modeling a complex system like our climate as it undergoes unprecedented conditions.[12] Feedback loops, tipping points, melting permafrost, and the possible release of ocean-floor methane as the oceans warm, are especially volatile unknowns. The other great unknown: How will humanity respond to the crisis?

In all scenarios, however, we are in for some kind of catastrophe, whether it is fatal to the human species, or *merely* to civilization as we've known it. It is no longer hyperbole to speak of "the end of the world"—it is already in motion.

I do not refute the logic of the science, but deep in my heart I'm still in denial. I know this because every time I stop for long enough to let myself squarely face these truths my body jolts anew into a sickening awareness. While hiking in Iceland in 2005, our guide paused to show us how far the glacier had receded in just the last decade. Then tells us to listen to the nearby ice-melt.

We all go quiet. For the longest time, all we can hear is the wind and the drip-drip-drip of the glacier. "That's the sound of global warming," he finally says with a frown. And then it hits me:

This is really happening. To the planet my feet are standing on right now. Panic, shame, and rage clutch at me, each in its own turn, until eventually giving way to a quiet grief. I wonder: *Is there any hope?* I find myself reaching—almost instinctively, almost in spite of myself—for hope. But is there really any hope? And what would it mean if there weren't?

Why it's so hard to hope these days.

It's always hard to hope. But there are times when it's particularly hard. Our time is one of those times. We know what we need to do to prevent climate catastrophe, and not only are we not doing it, but even if we were doing it, it still wouldn't be enough because we needed to start doing it 30 years ago. It's hard to hang your hope on preventing climate catastrophe—as I and so many of us have—when there is next-to-no basis for actually preventing it.

We can still hope in an arbitrary, disconnected-from-reality way (God will intervene; science will invent some magic process; people power will win the day), but not in a way that is consonant with an objective understanding of the situation. And by "objective" I don't mean a cynical, realpolitik, business-as-usual understanding of the situation; I mean the cold scientific facts of even the most optimistic scenarios. So, if you're hanging your hope on preventing catastrophe, you're hanging your hope on an illusion. This is a brutally sobering realization. It's taken me years to come to terms with it, and at some level I'm still failing to do so.

So, what then are our options? Well, we can hope against hope. Just hope anyway. Why not? It might be a better way to live. Or we can give up hope, and find a way to live without hope while still remaining true to ourselves—and decent to our neighbors—as things fall apart. Or we can hang our hope on something beyond our own time. Not on preventing catastrophe, but simply surviving it; on keeping a tenuous thread of civilization going across the next many generations; on some of us getting through the horror and wreckage of it, to some other mode of living profoundly different from anything we know. This is the "hope beyond hope" that British writer and ecologist Paul Kingsnorth (see page 228) glimpses through his grief. Hope is always hard, but this does seem a particularly hard kind of hope.

In our everyday personal lives, when we hope, we're generally hoping that things will get better in some recognizable way. That our children will be economically better off than us; that our second marriage will be happier than that tumultuous first one; that after knee surgery we will be able to play basketball again. In our collective lives, it's not so different. Think of the lifeline that at-risk queer youth grab hold of: "It gets better!" Or the rallying cry of the Latinx worker rights movement:

"¡Si, se puede!" (Yes, we can!) Historically, it's been these kinds of hopeful, positive attitudes that have powered social movements to resilience and victory. The only problem here, is if we're talking about the next 100+ years, then no, it won't be getting better; it'll definitely be getting worse. And if we're talking about preventing climate catastrophe, unfortunately, "No, we can't."

It's not about being optimistic or pessimistic; it's not about having a pro-social or an anti-social attitude. Because we already know we're in for a catastrophe and, while there's much we can do to slow it down or make it less terrible, there's nothing we can do to prevent it. So, hope—at least the kind of hope we're familiar with from our daily lives and our historic social struggles—is not going to get us through the next 100+ years. We need something different. Maybe we need the kind of hope you call upon in an emergency. The hope you call upon when you're going in for cancer surgery, or battling addiction, or taken hostage, or lost at sea. The hope we associate with grace, redemption, deliverance; the hope, not that things will get better, but that we will simply, doggedly make it through to the other side.

