

K44: Strategies – Policy

Richard Nolthenius, PhD

***Laissez Faire* Free Markets Cannot
Solve Climate Change**

**Legally Mandated Global Policy,
Enforced by Governments, is Essential**

The Why, and How

“For decades, scientists and policymakers have framed the climate-policy debate in a simple way: scientists analyze long-term goals, and policymakers pretend to honor them.

Those days are over.

Serious climate policy must focus more on the near-term and on feasibility. It must consider the full range of options, even though some are uncomfortable and freighted with risk.”

- Xu, Ramanathan, and Victor ([Nature 2018](#))

Policy Makers – installed and beholden to the corporate lobbies.

- **This is not mere political grumbling. Peer-reviewed journal studies show it is true. We'll examine this, here.**
- **But First - Let's examine the nature of Capitalism: the ruling political / economic paradigm since the dawn of the Fossil Fuel era.**

The Fatal Premise Underlying *Laissez Faire* Capitalism

- *Laissez Faire* capitalism (LFC) is built around a central premise:
- A society of individuals freely pursuing their own perceived self-interest best guarantees the greatest welfare for society as a whole
- It is so beautifully, seductively elegant. Like a symmetry principle in physics – it's so beautiful, the temptation is to believe it just HAS to be true. Yet....

This premise has no hope of being valid in a finite world of diminishing resources

- **Because what this principle actually guarantees, is the most rapidly efficient exploitation and degradation of Nature by those with the most economic power to effect that exploitation**
- Advocates of LFC will say that a virtue of LFC is that it does not try to impose any value system. What people are willing to pay for, they get, regardless of anyone's moralizing, and they get it in the fastest and most efficient way. True...
- But, does this lead to the greatest long-term welfare for society? No. Any more than insatiable lions devising ever more unstoppable attacks on increasingly crippled lamb populations guarantee the long-term welfare of the lions, or obviously the lambs.

Laissez Faire Capitalism is claimed “value free”, Yet...

- This “virtue” is in fact a fundamental flaw for the following reason –
- Human beings have a specific nature, and our long-term actual welfare is therefore constrained to lie within a narrower set of choices which are in harmony with our specific nature, and the larger environment, and not necessarily the same choices as those which motivate our immediate gratifications.

We have the POWER to disobey what is, in fact, in our best interests, and we do it all the time.

- Now that we have overfilled the Earth, we simply can't afford to continue doing so. We can't afford to continue obeying...

Nolthenius' First Law – “People Learn the Hard Way”

- We saw this in Chapter 0

A Unique Time in Human History

- Human ancestors evolved about 6 million years ago. Modern *Homo Sapiens* about 200,000 years ago. Even taking the shorter figure, that's about 6,666 generations
- Here, in the 6,667th generation, we're butting up against the limits to growth on a finite planet, as we saw in K42.
- Our "selfish genes" have evolved a reward chemistry aimed for growth, for out-competing and even killing other species, and pillaging Nature for our dominance and our economic security in this world. Pretty well describes Capitalism's attitude.
- But Nature also evolved in us a forebrain, with the **Anterior Cingulate Cortex** capable of abstracting principles from observations, projecting a future, for planning, for error-detection.
- **Will we use it now that it is most needed, or will we continue to succumb to the older impulses?**

Will we continue to...?

- *“...be persuaded to spend money we don't have, on things we don't need, to create impressions that won't last, on people we don't care about”*
- Energy economist [Tim Jackson, here](#)

It's been said *"It is easier to imagine the End of the World than the end of Capitalism"* ([source](#))

- One wonders.... will we [get both](#), the second right after the first (said only half in jest)?

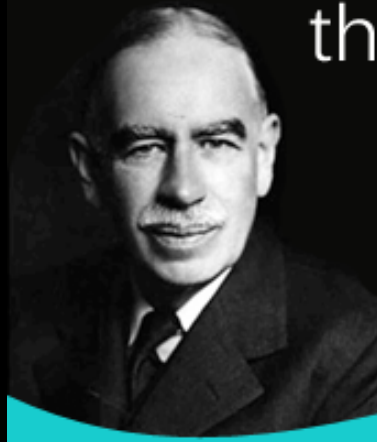
The Irony of Ayn Rand

- She wrote her magnum opus “Atlas Shrugged” hoping to inspire the youth of her day – the 1950’s and ‘60’s – to sweep away socialism in favor of *laissez faire Capitalism* and a world of never-ending growth in human triumph.
- Her acolytes have captured the Republican Party (which as of the late ‘80’s still acknowledged the reality and danger of climate change), but, fed by blind ideology and corporate money, have now paralyzed any climate policy action.
- Her never-recanted hatred of environmentalists as “ignorant unwashed hippies” (her words) has remained in the Objectivist (and now Republican) psyche as a visceral, emotional choke point, stopping all thought of what that hatred really means.

- In Rand's "**Atlas Shrugged**", it was the "Men of the mind" who went on strike against a corrupt society which assumed they (Men of the mind) would always "*DO something*" (*villain James Taggart – a catalyzing moment in the novel*) to save them (the "parasites" of society) no matter how vilified and abused the "Men of the mind" were treated.
- Now we have seen the inverted spectacle of Rand's acolytes enthusiastically supporting the Trump administration as it vilifies, threatens, and commits unconscionable abuse against science and scientists while simultaneously assuming they'll always "*DO something*" to save us from ourselves, and supply us with gizmos, techno-wonders, and profits, to increase their economic / political power.

I can't help wondering: will the historians of the future be describing the pivotal role Ayn Rand played in having destroyed the very Civilization on Earth she supposedly hoped to make triumphant? There might still be time to change course.

"The biggest **problem**
is **not** to let people
accept **new ideas**,
but to let them **forget**
the **old** ones."



John Maynard Keynes
British economist
(1883-1946)



"Capitalism is the extraordinary
belief that the nastiest of men for the
nastiest of motives will somehow
work for the benefit of all."

John Maynard Keynes

But - Capitalism is not Immoral, it is Amoral

- Immorality is the perverse pleasure taken in flaunting actions and behavior which violate valid moral codes.
- Amoral actions are actions which take no recognition of morality; it doesn't enter the equation. The actions may be moral, or not.
- The single-minded goal of capitalism is to accrue money to the capitalist and the institution (*e.g.* corporation) that he acts for, and it is spectacularly efficient at doing this.

A Good Analogy for Capitalism



“Listen, and Understand...”

- ***“...that Terminator is out there! It can't be bargained with! It can't be reasoned with! It doesn't feel pity! Or remorse! Or fear! And it absolutely WILL not STOP. EVER! Until you are DEAD!” (video)***

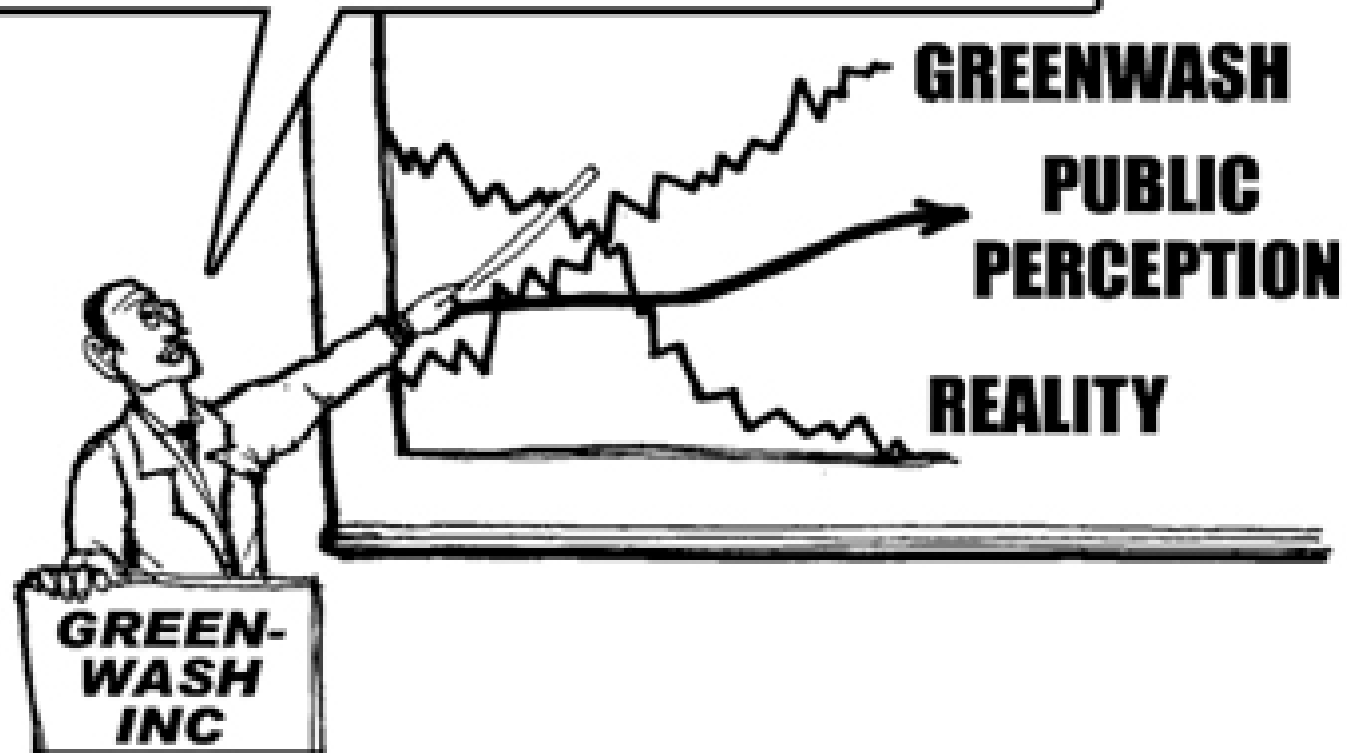


To Paraphrase the film's character, Reese, for Capitalism...

