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15 Stories We Tell

People tell stories. It's how we make sense of the world. We tell stories to one another, and we tell them to ourselves in our heads. We've been doing it since before we were people. We are characters in our stories, and we act as if our stories are true.

The Danger of a Single Story

The single story creates stereotypes, and the problem with stereotypes is not that they aren't true, but they are incomplete. They make one story become the only story.

Chimamanda Ngozi Adichie

With respect to climate change, nearly everyone has been telling the wrong stories. The stories we've told ourselves have distracted and diverted us, led us to denial and even despair. Worst of all, unhelpful climate stories cause delay and more delay in the face of gathering danger.

Let's first refute some of the most unhelpful stories about climate change. and then consider some better ones.

15.1 REFUTING UNHELPFUL STORIES

Not too many years ago, a lot of people were telling stories that denied the reality and seriousness of climate change. There are still a few of these stories knocking around, but climate denial is fading fast as a broadly shared narrative.

Much more pervasive and damaging in the 2020s are stories that encourage despair and disengagement. Each of these stories grows from a grain (or more!) of truth, yet each is profoundly disempowering. By bringing these popular but misleading narratives into focus and engaging them with a critical eye, we hope to move beyond them.

15.1.1 Decarbonizing requires lifestyle sacrifices

One of the most harmful stories we tell is that people must sacrifice "for the good of the planet." This narrative is especially potent when it's used to divide people into rich and poor with the implication that all those poor people "over there" should reduce their quality of life for some kind of abstract benefit.

This framing promotes resentment and oppression, resonating with centuries-old divisions perpetuated by colonialism and imperialism. For decades, international climate negotiations have bogged down over the need for rich countries to decarbonize first, with large financial transfers to assist poorer countries transition to lower emissions.

Even at the individual level, calls for sacrifice are divisive and counterproductive. The idea that we must each calculate a personal "carbon footprint" and be holier than our neighbors is a pernicious piece of fossil-fuel propaganda. It promotes finger-pointing and shaming rather than collective action and robs communities of the goodwill needed to solve social and economic problems together.

In today's world, clean energy is much less expensive than burning carbon. A concerted global effort to build clean infrastructure will provide more energy and jobs, not less, for people who have suffered scarcity up to now.

It is long past time to embrace opportunities for abundance and prosperity rather than scarcity and sacrifice when we talk about climate solutions.

15.1.2 "We have only ten years …"

A frequently told story puts a time limit on solving the problem of climate change. The trouble with this sentence fragment is that it leaves out the critical "or else" clause! Proponents of this story tend to create their own unrealistically bleak versions of the end of the sentence.

Media and punditry promoting this narrative often cite the IPCC Special Report on Global Warming of 1.5 Degrees (SR15, published in 2018). The report was developed to document the costs and benefits of limiting global warming to 1.5 ºC rather than 2 ºC above preindustrial conditions. These numbers are not arbitrary but rather reflect the agreed-upon (2 ºC) and aspirational (1.5 ºC) goals of the international policy process that led to the Paris Agreement of 2015.

SR15 painstakingly documents the advantages of limiting warming to 1.5 ºC rather than 2 ºC, which are substantial and almost certainly cost-effective from an economic point of view. It also highlights the extremely ambitious steps that would be required to stop warming almost immediately. This should not be surprising given that the world is already about 1.3 ºC warmer than it was in 1800, and that warming will continue until emissions cease.

One of the headline results from the SR15 report is worth quoting here:

In model pathways with no or limited overshoot of 1.5°C, global net anthropogenic CO2 emissions decline by about 45% from 2010 levels by 2030 […], reaching net zero around 2050.

IPCC Special Report on Global Warming of 1.5 Degrees

In 2018 when the report came out this sentence was widely translated into media headlines that read "we have just 12 years remain to stop global warming."

But *that's not what the report says!* Rather, IPCC was highlighting the difficulty of preventing warming from overshooting beyond 1.5 ºC, which the report says would require "rapid and far-reaching transitions in energy, land, urban and infrastructure" and "the use of carbon dioxide removal (CDR) on the order of 100–1000 $GtCO_2$ over the 21st century."

There are at least two terrible problems with the way the IPCC SR15 report gets misquoted or quoted out of context:

1) It encourages a "doomist" framing in which the story morphs from "stopping warming now is a good idea but really hard" into "the world will end in 2030;" and
2) there's no contemplation of what comes after 2030.