How do you build a social movement on this kind of hope? What vision do you offer people? What promises can you make—that you can actually keep?

But maybe even this kind of hope is not enough. Because most of us are not yet caught in a storm; and if we're addicted, it's to carbon; and if we've been taken hostage, it's by the fossil fuel industry, and our little individual Stockholm Syndromes are, you know, complicated. It's hard to know how to hope when your own everyday life helps inch the apocalypse forward. Because we're not just the carbon victims, we're also the carbon perps. We've heard how essential it was for those in the Nazi camps to hold on to hope. But their stories can only inspire us so far because we're also moonlighting as guards. We're half-prisoners half-guards—what strange hybrid hopes do we harbor? That History will never catch up with us? That, if it does, some tribunal will absolve us? That we will rise up against ourselves before we lead ourselves to the ovens?

The cognitive scientists and behavioral psychologists and social-marketing experts and professional climate communicators will share their findings: more dismaying facts don't help; individual eco-morality is a turn-off; personal legacy matters. They'll suggest small, concrete,

positive steps communities can take; that we tell a story not of predicament and grief and collapse, but of hope and possibilities and a grand opportunity to redesign society. Yes, I see their logic and appreciate their realism (and I've been part of sit-ins in Congress and knocked on neighbors' doors in the snow to try to make it happen), and I half-believe it might just be the best we can do, yet I'm still left wondering what good any of it is, if, when you add it all up it's a whole lot of too little too late.

In 2014's *This Changes Everything*, Naomi Klein makes the case that "tackling climate chaos is not only necessary to protect our critical ecosystems, but can lead to a better life for all."[13] And she's right. Our task is not only necessary but full of promise.

But. We're. Not. Doing. It. Not even close.

And we needed to do it many yesterdays ago.

Once you've looked squarely at the climate science, it's hard not to feel like Sarah Connor in the dream sequence from *Terminator 2*. It's a beautiful day, kids and parents (as well as the younger Sarah) are in a park playing on the swings. With her fingers curled around the wire mesh backstop, she's shouting, trying to warn everyone (including herself) of imminent doom. But everything is just so lovely and normal, and who is this madwoman shouting her crazy thoughts? Then the flash and the fireball, and all is lost.

Many of us are living a quiet, less dramatic, slower-motion version of that dream. Today, for example, it's glorious in New York. I'm biking around the edge of Manhattan. I pause to lie on the grass by the water. Hudson River Park, built on landfill reclaimed from the river, is the picture of tranquility: runners, toddlers, kids playing Frisbee, all framed by blue sky and handsome buildings. I try to imagine the sea wall the city elders will try to build here, before they abandon lower Manhattan—and maybe much of the city—to the chaos of Frankenstorms and rising tides.

Like Cassandra, Sarah Connor had some secret, time-travelly knowledge from the future. Of course, people thought she was mad; of course, no one listened to her. But I'm no such Cassandra. Any news I might bring has already been brought. Thousands of scientific papers. Millions of newspaper column inches. Anyone who cares to pay attention already knows that we've broken Nature, and the world we know will soon end. This park, for one, is done for. This city I love, home to almost nine million, and one of humankind's most extraordinary creations, will, under pressure from extreme weather and system-wide collapse, be wrecked and made uninhabitable by the end of the century.[14] Possibly within my lifetime.[15]

Either way, I'm living in a ghost town. The ghosts aren't from the past, though, they're from the future. Why do I see them, and no one else? Actually, I think everyone sees them. We're all inverse-Cassandras: We can secretly see that the world is going to end, but no one wants to say it out loud because then it will really end, and we'll have to take responsibility for killing it, or at least failing to save it. Instead, we nod to our ghosts and carry on.