- *“Capitalism is **OUT** there!”*
- *“It doesn't **CARE** what is good for Earth's future!”*
- *“It doesn't **CARE** what is good for your children's children”*
- *“It doesn't **CARE** what laws you want!” (see Gilens and Page 2014, later in this Presentation)*
- *“It doesn't feel pity for those it may impoverish”*

It doesn't feel remorse for its lies,

*YOU CAN IMPROVE PUBLIC PERCEPTION BY
OFFSETTING THE REALITY OF YOUR PROJECT
WITH MORE INVESTMENT IN GREENWASH INC*



It doesn't feel remorse for its phony salesmanship

CODE GREEN

!@!



HOW MUCH MARKETING DO WE
NEED TO SAVE THIS SITUATION?

It doesn't feel remorse for its outrageous violations of science

Independent Science Shows Harmful Effects from BPA, while Industry Science Shows None

A recently-published review of scientific studies shows that, in the last 7 years (through November 2005), 151 studies on the low-dose effects of BPA have been published.(37) None of the 12 studies funded by the chemical industry reported adverse effects at low levels, whereas 128 of 139 government-funded studies found adverse effects. These many studies were conducted in academic laboratories in the U.S. and abroad. Even the 12 industry-funded studies have flaws, however. Of the industry studies, two had their positive controls fail—an indication that the entire experiment had failed, not that BPA had not caused an adverse health effect.

	<i>Adverse health effect</i>	<i>No effect</i>
<i>Plastics Industry funded</i>	0	12
<i>Government funded</i>	128	11

Another industry study concluded BPA caused no adverse effect, but an independent analysis of the experiment's data by scientists convened by the National Toxicology Program of the U.S. Department of Health & Human Services concluded that in fact there was an adverse effect. Industry scientists had misreported their own results. The chemical industry relies on an incomplete review of scientific studies by an effort funded by the American Plastics Council at the Harvard Center for Risk Analysis. The panel funded by the American Plastics Council only considered 19 studies in concluding in 2004 that the weight of the evidence for low-dose effects of BPA was weak.(38) As of November 2005, there were 151 published studies on the low-dose effects of BPA.

**It doesn't feel pain for what it does
to the Earth**



It doesn't feel shame at the injustice it delivers upon our most vital, lifesaving heroes

THROTTLING AND NET NEUTRALITY —


Verizon throttled fire department's "unlimited" data during Calif. wildfire

Fire dep't had to pay twice as much to lift throttling during wildfire response.

JON BRODKIN - 8/21/2018, 12:49 PM



It Will Fund Dis-information Campaigns



He's one of the busiest men in town. While his *diary* may say *Office Hours 2 to 4*, he's actually on call 24 hours a day.

The doctor is a scientist, a diplomat, and a friendly sympathetic human being all in one, no matter how long and hard his schedule.

According to a recent Nationwide survey:

MORE DOCTORS SMOKE CAMELS THAN ANY OTHER CIGARETTE


DOCTORS in every branch of medicine — 113,587 in all — were queried in this nationwide study of cigarette preferences. These leading research organizations made the survey. The gist of the query was: "What cigarette do you smoke, Doctor?"

The brand named most was Camel!

The rich, full flavor and mild mildness of Camel's superb blend of choice tobaccos seem to have the same appeal to the smoking tastes of doctors as to millions of other smokers. If you are a Camel smoker, this preference among doctors will hardly surprise you. If you're not a Camel smoker, try Camel's now.

Your "T-Zone" Will Tell You...

T for Taste...
T for Threat...
That's your proving ground for any cigarette. See if Camels don't suit your "T-Zone" to a "T."



CAMELS *Castles Tobacco*

It will Slash the Budgets to, and Duct-Tape the Mouths of, its Own Scientists

THE HISTORY OF

Exxon's Climate Denial

Exxon has understood the science of climate change for at least the last 50 years. It has done nothing to stop the problem.



EXXON KNEW

1979

Major fossil fuel companies met regularly as part of a task force to discuss the science and implications of climate change.

1982

Roger Cohen, director of the Theoretical and Mathematical Sciences Laboratory at Exxon wrote a memo stating "Temperature increase of this magnitude would bring about significant

1983

Exxon cut funding for climate research from \$900,000 per year to \$150,000. Exxon pivoted from the cutting edge of early climate change science to the forefront of climate denial.

1996

Mobil engineers noted that "An estimated rise in water level, due to global warming, of 0.5 meters may be assumed" in their planning for exploration and production facilities

SHARE HIS SHAME!

Senator
Tom Cotton
(R-AR)

\$174,000 salary

\$1,900,000 from the NRA.

\$960,000 from Israeli lobby

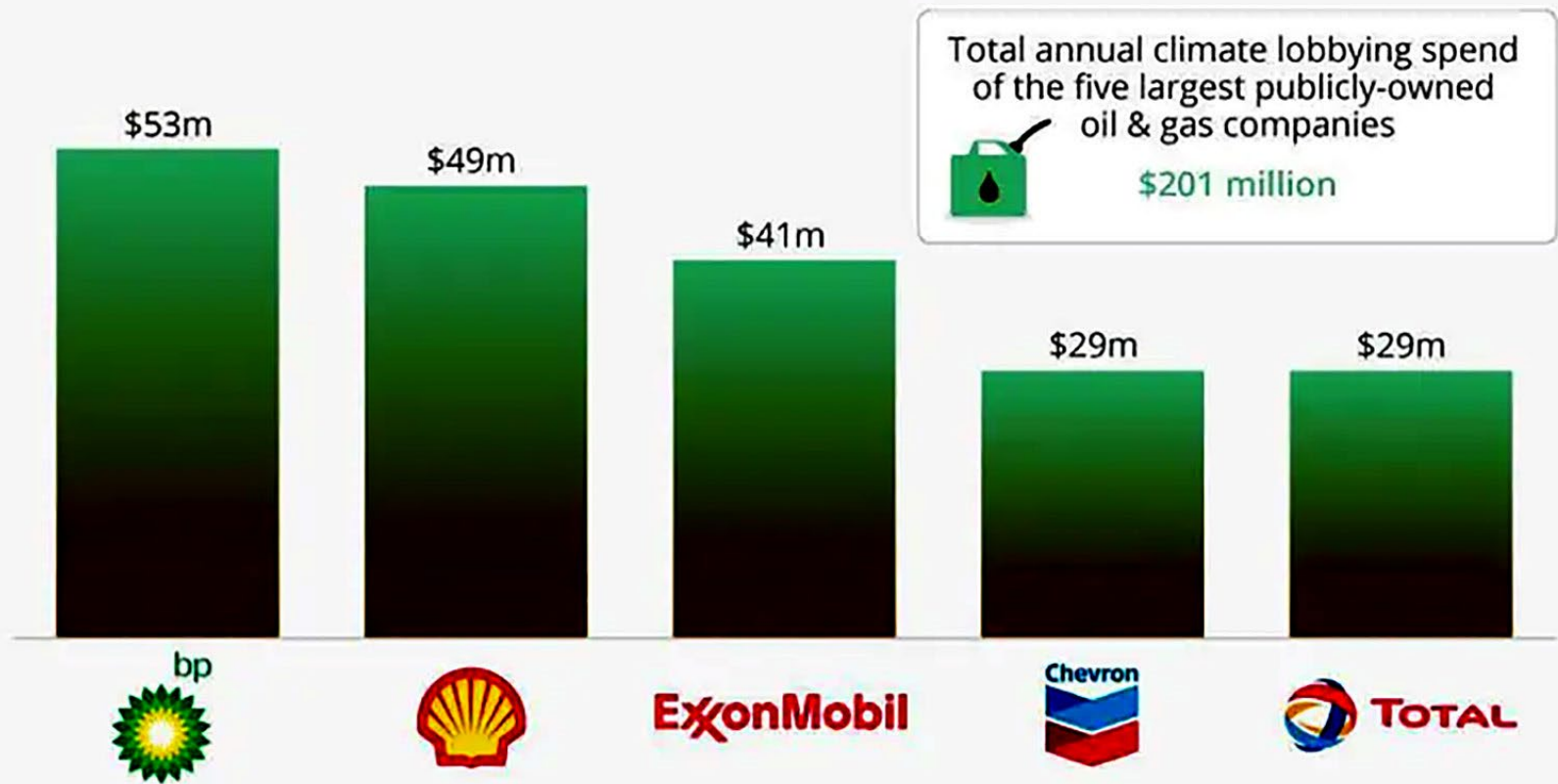
>\$5M from the Koch Brothers

**Tell me again
who he represents?**

**It will Buy
Politicians**

It Will Spend Hundreds of Millions Per Year Lobbying Congress Against Climate Action

Annual expenditure on climate lobbying by oil and gas companies*



* As of 2019. Climate lobbying means spending to delay, control or block policies to tackle climate change.