At this writing (in 2023, five years after the SR15 report), it's increasingly unlikely that emissions will be cut fast enough to limit warming to 1.5 ºC with no overshoot. But what are we to do with this situation?

It's incredibly self-destructive and disempowering to imply that failing to meet this self-imposed deadline means we should give up – *precisely the opposite is required!* Once we fail to hold the line at 1.5 ºC, policy must strive to stop warming at 1.6 ºC. Then 1.7 ºC. Indeed, every little bit counts, and every little bit helps.

It is simply not the case that "we have only ten years," because in year 11 we will have to get up and push through the next step. If and when we miss a target, we just have to work extra hard to hit the next one.

15.1.3 Tipping Points – "warming will continue no matter what we do"

There is no credible evidence that the climate system has passed some kind of "tipping point" beyond which global warming will continue after we stop burning fossil fuel, or that it will do so in the next few decades.

It's critical to distinguish between positive feedback and runaway feedback. Positive feedback means that "warming begets warming" by amplification through Earth system processes. We know that there are many positive feedback processes in the Earth's climate system and that in fact these "amplifiers" are responsible for much of past climate cange.

Runaway feedback is the idea that once warming starts it will continue indefinitely even after emissions stop. This is not supported by evidence, and in fact the paleoclimate record shows that even very large changes in climate did not run away to an unsurvivable hothouse world.

We know that adding CO_2 to the atmosphere will cause significant warming and we have a pretty good handle on how sensitive the climate is to each additional increment of CO_2. We know about the feedback loops and monitor them carefully.

We also know that warming will stop when emissions stop.

15.1.4 "Saving the environment"

The stories we tell about climate change have become tangled up in ancient narratives about gluttony and asceticism as well as modern ideas about wealth and poverty.

Many people are convinced that global warming is caused by overconsumption and that only a radical program of austerity can stop it. It's also quite common for people to lump climate change into a large mental basket of "environmental" concerns like toxic waste, plastic in the oceans, and loss of wildlife habitat.

I have argued in this course that climate change is unique and qualitatively different from other environmental problems. It is not caused by general consumer behavior but rather by the very specific practice of burning carbon for energy. Unlike other forms of pollution and environmental degradation, global warming is irreversible on historical timescales.

Global warming will get worse and worse with each bit of carbon that's burned, and then it won't get better when we stop burning carbon. Burning carbon is a one-way trip to a hotter world. In this way climate change is much worse than other "environmental" problems.

Beyond "the environment," continuing to burn carbon indefinitely would cause global economic, social, and political catastrophe. Drought, fire, floods, famine, rising seas, and waves of hundreds of millions of refugees would create conflict and chaos on a scale that dwarfs the world wars of the 20th Century. The consequences of taking this one-way trip are flatly unacceptable.

At the same time, the prescription for avoiding global economic and ecological collapse is much less disruptive than a voluntary retreat into asceticism. We are not asked to abandon modernity, only to fuel modern lifestyles differently.

Unlike the old saying regarding wealth and poverty, the climate imperative is ***not*** "to live simply so that others may simply live." Rather, we must clean up the global energy supply so that our descendants can continue to live well and avoid condemning them to an avoidable hellscape.

During the first months of the COVID-19 pandemic, we put the global economy on pause. Fossil fuel consumption dropped more than 20% from March through May of 2020, by far the biggest decrease in history. But it didn't drop to zero, as it must in a generation to avoid catastrophe.

Consider what people endured in the spring of 2020 to achieve a 20% emissions reduction: we stopped going to work and school, visiting friends and family, attending cultural events, travel, shopping, even most medical appointments. The world just stopped.

It is foolish to pretend that the whole world can achieve reductions five times as deep as we did in those nightmare COVID-19 months, and sustain that level of inactivity forever. Yet that's exactly what it would take to solve the climate problem through aggressive degrowth and nonconsumption. It's just not going to happen at anywhere near the levels required.

The need for decarbonization is much too urgent to bet our future well-being and that of our descendants on a fantasy that the whole human race will just stop doing everything.

15.1.5 "Doing my part"

It's pretty easy these days to "do my part" by reducing my carbon footprint. The temptation, promoted relentlessly by those whose wealth and power is derived from carbon combustion, is to breathe a sigh of guilt-free relief at our virtuous lifestyle choices.

But listen: *THIS IS MORALLY REPREHENSIBLE!*

Suppose I were to ride my bike to work, live in a superinsulated house powered by solar panels and batteries, enjoy a home-grown vegan diet, and eschew travel for the rest of my life.