No one is happy about this. No one thinks this is the right way to live. But we don't know what to do. We don't know how to feel. And so, a part of us falls silent. We play tricks on our soul. We slide into a strange double life, "caught," says eco-philosopher Joanna Macy, (see page 187) "between a sense of impending apocalypse and the fear of acknowledging it." She elaborates:

> In this "caught" place our responses are blocked and confused. On one level we maintain a more or less up-beat capacity to carry on as usual…and all the while, underneath, there is this inchoate knowledge that our world could go at any moment. Unless we find ways of acknowledging and integrating that anguished awareness, we repress it; and with that repression we are drained of the energy we need for action.[16]

Millions of us are caught in this place. Who wants to dwell on such terrible news? Who wants to be the radioactive person at the party? Who wants to open themselves to all the grief waiting for us? So we don't. And this elaborate act of self-misdirection has many an accomplice:

- Governments that can't bring themselves to announce the news like the existential emergency it actually is.
- The niceties of everyday life which shun the grief-struck herald.
- The paid agents of Big Oil and Gas who have spent millions to cast shade on news we already wish weren't true, and are hellbent on convincing us that we consumers are the main problem.[17]
- The mystifications of late capitalism, that train us to act as if we weren't aware of our own contradictions even though we acutely are.
- And maybe, most of all, the structure of the Climate Crisis itself:
  - Its relentless trajectory: To bring it on, all we have to do is, um, nothing.
  - Its overwhelming complexity: To fix it, not only do we have to *do something*, but, as Naomi Klein has said, we pretty much have to "change everything" about how our economy and society operates.
  - Its asymmetries of power: Those of us most historically responsible for causing the problem—wealthy, mostly white, high-carbon-footprint folks in the Global North who burned dirty coal for two centuries to build up our economies—are, for now, the least impacted, while those who did the least to cause it—poor communities, people of color, and those who live in the Global South—are suffering the most.

- Its pernicious decoupling of causes and effects: Millions of years of evolutionary programming have hard-wired us to react to immediate threats with a fight or flight response, but here we are, stuck in a slow-motion catastrophe whose worst effects many of us alive now won't feel for decades, if ever.

As I lie in the grass along the Hudson River, the sky is blue, the sun is shining, the kids are playing. In spite of a rise in extreme weather events, catastrophe still seems far off and abstract. Our backs are objectively up against the wall, but it rarely feels that way. We sense the doom, but only vaguely; at some essential level, what's happening remains unbelievable. Our scientists and our most prescient leaders and even our own consciences are telling us that we must act, but our bodies don't feel the urgency. We're not even listening to what we ourselves have to say.

I came to political adulthood during the wave of protests against nuclear power and nuclear weapons that swarmed the Western world through much of the 80s. Back then it also felt like we were facing a doomsday scenario. The gravest threat was a catastrophic meltdown at a nuclear plant, or an escalating arms race triggering all-out nuclear Armageddon. Apocalypse loomed, but it was far from inevitable—in fact, just the opposite: it would require an accident or a war. There were things we could do—and did do—like phasing out nuclear power plants, de-escalating the arms race—to help prevent the worst outcomes. But it was always possible that nothing too apocalyptic would happen. Not so with the climate crisis. Given the carbon emissions path we are currently on, all we have to do is carry on just as we are, and climate apocalypse will be upon us. It doesn't require an extraordinary accident, just a slow business-as-usual march into the future.

So what can we do? At one level, there's a quite a number of things we actually *can* do, both individually: bike more, fly less, recycle, compost, go vegan, put solar on your roof; and collectively: divest your self/workplace/city/church/school from fossil fuels, make a community resiliency plan, block a pipeline, sue an oil company, pass a Green New Deal, sign an international agreement limiting carbon emissions and vote people into office who'll uphold it. Just to name a few. But at another level, we sense that even if all this were happening, it still wouldn't be enough to prevent catastrophe, as it's simply too late now. So, again, what can we do?

Well, we must keep doing all of that, but also take a deep breath, step back, and try to get honest with ourselves. Here's Paul Kingsnorth trying to get honest with himself:

> Is it possible to observe the unfolding human attack on nature with horror, be determined to do whatever you can to stop it, and at the same time know that much of it cannot be stopped, whatever you do? Is it possible to see the future as dark and darkening further; to reject false hope and desperate pseudo-optimism without collapsing into despair?[18]

He then gamely answers his own question: "It's going to have to be because that's where I'm at right now."[19] And that seems to be where more and more of us are at right now, myself included. And it's not an easy place to be. It's a heartbreaking mess of a place to be, actually. A whipsaw of competing emotions and commitments that are hard to hold all at once.