It Will Parade its “Green-ness”, while collecting \$Green from carbon offsets that aren’t offsets



David Wallace-Wells @dwallacewells · Nov 24, 2019

“A 2016 study found that 73 per cent of carbon credits provided little or no environmental gain, as they supported projects that would have happened anyway. That figure rose to 85 per cent of projects under the UN’s Clean Development Mechanism.” [ft.com/content/e20000...](https://www.ft.com/content/e20000...)

9:45 AM · Feb 16, 2021 · Twitter Web App

*“Solely in terms of temperature I suggest offsets are likely to be **worse** than doing nothing”*

– Climatologist Dr. Kevin Anderson ([source](#))

Whether it produces valuable products good for the long term health of people and the Earth..

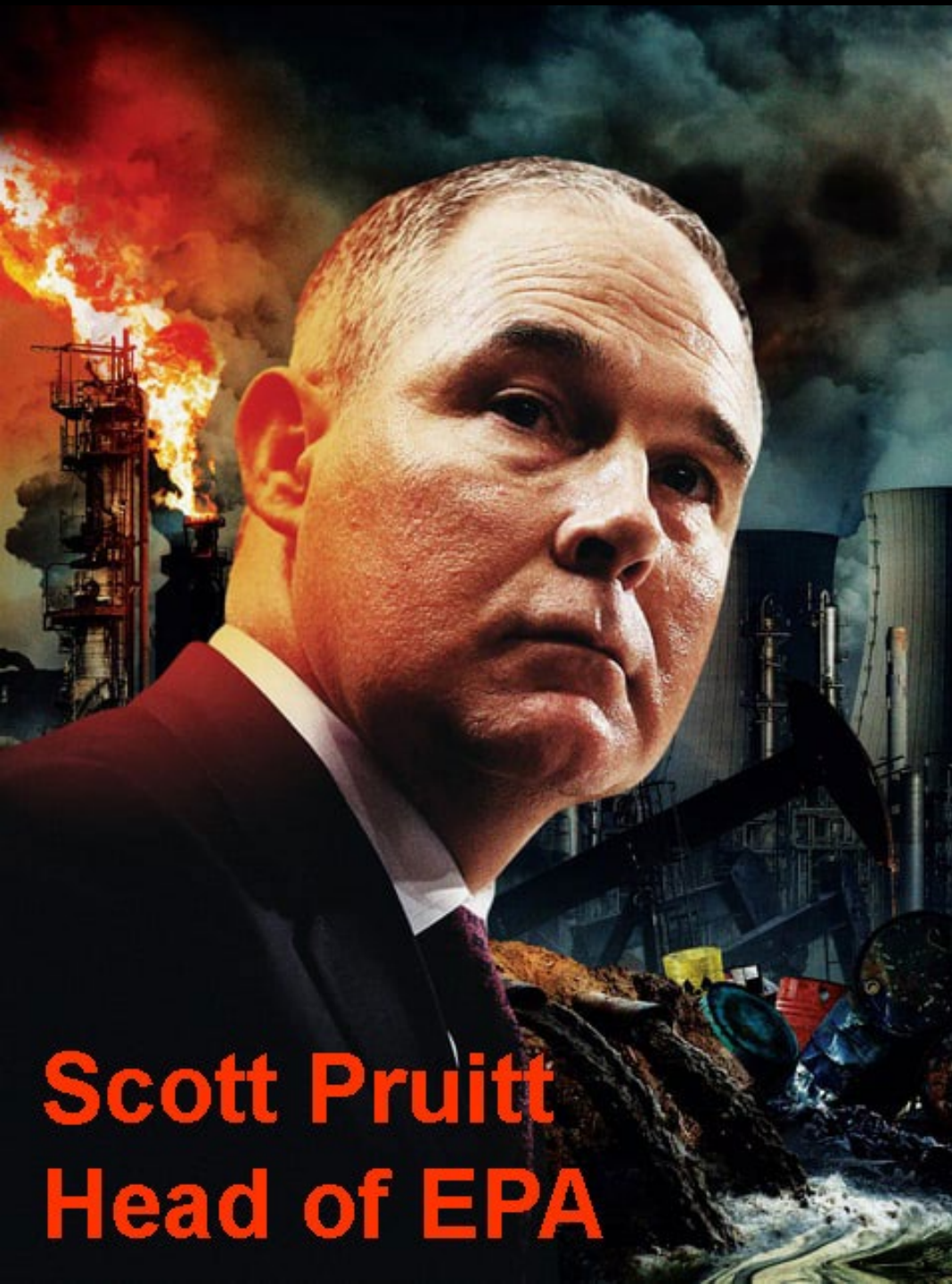


**Or Irreparable Scars Generating Poisons
that Pollute the Entire Planet... There is
ONLY ONE PRIORITY-**



**Its Singular Mission: to ACCRUE MONEY to the Corporations
and Major Shareholders (CEOs, Hedge Funds...)**

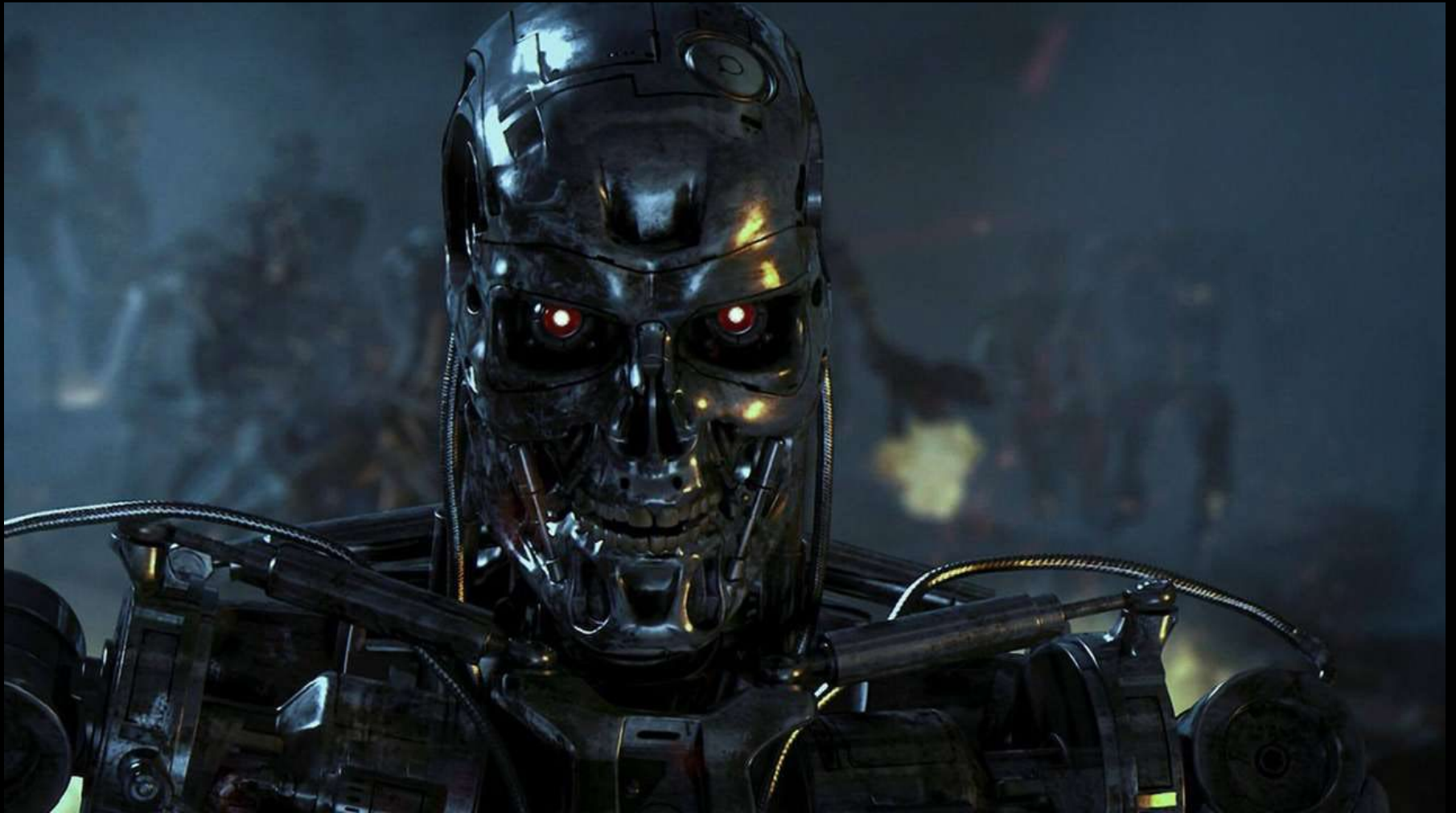




Scott Pruitt
Head of EPA

“It’s What
it DOES!
It’s ALL...
it
DOES!”

***“And it Absolutely WILL not STOP!
EVER! Until We Are DEAD!”*** (or, can't
pay anything more, whichever comes first)



Sarah (desperately): “...Can you stop it?!”

Reese (dubious): “...*I don't know... I don't know*”



Can We Stop it? Can We Stop Capitalism's Relentless Devouring of the Landscape, then Us?

- I don't know.... within an unquestioned paradigm of eternal economic growth, enforced by relentless psycho- and neuro-manipulation and timid Progressives... I don't know – I fear it may not be possible.
- A weak Federal government bought, and thoroughly manipulated by the Economic Elites (Gilens and Page 2014)? ...a Congress that is empowered to make the very laws that control Congress, within this larger kleptocracy?
- Even an IPCC manipulated by the corporations?
- Within that paradigm, I am skeptical it will be stopped.

***“The Terminator”* Parallel Turns Out Closer Than I’d Thought**

- After I wrote this section, in early 2018....
- ...In November 2018 [this article in “The Economist”](#) appeared, and the parallels between **“The Terminator”** and **“The Corporation”** is eerily closer than I knew.
- ***It’s “Worrying”***, as the article begins

We cannot afford to be “Value-free”. This is where climate and commons come in

- The Earth is a world of unavoidable commons: the air, the oceans, the ice caps and forests, and ... climate
- The diffusion time for molecules in the atmosphere is just a few weeks. Everyone’s CO₂ becomes everyone else’s CO₂ very quickly
- Climate is a globally interconnected system
- Storm tracks and ocean currents are continuous across the entire planet, across national boundaries
- These facts cannot be changed by trying to privatize them, as some Libertarians have suggested we do with all Earth’s commons

On the other hand - Be Careful

- There is nothing inherently evil about the idea of forming a corporation from private money to build an enterprise which is too big to fund individually, and do so quickly in order to be competitive (if the enterprise does true “good”).
- There is nothing inherently evil about the idea of a market of equity values determined by the diligence of individual investors, as motivators to help fund the enterprise.

There is nothing inherently morally wrong with the idea of a free market (to the largest extent consistent with society's welfare)

- ...giving larger rewards to those who make the greatest **positive** efforts and take the greatest risks in providing new enterprises for the **genuine** benefit of Earth and its people.
- Forming an enterprise which ultimately makes the world better requires funding, and financial reward is an important and justifiable part of the motivation to accomplish this.