That's all well and good as far as it goes, but it's not going to solve the climate problem. The *whole world has to stop setting carbon on fire as soon as possible*, and my own carbon footprint is a tiny drop in the ocean of global CO_2 emissions.

The work we are called to do is not to assuage our own sense of personal guilt. To the extent that we adopt good personal habits so we can feel smug about our personal carbon footprint and stop there, we have utterly failed.

15.1.6 "What about … ?"

Imagine that you're driving a car very fast down a remote highway. You've long ago passed the sign that says, "BRIDGE OUT" and now you're crashing through wooden barriers one after another. Obviously, the thing to do is to HIT THE BRAKES!

Now imagine that a passenger is insisting that you "quit smoking cigarettes because those things will kill you."

Of course, *you should indeed quit smoking!* But only if you can stop the car before it goes over the cliff.

What about the environmental costs of mining lithium, copper, aluminum, and cobalt to power a carbon-free economy? What about the wildlife habitat disrupted by constructing millions of wind turbines and solar farms? The cluttered viewsheds due to new wind and solar and transmission lines everywhere? What will we do with toxic materials when millions of batteries from electric cars are discarded?

What about all the other environmental problems besides climate change? What about plastics in the ocean and loss of biodiversity and polluted rivers and soils?

What about the rest of our social and political ills? Poverty, hunger, war, brutality, hatred, bigotry, and oppression in all its many horrible guises?

Decarbonizing the global energy supply won't solve these terrible problems. Yet we have to decarbonize anyway, or we risk a global collapse that will make these other problems much much worse.

Indeed solving the carbon/climate problem as quickly as possible is a *prerequisite* for continuing to work on all those other problems! We have to live to fight another day.

15.2 EMBRACING BETTER STORIES

We can make the world better by embracing better stories. The stories we tell ourselves and one another matter.

15.2.1 Ambiguity and aspiration

Climate change isn't binary. There's no bright line with a near side on which everything is lovely and a far side beyond which nobody can tread. It's a continuum, a slippery slope from bad to worse on which every little slip is worse than the last.

Living with this ambiguity is emotionally complicated. There is no "end game" in the climate crisis. We will never "win" or "lose." We just have to keep working to decarbonize the world so we can continue to make progress on all those other problems.

As David Roberts writes in his 2018 *Vox* essay "The Case for Conditional Optimism on Climate Change,"

> *there is no such thing as "game over" or "too late" or "screwed" or "no hope." It is certainly not the case that, as the latest slogan has it, "we only have 12 years to act." That is nonsense, even if, in some cases, it's motivational nonsense.*
>
> *The fight to decarbonize and eventually go carbon negative will last beyond the lifetime of anyone reading this post. That is true no matter how high the temperature rises. The stakes will always be enormous; time will always be short; there will never be an excuse to stop fighting.*

We aspire to a better world. Aspiration is breath. We need it to live in this world. Hope is not a thing that we have or lack. Hope is a verb. Practice makes us better at it, and aspiration is mandatory.

15.2.2 Urgency *and* Agency

In his 2021 book *The New Climate War: The Fight to Take Back Our Planet*, climate scientist Michael E. Mann argues that two key emotional ingredients for climate solutions are *urgency* and *agency*.

The climate problem is certainly *urgent*. Burning fossil fuels is a one-way trip to economic and ecological collapse that is already bad and getting worse fast. The stakes could not be higher.

But sometimes the urgency of the problem and the apparent lack of progress toward its solution robs us of the very power we need to combat it. There's a shortage of *agency* when we feel helpless and despair of decarbonizing in time to avert catastrophe.

A sense of impending climate doom can be a deer-in-the-headlights maladjustment to danger. Or it can be an ineffective psychological defense mechanism: doomers expect catastrophe so they won't be disappointed by "naïve false hope." Worse, wealthy and powerful political interests actively sow doomer sentiment to thwart public outrage about the mounting costs of burning carbon.

Deniers and doomers tend to come from opposite ends of the political spectrum, but their prescriptions are pretty much identical. Deniers pretend there's no problem, so solutions aren't needed. Doomers are convinced that there are no realistic solutions, so we might as well give up.

Both denial and doom must be rejected!