The hardest part for Type-A, can-do, eyes-on-the-prize activist me is letting go of the expectation that we *can* make this right. Because I really, really want to make this right. I want to fix this problem, and make things better. I want, as they say, to "save the world." And to let go of that possibility—to even think of letting go of it—is a blasphemy, a kind of death. But the thing is, climate catastrophe, and the broader civilizational crisis of which it is a part, is not a *problem* we can fix; it is rather something quite different: it's a *predicament* we must face.

This distinction was brought home to me by collapse theorist, sci-fi novelist, and, former Archdruid of North America, John Michael Greer.[20] "A controlled, creative transition to sustainability might have been possible," Greer argues, "if the promising beginnings of the 1970s had been followed up in the '80s and '90s." But our politicians and CEOs failed us mightily in those decades and since, and so, "our predicament in the early 21st century includes the very high likelihood of an uncontrolled transition to sustainability through…collapse." In other words, there was a window when there might have been a "solution" to the "problem" of climate change and the general unsustainability of our civilization but that window was squandered, leaving us in a predicament. Here's how Greer explains the difference:

> A problem calls for a solution. A predicament, by contrast, has no solution. Faced with a predicament, people come up with

> responses. Those responses may succeed, they may fail, or they may fall somewhere in between, but none of them "solves" the predicament, in the sense that none of them makes it go away.[21]

Greer notes the striking irony of a civilization that believed it could turn every human predicament—poverty, sickness, even death—into a problem to be solved by technology, that is now "confronted with problems that, ignored too long, have turned into predicaments." But in this irony he finds a silver lining. Unsolvable predicaments—particularly the inevitability of our own deaths—are the stuff of the human condition, and our reckoning with them has arguably given rise to what is most beautiful and profound in human culture. Could the predicament of industrial civilization, Greer wonders, "push us in the same direction—toward a maturity of spirit our culture has shown little signs of displaying lately, toward a wiser and more creative response to the human condition?"[22] Could it? Theoretically, yes. Will it? Who knows. But, here, at least, was something worth hoping for.

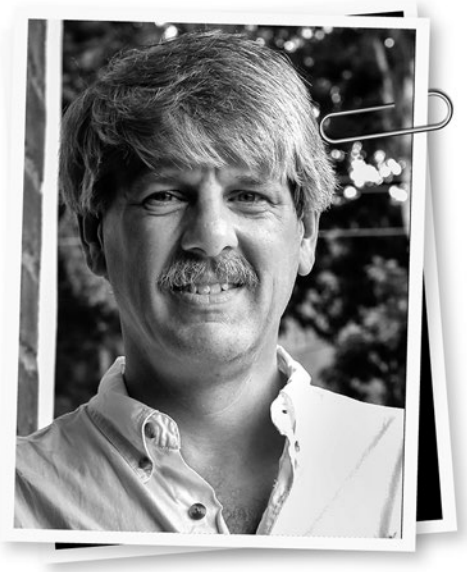
And so, our story comes into focus: Decades ago, our politicians and engineers and other problem-solvers failed to build us a bridge to the future when they had the chance. Now, stranded here in the early 21st century, a chasm opening up in front of us, we must find a different path between the worlds. Caught in the teeth of an unsolvable predicament, facing a future "dark and darkening further," we must still walk forward. But how? Neither pessimism nor simple optimism is going to cut it for us. Something more robust is needed.

We live in a strange time that asks difficult things of us. On the cusp of a long descent, in the face of radical uncertainty, each of us must find an ethos for the path ahead. Do we just say "fuck it"? Can we find a way to hope in spite of it all? Must we settle for the stoic satisfaction of helping things get worse as slowly and humanely as possible? Facing a catastrophe we can mitigate but not prevent, and unable to know—ultimately—whether we are hospice workers or midwives, what is still worth doing?

The Hudson River laps at the edge of Manhattan. A seagull cries. I gather this last paradox and all the others into my bag. Behind me the early-afternoon sun splashes across the water. Beneath me the Earth turns imperceptibly on its axis towards twilight. Our unborn ghosts keep vigil here. They know things we cannot yet see. Not just about the future, but about me. I'm trying to listen.