And going farther, there IS something dysfunctional and wrong with enforcing exact wealth equality between all people, regardless of their contribution to human well-being.

- Economic reward is a prime incentive to do good. Communism was and will remain, a dismal failure. Even if it were attempted by noble leaders, it is in gross contradiction to our very nature.
- “Doing well by doing good” is ... inherently GOOD, because it economically motivates doing good!
- BUT – you have to be doing true GOOD, in harmony with actual healthy human and environmental nature, not run by short-sighted psychopathologies (see the [Psychopathologies of Climate Denial](#))

***Laissez Faire* Capitalism guarantees accelerating depletion of finite resources, and destruction of commons through an amplifying feedback**

- Witness the ruthless hunting of the last rhinoceroses both because of, and causing, the steep rise in the price of their horn as supply disappears, and elephants for their tusks. An amplifying feedback of depletion, destruction, and death.
- Witness the spectacle of bluefin tuna selling for tens of thousands of dollars apiece, (and now over half a million dollars) thus motivating the accelerating pace at which the large fishes of the sea are relentlessly hunted to the last.
- And most tragic of all perhaps – witness the air and oceans being treated as free waste dumps by corporations who have bought their governments, and are being heavily subsidized by taxpayers to do it.

The Tragedy of the Commons

- Unalterable commons – the oceans, air, ground water, ice caps, great forests, climate – will continue to suffer accelerating degradation because it is financially advantageous for one company to exploit them completely before another one can ([Hilbe et al. 2018](#), discussed [here](#)).
- [This](#) new study in 2018 confirms that climate disasters must get much worse before any near-term financial motivations might lead to significant climate action.

Libertarians have argued that this is precisely why ALL resources should be privately owned

- ...so that the owners will have economic incentive (they'll charge you) to protect the long-term value of their assets rather than squander them before someone else beats them to it.
- **This is False. Their time horizons at best include a standard 3% or higher annual discount rate on the Future: Your grandchildren, and their world, mean ~nothing to them.**

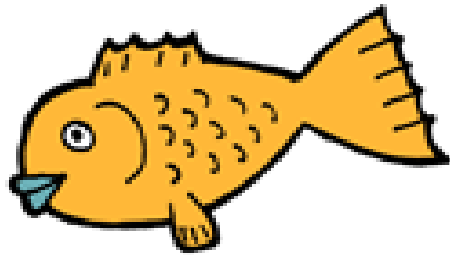
Corporations did not create the great forests, the air, the oceans, nor the stable climate we evolved in...

- Contrary to Ayn Rand's belief – They have value just as they are - in their pristine state, not merely as raw materials to be chewed up for industry.
- These were given by Nature to all people, not merely to be dismembered for one generation of one species, but for all species, and all time, and our spiritual renewal as well.
- Do Libertarians swell with joyous anticipation at the image of people standing in line and paying a stiff toll just to walk into a dwindling remaining stretch of slightly less trampled Nature? Is this their vision of Utopia? Doesn't this reveal something essential and tragic about their souls?

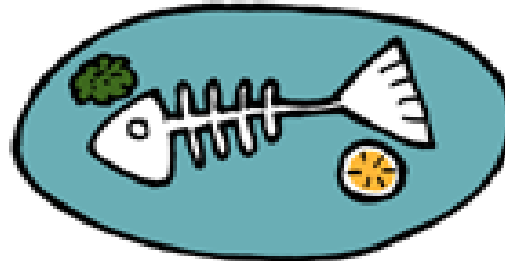
Witness Pacific Lumber Co...

- ... clearcutting of massive redwood forests as the price of lumber rises due to overharvesting-induced scarcity, which itself accelerates lumber prices in a vicious circle of destruction.
- A more accurate wording of what Libertarians advocate, is that corporations should be able to **hold for ransom** Nature's forests, atmosphere, and oceans.
- ***“If people want clean air, clean water, and healthy forests, they should have to pay for it”
(paraphrasing Milton Friedman) – say Libertarian purists***

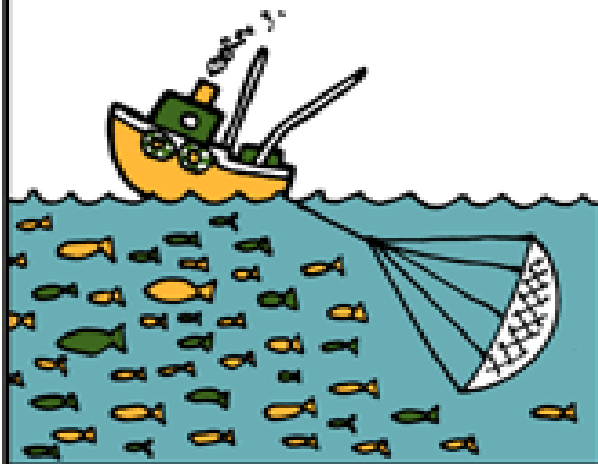
GIVE A MAN A FISH...