People really do have the means to wreck our world, to reverse the great swell of human flourishing that's occurred over the past several centuries. We know in great detail how Earth's climate and carbon systems work, how we've messed them up, and how to stop making them worse. We have abundant clean energy and know how to build affordable systems to match energy supply with demand without burning carbon for fuel. We calculate that it is vastly less expensive to decarbonize than to burn our future and our descendants with us.

Given the urgency of the problem and our own roles as agents of change, there is simply no excuse for such grievous and avoidable self-harm.

15.2.3 Talk to each other

In her 2021 book "*[Saving Us: A Climate Scientist's Case for Hope and Healing in a Divided World](#)*," climate scientist Katharine Hayhoe argues that the very best thing we can do about climate change is to talk to one another about it. She's not recommending empty talk, but rather acknowledging that people spend time talking with each other about things we care about, and that interactive engagement leads to action.

Hayhoe writes:

> *What works is talking about how climate change affects us here and now, in ways that are relevant to our lives today. And then we start to look for solutions, like reducing food waste and eating more plants, biking or walking instead of driving when we can, urging cities and schools and universities to transition to cleaner energy, and so on. Then people will feel empowered and keep pushing for more change.*
>
> *Our brains are wired this way, to associate forward action with a reward, not avoiding harm. When we produce hope, not dread, it encourages people to act.*
>
> *The goal of the conversation is not to tell people about climate change, it's to expand the number of people in the conversation. So my challenge to you is to talk about climate*

change with the people around you. Talk with them about why it matters and work together to find solutions that you can do on your own or with your community.

15.2.4 Focus on decarbonizing energy

Preventing climate disaster by decarbonizing energy is a much smaller ask than "saving the environment." Cleaning up the electricity supply and electrifying the global economy is definitely feasible and affordable, and it doesn't require politically divisive calls for radical austerity. Rather than shaming people for wanting light, heat, and transport, decarbonizing energy separates goods and services from catastrophic harm.

Beside preventing climate devastation, massive deployment of clean reliable energy at global scale would go a long way toward solving other problems as well. Elimination of fossil fuel combustion would dramatically clean up the air and water, improving human health and saving millions of lives each year. Abundant, clean, inexpensive energy would be a boon to societies in the Global South that struggle to feed and house people. Distortions of political interests that carve out special treatment for fossil fuel producers would be weakened, preventing rogue countries from threatening to withhold precious energy resources. Large-scale refugee crises driven by climate disasters would be curtailed.

Focusing climate action on decarbonizing energy allows a positive emphasis on accomplishment and success rather than a negative emphasis on forced austerity. Instead of "coming for your hamburger," climate solutions can provide opportunity, jobs, and prosperity. Climate solutions can buy precious time for other positive changes while building confidence and momentum.

15.2.5 Build climate solutions from the bottom up

One of the most frustrating aspects of climate policy is that emissions continue to rise after more than 30 years of constant international diplomacy under the umbrella of the United Nations Framework Convention on Climate Change (UN FCCC). There has been important progress, and it's great that nearly every country has formally agreed to stop warming. But the framing of international negotiations as a way to pay for austerity measures rather than opportunity has led to near stalemate between richer and poorer countries.

Economists have long assumed that local and regional climate mitigation is irrational, because the "costs" of emission reductions are borne locally but the benefits of avoided damages are realized globally. Local policy is assumed to make sense only if the benefits pay off inside the local domain. The so-called "free rider problem" presumes that nobody will undertake expensive mitigation measures that would mostly benefit everybody else.

Paradoxically though, local and regional climate mitigation has been far more aggressive and successful than international policy. Local and regional stakeholders recognize the existential threat of economic and political collapse associated with global warming and have proven more

agile than the sclerotic UN FCCC. Partly this reflects the unexpectedly rapid progress of clean energy technology, which has completely changed local incentive structures.

Emissions trading schemes in the European Union and China have effectively put a price on carbon even without a strong international enforcement mechanism. Greenhouse gas emissions peaked in the EU decades ago even as income rose. Individual European countries have cut emissions faster than the EU, with emissions falling 50% in the United Kingdom since 1970. The US State of California has far more stringent emissions targets than the US as a whole, planning to eliminate the sale of combustion-based cars and trucks by 2035. The US State of Colorado plans to generate 100% of its electricity without combustion by 2040. In Norway, fewer than 10% of cars and trucks sold in 2022 burn fuel. The City of Fort Collins Colorado is on track to cut CO_2 emissions 80% below 2005 levels by 2030. All of these smaller units of governance have achieved policy success that far outstrips the larger polities in which they are embedded, precisely contradicting decades of expectations by academic climate economists.