MEETINGS WITH REMARKABLE HOPERS AND DOOMERS

DR. GUY MCPHERSON



"If we're the last of our species, let's act like the best of our species."

I was on an odd quest. I had no ring to drop into the fires of Mt. Doom, but there was doom aplenty. There was no Minotaur to slay, but there was still a labyrinth of the self to descend down into. And maybe yet a world to save. In search of ways to face our collective fate, I went to speak with people whom, in a nod to Gurdjieff, I called, "Remarkable Hopers and Doomers."

My first meeting was with climate scientist Dr. Guy McPherson. As the foremost spokesperson for the view that abrupt climate change will result in near-term human extinction (NTHE), he was the Dark Prince of Climate.[1]

Many strongly dispute his claims, but as a scientist—and specifically, as a conservation biologist, and one of the first to identify and elaborate the dynamics of climate change—he had professional standing to bring such a dire prognosis to the debate.[2] His views are considered quite the outlier (climate journalist David Wallace-Wells describes him as on the "fringe," while climate scientist Michael E. Mann calls him a "doomist cult hero"), but that doesn't mean his views are necessarily wrong, and to write him off as a contrarian or crackpot seemed against the spirit of my two-part mission: (1) to face the truth of our climate predicament, no matter how dark or disorienting; and (2) to meet deeply informed people who've found a way to live with that truth. So, why not jump in at the very deep end?[3]

As with all these interviews, I'd wanted to do this one in person, and was hoping to catch Guy at his sustainable homestead outside of Tucson, but he's almost never in Arizona and so we spoke on Skype.[4] I asked for an overview of his work.

Guy: Okay, I'm Guy McPherson. I'm a Professor Emeritus of Conservation Biology at the University of Arizona. After leaving active service at the University of Arizona, I continued to conduct research on what I call the twin sides of the fossil fuel coin: energy decline, sometimes known as peak oil; and climate change. My ongoing research on climate change, which I've conducted since I was in graduate school in the mid-1980s, has led me to the conclusion that we're in the midst of abrupt climate change.

This phenomenon has precedence in planetary history, although not in the history of our species. This abrupt event, which is clearly underway now, is taking us to a point where it's difficult for me to see how the planet will be able to continue to sustain human life.

As a conservation biologist, I tend to look at things through the eyes of speciation, extinction, and habitat. Habitat is rapidly disappearing for humans already. We're already about 1°C above the baseline of where we were in 1750. When we get another few degrees above that, it's difficult for me to imagine we'll have habitat for our species in the future.[5]

Andrew: I know you've said all this to audiences hundreds of times before, but, right or wrong, hearing you say it now, hits me hard. I'm interested in how such a conclusion plays out at the psychological and philosophical level for you. When you were a teenager you didn't think that humanity would be extinct in a few short decades, but you think that now. That's a profound shift. Were there specific moments or stages of heartbreak and awakening? Why do you think you've landed where you have?

Guy: That's a great question, a serious question. There were many steps along the way. I began with an Al Gore-style understanding of climate change as a linear process—where, yes, there's still time to do something about it. That gradually shifted, until, ultimately, 14 years ago, I concluded we were in the midst of abrupt climate change.

As I indicated, I started studying climate change as a graduate student because it tied in with my research in field biology. Wherever I looked, I kept coming across a similar pattern: events, well-documented in the historic record, that showed how rising and falling precipitation levels con-

tributed to the increase, decrease, and sometimes the complete removal of populations—and ultimately species—from the planet. This was some of the earliest work of its kind.

In 2002, I found myself, co-editing a book[6] that specifically focused on the role of precipitation in climate change, an aspect that had, up until that point, been largely ignored. There'd been a lot of research on temperature because that's the most obvious factor, but there hadn't been much research on precipitation. It was while co-editing this book, that I came to the conclusion that, given the degree of habitat we're expected to lose, we're headed for human extinction in the not so distant future.

Andrew: Not the kind of "Eureka!" moment most scientists dream of.

Guy: No.

Andrew: What was it like to come to this realization? Did you and your co-editor see things the same way, and how did your larger community react?