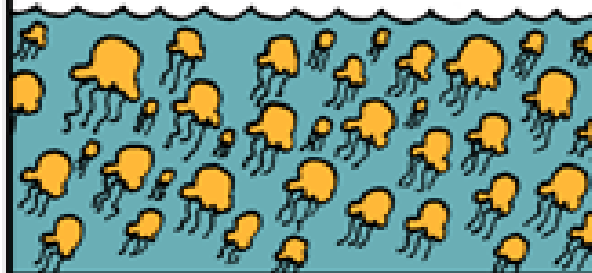
AND HE'LL FEED HIMSELF FOR A DAY.



TEACH A MAN TO FISH...



AND HE'LL SYSTEMATICALLY SCOUR THE OCEANS CLEAN OF ANYTHING EDIBLE.



A Fatal Human Flaw in the Climate Crisis: People Make their Decisions “On the Margin”

- We all learned in Econ 101 that *“People make their economic decisions ‘On the Margin’”*
- In other words, we decide based on the perceived **added increment of value** of making decision X vs. decision Y, not the total summed value extrapolating that decision on into the past and future.
- The PERSONAL utility of being able to drive 5 miles to the grocery instead of walk those 5 miles, is very significant indeed. Yet the marginal cost - 5 lb of CO2 you generate in your car by driving those 5 miles - diluted over the entire globe, is vanishingly irrelevant to your and everyone’s else’s climate.
- It’s the personally rational (even if globally irrational) decision to drive, vs. walking or biking, for our billions of people.
- A similar argument holds for the destruction of all of the different commons of this world

External vs. Internal Costs

- **Internal costs** - the name we give to those costs which are directly involved in producing goods and services and for which the company is responsible, and for which they must charge a price which will cover those costs, as well as a profit margin on top, to motivate their engaging in the business in the first place.
- **External costs** are those costs that are imposed on users or on the society as a whole which are NOT paid by the company, and are therefore costs they feel no financial motivation to reduce (and certainly no moral motivation: **See K40b**).
- **External costs** would include: air/water pollution resulting from manufacturing, damage to users which are difficult or impossible to sue for, long-term health damage from health products for which cause/effect is perhaps only 50-80% certain and therefore not likely to cause legal liability. And for climate; GHG production, loss of habitat for other species, increased wildfires and damage, rising sea levels destroying coastal property... etc.

Externalized Costs Must be Converted to True Costs to the Corporation, to motivate change

- Externalized costs is a vast and pervasive flaw in the *laissez faire* paradigm. What would fossil fuel companies have to charge for their products if they were forced to pay for...
- --- the destruction of the 217,490 miles of current Earth coastlines? (In the US alone, coastal homes alone, will be destroyed totaling 1,000 billion dollars, according to Zillow. This neglects infrastructure and business losses.
- ---the costs of insurance premiums, and cancellations?
- ---the costs of wars to be fought over food and water as suitable farmland both shifts and shrinks?
- ---the cost of destroying the ocean's ecosystems through acidification by CO₂?
- --- Compensating most of the world's population for rendering uninhabitable the land they live on now?
- --- History shows that biodiversity, once lost, takes on average about 10 million years to recover.
- **Shall we start the bidding at, say, \$Infinity?**

The End of the Fossil Fuel Industry?

- This list could go on....
- What if those costs were then compensated, dollar-for-dollar, directly to those who will suffer those costs - all of us, and our children?
- This would provide overwhelming incentive to drastically cut CO2 emissions and scale up non-fossil energy sources such as wind, nuclear, and photovoltaics.

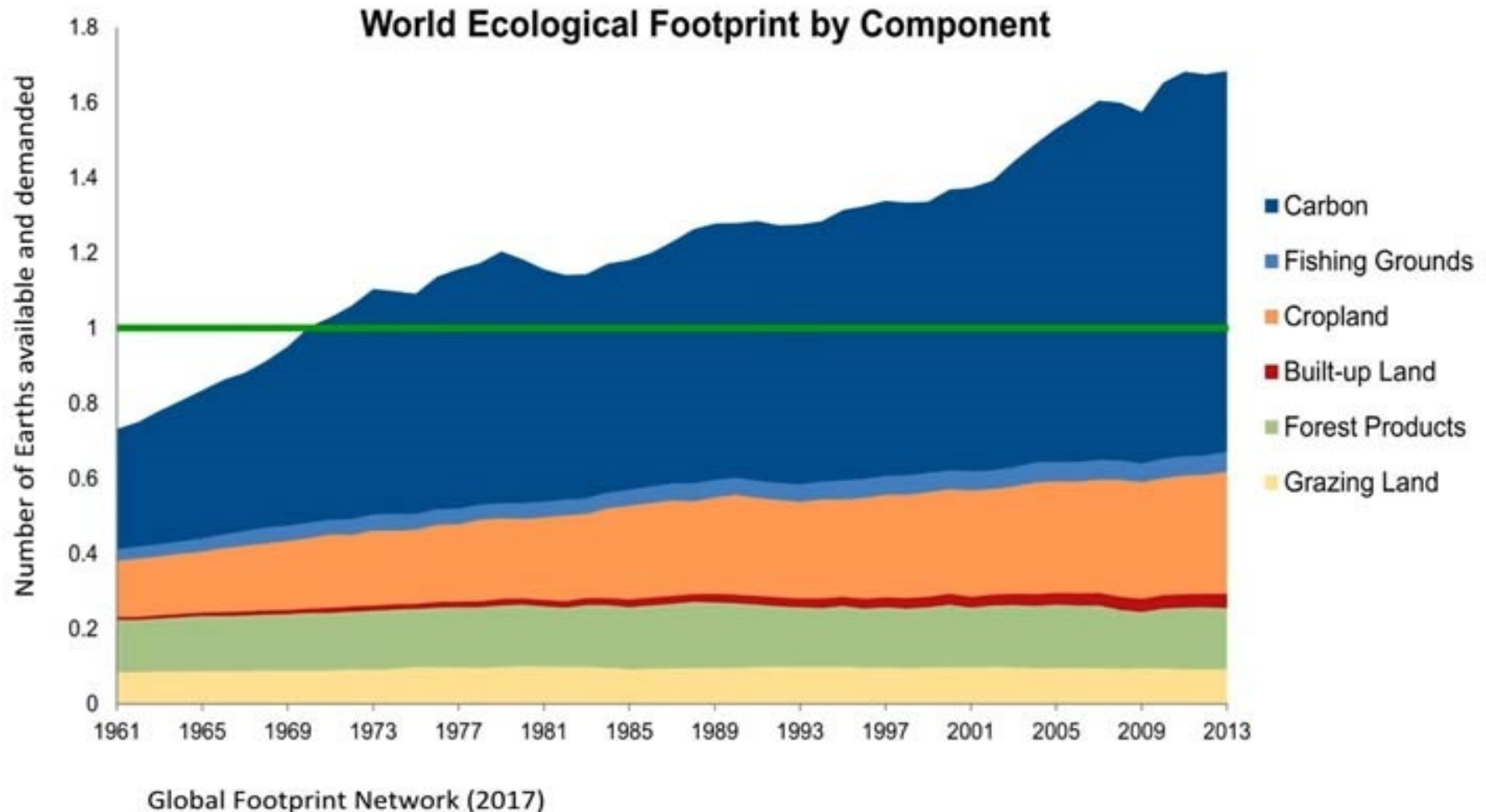
Even using standard macroeconomics' cynically high discount rate of 3% per year...

- (3% said another way: you put a value on the future which halves every 24 years, and the year 2100 you hardly care about at all), and mild assumptions about the costs of crippling climate (\$105/ton CO₂, rising 2.3%/year), this paper [Hope et al. \(2015\)](#) finds that internalized climate costs would end the fossil fuel business, as all profits would disappear for all years and all companies studied (except for Exxon in 2008, when oil prices peaked).

Can we even motivate, through price, the rapid ending of carbon emissions?

- First, there is one more essential ingredient to add before understanding the wisdom of the proposals which I will present...
- Our finite Earth has over 90% of its arable land already converted to human use - agriculture in its various forms
- Ships scour virtually every cubic mile of ocean with highly efficient factories-at-sea and have already removed the large majority of large fish. Why? Because if THEY don't get those few remaining high value fish, some competing ship will (the Tragedy of the Commons).

We're outstripping the ability Earth to absorb our massive footprints. It would take 1.7 Earth's (as of 2013) to sustainably handle our demand.



It is consumption itself which must be dis-incentivized through the price mechanism – most especially carbon-emitting consumption

- The **carrying capacity of the Earth** with sustainable technologies (recent estimate: 1.5 billion) is far less than our actual population of today. We are overdrawn and getting more so every day.
- We simply cannot expect to continue having all people across the Earth consume more and more. Envy and economic inequality must all take a back seat to this stark physical fact.