Local, state, regional, and national mitigation policies demonstrate political feasibility and build political momentum for international negotiations. As clean energy costs continue to plummet and fossil fuels drive punishing price inflation, market forces will continue to disrupt the combustion-based economy.

15.2.6 Individual *and* collective action

As people learn about the seriousness of the climate problem, they understandably want to do something to help. Public opinion surveys consistently show huge majorities favoring clean energy and other climate mitigation policies. I am asked constantly to recommend actions that people can take as individuals and families to combat global warming.

The simple answer is that everything we do to reduce our consumption of carbon-based energy will help. Simple suggestions for reducing carbon footprints range from easy stuff like telecommuting or eating meat less frequently to medium-sized asks like less airline travel to big stuff like energy retrofits of our homes.

But as we learned during the COVID-19 pandemic, even drastic measures like prolonged lockdowns don't even come close to stopping the rise in CO_2. The best part about individual action is that it makes us think about the problem and gives us something to talk about with our friends and acquaintances. And as Katharine Hayhoe has explained, talking with one another is the most powerful way to spur systemic change.

There's just no getting around the fact that the world will continue to warm until the global energy system is decarbonized. So we need all those individual actions to spur local change that builds momentum for global change.

Every time we buy goods and services, we send a market signal that we want more. We are voting with our wallets and credit cards. When we go to local events and ask questions and raise our voices at public meetings, we send political signals to our fellow citizens. When we vote for

public servants, we exercise an important civic power. And when we organize into citizen groups, we leverage our political power even further.

The unexpected way that local climate mitigation has outstripped international negotiations shows the power of individual opinion and emphasizes the bottom-up energy transition.

15.2.7 Generations of opportunity

Rather than a doomed and despairing generation, today's youth have an unprecedented opportunity to create social and political space for themselves and their descendants to live in a better world. Doing positive things builds confidence to do more, and success begets success.

Building climate solutions will be a lot of work and therefore creates a lot of opportunity. Just as my grandparents' generation prospered by retrofitting ancient cities with indoor plumbing and electricity, the next generations will have plenty of work building new energy infrastructure all over the world.

Billions of people still suffer from energy poverty. Rather than trying to stifle their aspirations, it is important to provide clean, cheap, reliable electricity to the huge numbers of people who need it. Building clean infrastructure will drive demographic transitions toward higher quality of life in the Global South. Climbing learning curves for matching energy supply and demand will improve lives everywhere.

Building a better world economy isn't just for engineers and technicians. Entire cultures will engage in climate solutions. No matter what your chosen field, the world needs you to help solve this urgent problem. We will need accountants and artists and writers and managers and musicians and marketers to be on board.

15.2.8 Toward a better world

Building a global economy that runs on clean affordable energy won't solve all the world's problems.

People have suffered from oppression and inequity and hatred for millennia.

Even when we can power our societies without burning carbon, we will still have plenty of work to do cleaning up other forms of pollution. Biodiversity is critically threatened, and ecosystems are stressed by rampant overdevelopment. Sustainability of natural and social systems requires more than just avoiding the impending climate catastrophe.

None of our problems will be any easier to solve if we fail to repower the world economy without carbon combustion. Nearly all other problems are exacerbated by global warming.

Decarbonizing energy is a feasible, affordable near-term goal that paves the way to tackle other problems.

We can do this.

We must do this.

So we will do this.

15.3 WHAT YOU CAN DO

- Talk to one another every chance you get!
- Vote every chance you get!
- Organize for local and regional clean energy projects
- Work for organizations that support clean energy
- Eat meat less frequently and in smaller portions
- Shop well to waste less food
- Take fewer trips by airplane
- Telecommute, ride your bike, and walk more
- Use public transit
- Weatherseal your home
- Drive an electric car (used is much cheaper than new)
- Invest in clean energy

15.4 RECOMMENDED ADDITIONAL READING

The Case for Conditional Optimism on Climate Change. David Roberts, 2018. Vox.com.

Saving Us: A Climate Scientist's Case for Hope and Healing in a Divided World. Katharine Hayhoe. 2021. Atria/One Signal Publishers. 320 pp.

All We Can Save: Truth, Courage, and Solutions for the Climate Crisis. Ayana Elizabeth Johnson and Katherine Wilkinson (Editors), 2021. One World. 448 pp.