Guy: At the time, I was pretty quiet about it. It was a way-outside-the-box notion, and not one that others shared. Though, since then, it appears the science has pretty steadily and emphatically caught up with me. My co-editor, a former graduate student of mine with three children, looked at the same data, edited the same manuscripts right alongside me, but we reached different conclusions. That's fine. Scientists are noted for reaching different conclusions based on evaluating the same evidence. At some point, though, the evidence becomes simply overwhelming. Then any legitimate scientist will capitulate to the evidence. At the time, 2002, the evidence was hardly what one would call overwhelming. It was mostly through intuition that I reached the conclusions I did, but the data has since caught up with me.

The impact over the course of the next several years was devastating for me. Ultimately, it led to the loss of all of the relationships I held dear. I no longer interact with any of my former colleagues or co-workers at the University of Arizona, neither personally nor professionally. I lost essentially all of the personal relationships I had. It was a shattering experience. That was one of the reasons that I didn't talk about it much in the early days because when I talked about it, it didn't go well. Later, when the evidence just flat overwhelmed me, I couldn't ignore it anymore. I sort of had to talk about it. I'm at that point now.

Andrew: Wow. That's quite intense. I think a lot of people are going through *now* some version of what you went through *then*. A similar, and very human, process of being shattered, and feeling exiled. And whether

or not they're coming to the same factual and scientific conclusions as you have, it's all very heavy, and there's a lot of grieving going on. People are really struggling to find their footing. Thank you for being so upfront about your story.

You said that for so long you held your tongue and then you felt like you *had* to talk about it. This is a corny word, but would you say that has become your *mission*? You speak and blog and write books about this.

Guy: I'm a teacher at heart and I can't help myself. When I was six years old I brought the Dick and Jane Reader home from school and I plopped in front of my four-and-a-half-year-old sister and I pointed at a picture and I said, "What's that?" She said, "It's a dog." I don't know this from memory. I just have been told this story dozens of times by my parents. Apparently, I said, "No, that's Sp, Sp, Sp, Spot." I was already frustrated and angry with her because she couldn't distinguish between any animal dog and the dog Spot, the hero of the whole series, right? So, even back then, I felt this obligation to present information to people. Whether they wanted it or not, I was going to shove it down their throats. I look back on that now, and it's just a horrible thing.

Now, we've got something a little different. Now, this is truly an existential moment. We're talking about human extinction. This is the most important phenomenon in the history of our species. Why do I do it now? Part of it is that I'm a teacher at heart and I can't help it. Part of it is, I'm not the captain of this ship, but it seems to me that all the other captains of the ship—the government, the media, et al.—are neglecting their duty to tell people the ship's going down.

I was a firefighter in my youth. The lookout, when spotting a fire, is supposed to call that in so that people can go put out the fire. In this case, the fire can't be put out, but I still think people have the right to know that the fire is upon them. That not only are our individual lives short, but our run as a species is about to be abruptly shortened as well. This has led me to this bizarre practice for the last several years of going around and reminding people that they too are going to die. You'd think that people would, in fact, recognize that and take it to heart and not view it as something that was utterly bizarre. But, I've been surprised by the response in many cases.

Andrew: It's more profound than we're ready to deal with. It's so close to the bone. A lot of us live in great comfort, historically speaking. We're not prepared to live—or even think—differently. Among the responses you get, what surprises you the most?

Guy: Built into our culture is the notion—and it goes without question by most people—that we're going to live a long time. That civilization will persist forever. That economic growth is just a given, and every generation will have more than the generation before. Which I guess shouldn't be too surprising. Since nobody comes on the television or the nightly news and says, "You know, we might be actually reaching limits to growth," or "There might be consequences for civilization."

The people we might have looked to for leadership failed us. Even those who are willing to go the next step and acknowledge that we're in the middle of abrupt climate change, suggest we can still survive on an outpost on Mars, or ride it out in a nuclear submarine. Then I realized that at some level, they're not radicalized enough. They're not willing to go that next series of steps and acknowledge that abrupt climate change is going to take the human species down, just like we're already taking down with us a couple hundred species every day to extinction.

Andrew: So, do you believe that human extinction is a 100% certainty? Is there a path—even an infinitesimally narrow one—by which we survive? Do we have any wiggle room?