Economic Motivation

- The temptation is for people to assume some smart people somewhere are going to figure out how to let them continue their consumptive lifestyles by simply making those lifestyles less carbon-intensive with some whiz-bang Big Science.
- This is fatally false, as we saw earlier in this course (Generalized Jevon's Paradox, in **PowerPoint K43 - The Thermodynamics of Civilization**). Energy efficiency itself creates *faster* depletion, not slower.
- Without price involvement from everyone, too few people will be motivated to do anything significant to de-carbonize.
- Oil is spectacularly energy-dense and we've already invested massively in the infrastructure to utilize it. Replace? Slow, Costly Tipping points are being crossed NOW, with "hot-house Earth" at great risk even if we get more serious about de-carbonizing.

How Draconian Must Policy Changes Be?

Are any of the usual strategies out there significant enough to halt climate change?

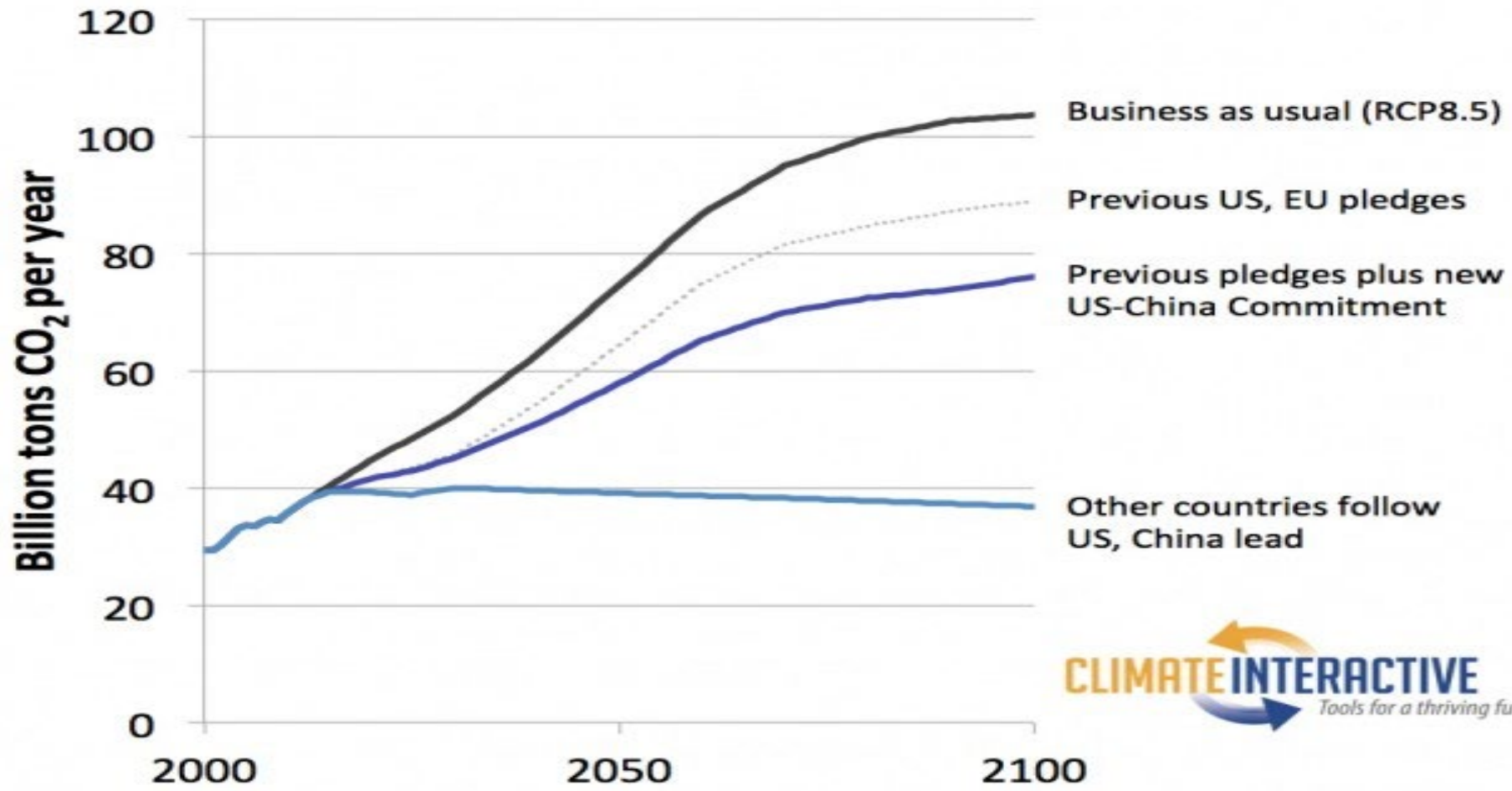
- We can't advocate for policy action properly until we know what the climate GOAL is, and know what the **physics limitations** are, to achieving that goal.
- By spending valuable human energy and commitment on efforts hopelessly too small to matter, we risk ultimately turning hope into cynicism or depression, or both.

Wealth, Civilization, and Energy

- Our previous [PowerPoint K43 explained the Thermodynamics of Civilization](#) itself, and showed that current energy consumption is historically proportional to the total sum of all countries' annual inflation-adjusted Gross Domestic Product (GDP) summed again over all past years of human existence.
- Since the past cannot be changed, this carries with it a very large inertia in trying to lower Civilization energy requirements.
- To continue to insist on a ***Growth Uber Alles*** paradigm for the global economy, is fatal to the future.
- Little measures like moving away from fossil fuels but at a rate that doesn't harm growth, are hopelessly inadequate – see the next slide.

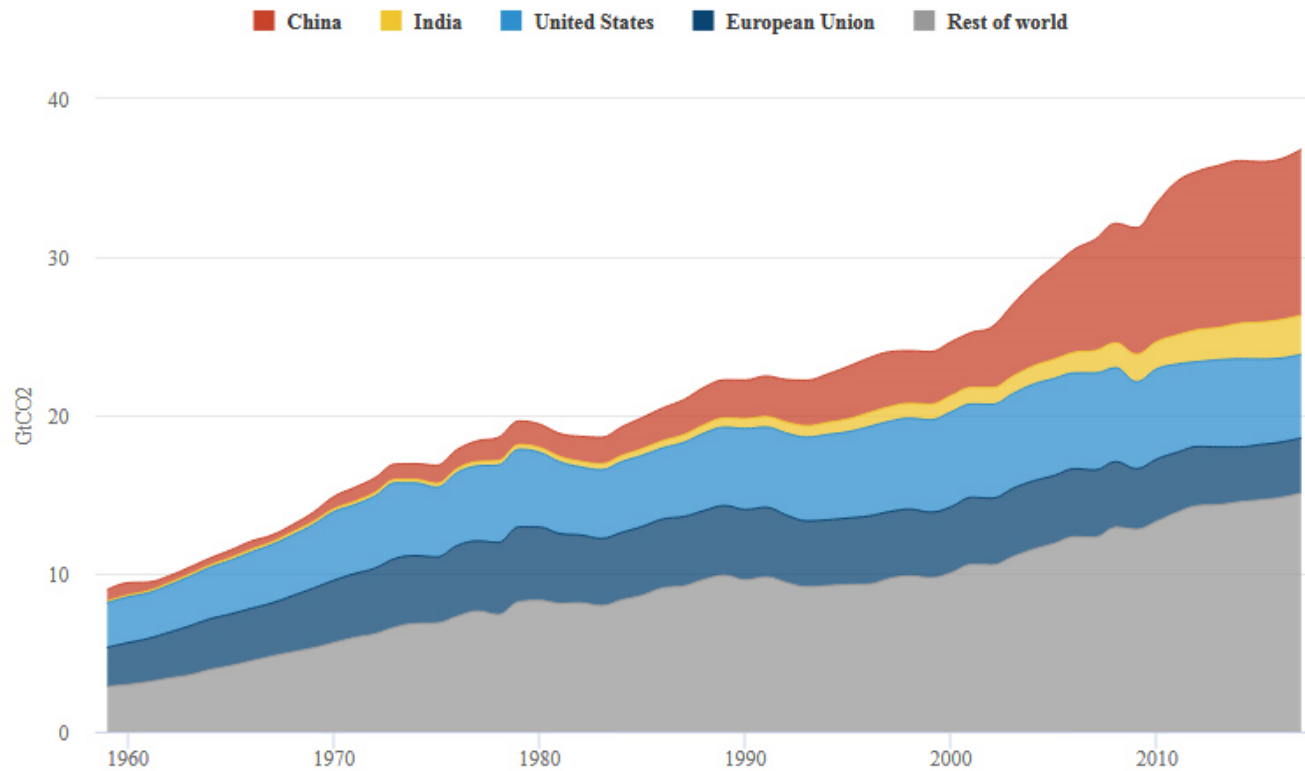
The Wildly Celebrated US/China Emissions Pledges... do very little. Even if the entire world follows, human CO2 emissions per year at best stay constant so that atmospheric CO2 rises linearly, and global temperatures continue to climb past +4C. (not to mention the PCF)

Global CO₂ Emissions



“Peak Emissions” Celebration Premature. 2017 Fossil Fuel CO2 Emissions Rise 2% over ‘16, Led by China (not including land use CO2 emissions)

Annual CO2 emissions from fossil fuels by country, 1959-2017



CB

Annual CO2 emissions from fossil fuels by major country and rest of world from 1959-2017, in gigatons CO2 per year (GtCO2). Note that 2017 numbers are preliminary estimates. Data from the [Global Carbon Project](#) and available [here](#). Chart by Carbon Brief

Climate scientist and director of the Tyndall Climate Centre in the UK Professor Kevin Anderson, in interviewing many top climate scientists, observes that....