Guy: I'm 100% certain that our species, like every other, will go extinct. I no longer put a date on when our species will go extinct. I just say, "in the short term." It will be "faster than expected" because that's the tag line for almost every newspaper article I see these days with respect to climate change: basically, fast things happening quite a bit faster than expected.

Andrew: If, as you say, we have no "expiration date," could you imagine us surviving for another 1,000 years? Or 10,000 years?

Guy: No and no.

Andrew: Oy.

Guy: Oy, indeed.

Andrew: The subtitle of your blog is "Our days are numbered. Passionately pursue a life of excellence." Completely independent of climate catastrophe, this seems like a fine life philosophy. Some of the leading thinkers out there argue that facing up to our current climate reality can also bring us closer to our truest humanity. Do you agree?

Guy: Absolutely. Even if we live what we would consider a long time in this culture, maybe 100 to 110 years, even if our species were to persist for a few thousand more years, our days are still numbered—as a species, and as individuals.

If our species persists for another couple thousand years—and, again, it's hard for me to imagine that it could, but if we do—our run will still

be about one-seventh as long as a typical species of mammal on planet Earth. The Universe, as near as we can tell, has been around for about 13.8 billion years. Our species showed up about 200,000 years ago. Yet we have the hubris to think this whole thing is about us? It seems a little ridiculous to think the universe sat around for 13.8 billion years—well, 13.7 and change—just waiting for us to show up, just waiting for the good news that is humanity.

Of course, our lives are short. Of course, our days are numbered. They've been numbered from the day we were born. Of course, one should passionately pursue a life of excellence, no matter how long one has on the planet.

Andrew: So, climate change, an otherwise unmitigated disaster for humanity, has a silver lining?

Guy: I've been told by many people that my message actually reminds them that they've got to start living with urgency. We've had 60 years or so—since approximately World War II—of the system working in a certain way but there's no guarantee that it's going to work that way in the future. We tend to buy into the dominant narrative which says that we're all going to go to school, and grow up, and go to college, and work summer jobs, and then get a real job, start saving for retirement, work until we're 60 or 65, then retire, and travel the world. I'm reminding people that no matter how this turns out, it's not going to be like that anymore.

I hear from people who, after they hear me speak, after they see my writing, think: "Yes, now is the time. Now I'm going to start living with urgency. I'm not going to wait for another ten-years'-worth of tomorrows before I start doing what I actually love to do." So, yes, for me and for many other people, that's a silver lining.

Andrew: Yes, there's something freeing about facing the inevitability of your own death. But it's one thing to consider that at the level of your own mortality, of your own individual lifespan—and another thing entirely to do it at the level of our entire civilization or species. Isn't there some gray area in the science? Maybe we can adapt our way through the brutal changes to come? Maybe nature's vicious feedback loops will not accelerate as horribly as you expect? Or maybe virtuous feedback loops on the human adaptability front will give us a fighting chance?

Maybe, just maybe, there's a sliver of a sliver of a window of survival here. If so, we should do everything we can to abate emissions and build communities so that some of us can make it through, no? To focus on

just checking things off my bucket list takes me away from that absolutely essential task of survival, possibly the most important task any human generation has ever had. That's the dilemma that I and many of my peers struggle with. Does that make sense to you?

Guy: Sure. Absolutely. I have never suggested inaction in response to the evidence, and the conclusion I have reached. I have remained an activist myself. I take to heart Tim Garrett's excellent work,[7] indicating that only the collapse of industrial civilization will prevent runaway climate change. And there are many, many other good reasons to terminate this set of living arrangements. According to a United Nations report from August 2010, we're driving to extinction 150 to 200 species every day. That's an outstanding reason to stop operating how we're operating right now.

I tend to take a Buddhist perspective on this issue, as I do with many issues. I think we should determine what is right and do what is right. We should take "right action"; then, inspired by another Buddhist principle, we should not be attached to the outcome. Because the outcome is ugly.

The runaway train that is industrial civilization has run away. It has not just left the station, but has gone over the trestle, off the tracks and now we're negotiating about who gets the best seat for the best view on the way down. From my perspective, that's no reason to act indecently. That's no reason to push grandma out the window so she dies first. That's no reason to gather up a bunch of overweight people so I have something soft to land on when we hit bottom. I still think that there are things we can and ought to do in light of this situation.