There is a widespread view that a **4°C** future is incompatible with an organised global community, is likely to be beyond 'adaptation', is devastating to the majority of eco-systems & has a high probability of not being stable (i.e. 4°C would be an interim temperature on the way to a much higher equilibrium level).

Consequently ...

4°C should be avoided at 'all' costs

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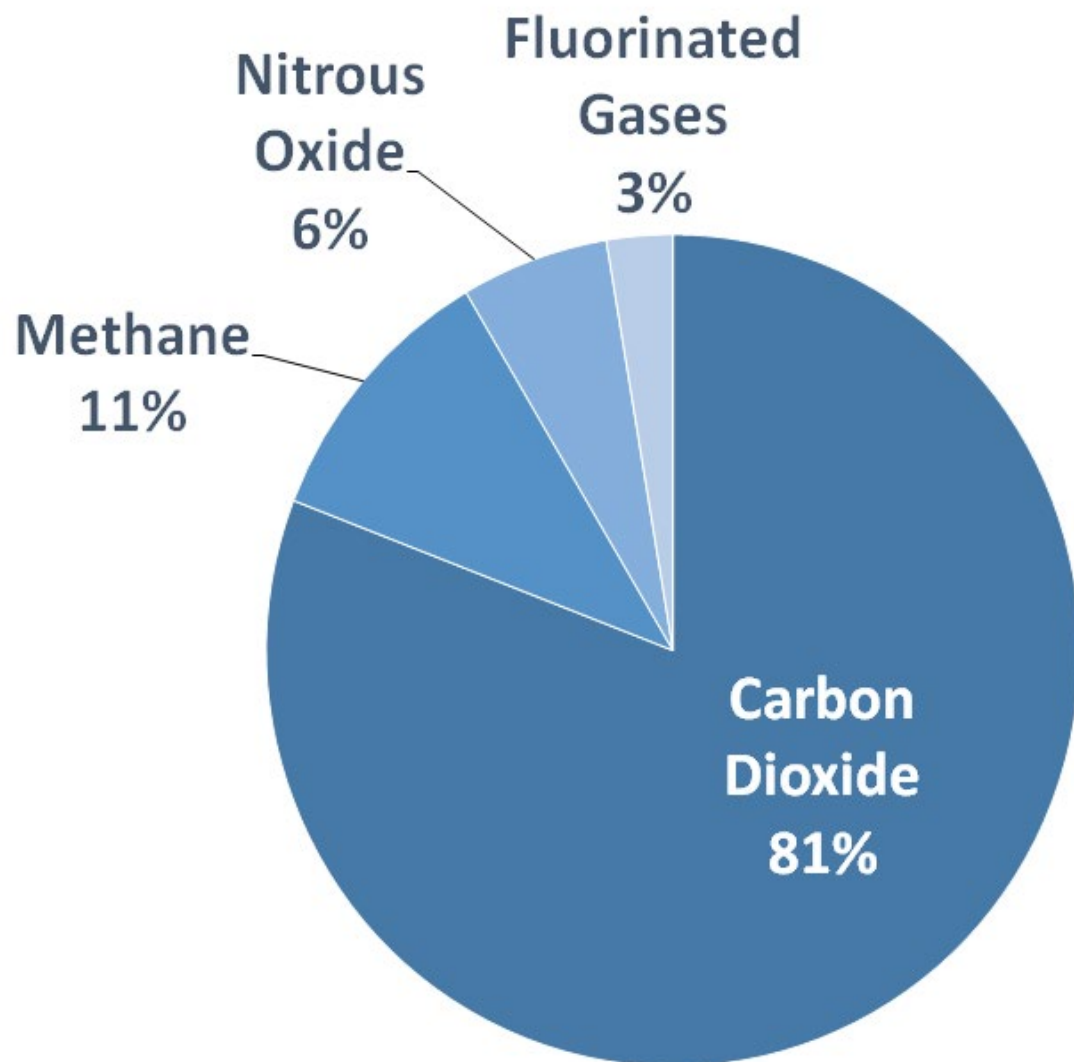


Kevin Anderson 'Rhetoric to Reality'

In October 2016 – Agreement to Eliminate most HydroFluoroCarbon Refrigerants (HFC's): Significant?

- Here's some of policy people's hype: *“the single most important step that the world can take to limit global warming.”*, and from John Kerry - a *“monumental step forward”*
- **Is it?** Consider: *“Between 2020 and 2050, 70 billion tonnes of CO2 equivalent, comparable to the emissions of nearly 500 million cars, will be prevented from entering the atmosphere thanks to a progressive reduction of HFCs.”* (from ClimateHome)
- (note: a tonne is 1.1 tons)

U.S. Greenhouse Gas Emissions in 2014



But HFC's ("flourinated gases") are only ~3% of U.S. GHG emissions (in CO2 equivalent measure)

So, Is this Significant? Not Really

- Even assuming we halt growth in CO₂ emissions, and so for these next 30 years 2020 - 2050 it remains at 38 billion tons of CO₂/year, and accepting for the moment the 70 billion ton CO₂e value on the prior slide...
- Then, if there is no cheating (a problem for HFC and CFC's)... **...The agreement amounts to less than 6% reduction of CO₂ equivalent emissions**, not counting the non-CO₂ GHG's like N₂O and methane, and human-triggered natural GHG's from the melting permafrost and tropical wetlands.
- But it's worse: we're not going to end refrigeration from Civilization, so what will replace these with?

There is no mention of the required rise in alternative refrigerants

- Remember than ALL molecules except symmetric diatomic molecules (N₂, O₂) are greenhouse gases. Even simple ones like the older refrigerant ammonia
- Replacing current HFC refrigerants with the optimum lower GWP (global warming potential) alternatives, results in a reduction in net CO₂ equivalent emissions by refrigerants of only about 1/3 ([Beshr et al. May 2017](#)). Said another way, **that wedge which is HFC's will still be 2/3 as large as it is now, once they are all replaced by their best-judged equivalent but safer refrigerants.**
- And therefore, the REAL savings in CO₂e from the HFC ban agreement is not 6%, but less than 2%.

So the Answer to: “How Draconian Must Policy Action Be?”

- From Garrett's work, Draconian enough to require reversing the accumulated Wealth of Human Civilization
- That's a very bitter pill to expect people to swallow. Can we hope for GLOBAL people (not just Santa Cruzan's) to mature enough, care enough about the future, and become scientifically literate enough to really digest with their own minds the necessity of this, and force themselves against their impulses, exercising the required willpower in an ongoing way?
- I think that's very unlikely.
- We will most likely follow Nolthenius' First Law: “People Learn the Hard Way”, and the reversal of accumulated wealth may be a very involuntary and ugly process

Garrett's Work is just about as unpopular as any I have seen

- Even Guy McPherson's absurd claims of human extinction by the year 2026 by climate change, are more popular – just check **YouTube** to see how he's paid to come out to venue after venue to give this message of death for you all, and right soon.
- Elsewhere, Garrett's work is misrepresented, then dismissed based on demonstrably false statements. We insist on economic growth as part of the present and the future, and Garrett's work shows how incompatible this is with a livable world.
- Tyndall Climate Centre head Kevin Anderson points out that to get funding from the Research Councils for climate strategy work in the U.K., you must show how your idea will promote economic growth (!) (4:20 into this talk). **Unending Economic Growth SHALL NOT be questioned, is the paradigm insisted upon.**

Why not count on inspiring selfless acts of social conscience towards a low carbon lifestyle?

- The numbers simply make this strategy futile (next slide).
- Climate is GLOBAL. CO2 is GLOBAL and recognizes no personal, political, or national boundaries. Most new carbon pollution is now from Asia, whose people are determined to get “the good life” we have enjoyed in the West for generations, and are quite resistant to being told by the U.S. that the Earth can’t afford their energy-intensive desires. ***“Sorry – you missed the party”***, doesn’t sit well.