Even if the situation is truly hopeless, does that remove meaning from my life? Does that mean I should stop acting decently? No, of course not.

Andrew: So, losing hope doesn't mean you start acting immorally or indecently. Okay. And even if the metaphorical train has already gone over the metaphorical cliff, you're saying there's still much we can do. There are still a lot of ways we can care for the people around us: We hold each other's hands on the way down; everyone helps each other to brace for the fall, is that it?

Guy: Not only that but what better judge of our character than how we act in the face of impossible odds. Comforting the afflicted and afflicting the comfortable on the way down seem like perfectly reasonable strategies to me.

Andrew: Muckraking at the end of the world.

Guy: *Especially* at the end of the world. If it's the end, then how do we want to go? If we're the last members of our species, then shouldn't we act like the best members of our species? On the way down why should we not act with decency, with compassion, with passion towards what we view are right acts? Why not? What better time than now to demonstrate the best in all of us?

The essential question is: How do you choose to act in the face of the unspeakable? We are at the end of Time. We're all going to die. But that's not what this moment is all about. The focus must be on how we live.

Andrew: Is this approach rooted in what you call your "Buddhist perspective"?

Guy: It's interesting because I have reached my conclusions from a strictly left-brain scientific perspective. My perspective, when I speak and when I write, is still deeply rooted in rationalism, although, curiously, my message comes across as spiritual to a lot of people. In the early days, when I was doing public speaking, I found that insulting. I don't find it insulting anymore. I'm actually gratified that some people find my message a spiritual one. They think I'm a spiritual teacher of some kind. I'm definitely not a guru. I'm not interested in that sort of guru-like status, but if I am actually capable of changing people's behaviors and values, well that's what I've been shooting for for a long time. If that falls into the category of spiritual, then so be it. I can live with that.

Andrew: Thank you. This has been, I don't know, a melancholy, but very beautiful conversation. I really appreciate you being so open with me. I have one last question: Would you consider yourself hopeful?

Guy: I consider hope to be a bad thing. I believe that hope and fear, both four letter words, by the way, are the twin sides of the "I can't predict the future with certainty" coin. I will either hope for some outcome that I have no influence over or fear some outcome that I have no influence over. I view both of those notions as being not only unnecessary but unhelpful. I want to have agency. I want to take action. I don't want to hope for some good outcome that depends on a future that will never happen; nor do I want to fear that terrible future. I see hope as wishful thinking, and fear as its opposite: the nightmare of the future. I'm trying to avoid both those things in my life. Maybe that makes my message more difficult to swallow for many listeners and readers. In any event, my version of honesty is pointing out that hope is useless, or worse.

The interview[8] was not what I expected. I'd expected tons of numbers. I'd expected a somewhat rattled, insistent personality, out on a limb and defensive. Instead, far from the Dark Prince of Climate, far even from your standard-issue contrarian who likes the sound of his own voice, I found Guy to be accessible, humble, and touchingly grief-stricken; all in all, a profoundly decent person.

Here was a man bearing the worst kind of news. Nobody wanted to hear it. Even he wished it weren't true. It brought him no "I told you so" satisfaction to have been first out of the gate, and have the data slowly move in his direction. He'd suffered for it. He'd lost friends and colleagues; he'd been forced out of his beloved profession.

And yet he'd landed in a profoundly life-affirming place. He'd turned all this news of death and doom into an invitation to live more vividly, to see the preciousness of life with awakened eyes. Most curious of all: his relentless, level-headed, duty-bound pursuit of rationality had landed him in a place his readers and listeners experienced as spiritual. He was a strange prophet indeed.

Yet in spite of Guy's equanimity, I was pretty wrecked by our interview. Was it really too late? Were we all doomed—and so soon? Was it true that the best we could do was to try to live ethically while the ship sinks? In the face of extinction, where does the motivation for that kind of right living even come from?

Guy's a scientist. His habitat graphs may not lie, but they're not tracking all the data that matters. They don't include what humans are truly capable of when everything is on the line. Who could speak to that intangible quality without using it as an excuse to bullshit me into false hopes?