Let's Do the Math...

- Suppose we motivate, through whatever inspirational examples and advertising, **100 million people to voluntarily cut their carbon footprint in half** (1/2 is almost certainly extremely optimistic, considering Tim Garrett's work)...
- In the US, the per capita CO2 footprint is 17 tons/year per person. Assume all 100 million people are high-carbon Americans
- 2016 global CO2 emissions were about 40 billion tons/year
- Therefore: $17 \times \frac{1}{2} \times 100$ million people = 850 million tons CO2/year savings = **2.1% of the world emission rate.... It is Negligibly small**

Well then - Raise it to 1 BILLION people...

- ...voluntarily cutting their carbon footprint in half and use a correspondingly more realistic 9 tons CO2 per year per person (they can't all be Americans) and you still only cut global CO2 emissions by 13%. That will make almost no difference to our future.
- Repeat for emphasis: Convincing 1 billion people in the industrial world to cut their carbon footprint IN HALF by drastic cuts in lifestyle and conservation, each person knowing that the rest of the population is free to live as high-carbon a lifestyle as they please... it only cuts global CO2 emissions by a paltry 13% - when we need to cut it to ZERO, RAPIDLY, just for starters.
- But it's worse than this. By including not just CO2, but our other greenhouse gas emissions, we're emitting ~60 billion tons CO2 equivalent/year, not ~40 billion tons (2019)

Another Voice on The Impracticality of Voluntary Actions

- John Gibbons – director of the U.K.’s **Carbon Capture and Sequestration Research Lab** identifies the key problem with CCS (carbon capture and sequestration)...
- *“The problem I see, is getting the whole world to install CCS technology when it involves spending money just for the sake of climate change. And that is notwithstanding all the analyses I’ve seen suggesting the cost of achieving net zero (carbon emissions) will be significantly higher without CCS. Double, is a ball park figure. (The attitude is...) ...why would you spend money just for the sake of the climate? That’s the problem.” (1:06:10 into [this panel discussion](#))*

“A focus on personal emissions, or even national emissions, has little effect. The underlying requirement is a steadily rising carbon fee, readily accepted by the public if the funds are distributed uniformly to all.”

- Climatologist James Hansen ([2020](#))

Nate Hagens Advocates for a More General Solution which I admire

- Don't tax people, don't tax income
- Instead, tax the mining of non-renewables. Not just oil, but all non-renewables (metals, etc.)
- This would put the finger directly on our core sustainability problem.
- Any political desire for raising the economic status of the lower classes relative to the wealthy, should be addressed elsewhere. We're here concerned with achieving a long term sustainable Earth.

So, I am not one to guilt-trip anyone for not voluntarily lowering their personal carbon footprint

- We may be shy to admit it out loud, but we all know – one (or even one billion) person's noble sacrifice will do essentially nothing for solving the ACTUAL PROBLEM, and yet may entail a significant loss to a person and their family. The cost vs. utility balance completely fails.
- And worse; don't use your personal carbon sacrifice as a holier-than-thou finger-wag against others – you only engender resentment and pushback (was the 2016 election, in part, such pushback?). It leaves you open to the guilt-tripping that climate denialists know you're vulnerable to. **Such sacrifice needs to be UNIVERSAL to be WORTH it.**

The push-back I get when pointing out these facts is ... ***“That’s so cynical! What if everyone felt that way!?”***

- I’ll point out - You don’t control how everyone feels.

Remember the Environmental Movement of the 1970's?

- It was the 20th century's awakening to a different relationship to Nature.
- There was a flurry of new magazines catering to organic farming, protests on rainforest destruction, coral reef health.... and other familiar themes.
- Did it sweep the world to a new paradigm? **No.** It found its audience, who were ready and quickly converted to this paradigm – and that's where it stayed... momentarily. That was ~50 years ago.
- **Worse – Environmentalism has been steeply declining for decades...**

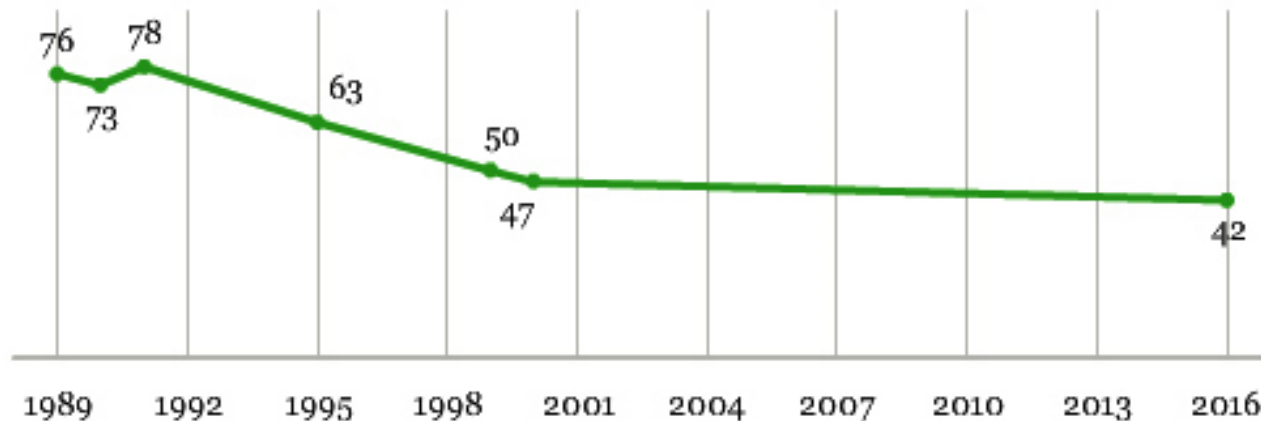
We're going backwards.

PRINCETON, N.J. -- As Americans observe Earth Day, Gallup finds 42% of Americans identifying themselves as environmentalists, down from an average of 76% in the late 1980s and early 1990s.

Americans' Self-Identification as "an Environmentalist"

Do you consider yourself an environmentalist or not?

■ % Yes



But if we're ALL legally FORCED to make severe sacrifices, such that we actually do save a livable future – that's an entirely different proposal

- But to insure success, ALL must make the sacrifices. That requires government policy, written with the force of law, universally mandated - **against our individual will**.
- Voluntary local/individual conservation, realistically and numerically looked at, doesn't work and should not dominate our conversation.
- In fact, this plays straight into the strategy of Big Oil. They WANT you to carry that cross, believe it's YOUR fault, not theirs, YOUR failure of will. It's demotivating, encourages despair, and keeps in force the paradigm they profit from.

How Likely that We Can Get There?

- Most of the time, I feel it's about as likely as billions of people crafting personal chastity belts, and then going to their governments to plead with them...
- *"....I don't have the will power to permanently put on this chastity belt! You, my government, must do it **for me, against** my will and unhearing of my protesting changes of heart when you actually succeed."*

“Against our Will? But Rick, I’m sure if we just educate people so they understand climate change is real, they’ll voluntarily do what is necessary!”

- Really?
- **A 2018 poll** showed that 70% of Americans believe in the reality of climate change and find it “personally concerning”. **56% believe climate change will harm their family.** That’s a rising number, and good. But here’s what’s appalling:
- **Yet 70% of Americans would not vote for a tax of just \$10/month to do something about it. 40% won’t pay even \$1/month. So...**

Even though 56% believe climate change will harm their family, 70% won't spend the price of a single burrito per month to do anything about it, even knowing that all taxpayers would be doing the same.

What Does That Say About Us?



“But Rick, World Governments Have PROMISED to Stop the Destruction of Nature, and Hold Global Temperatures to 1.5C”.

- ...Right
- In 2010, the world summit in Aichi, Japan set these targets and promises. The result 10 years later?...
- *“The world has failed to meet a single target to stem the destruction of wildlife and life-sustaining ecosystems in the last decade, according to a devastating new report from the UN on the state of nature.” [Guardian report 2020](#)*

A New Study (Schwartz *et al.* 2022) Finds Global Youth are Deeply Anxious and Depressed About Our Climate Future

- This might be a good thing. The antidote to depression, is action.
- It's the youth who will ultimately bear the worst costs. It's time they sweep the "leadership" of today into an early retirement.

***"We have only two modes -
complacency and panic."***

— James R. Schlesinger, the first U.S. Dept. of Energy secretary, in 1977, on the country's approach to energy

I'll add: **We've tried complacency. It has failed.**

Extremely Difficult Action is Necessary

- Possibly even impossibly difficult action, certainly to preserve the world of my own youth and genuinely stabilize climate and coastlines.
- The science presented should at least require you to look at difficult political solutions with a more open mind...
- **Here are my Policy Recommendations...**

Action #1. A 28th Amendment to the Constitution

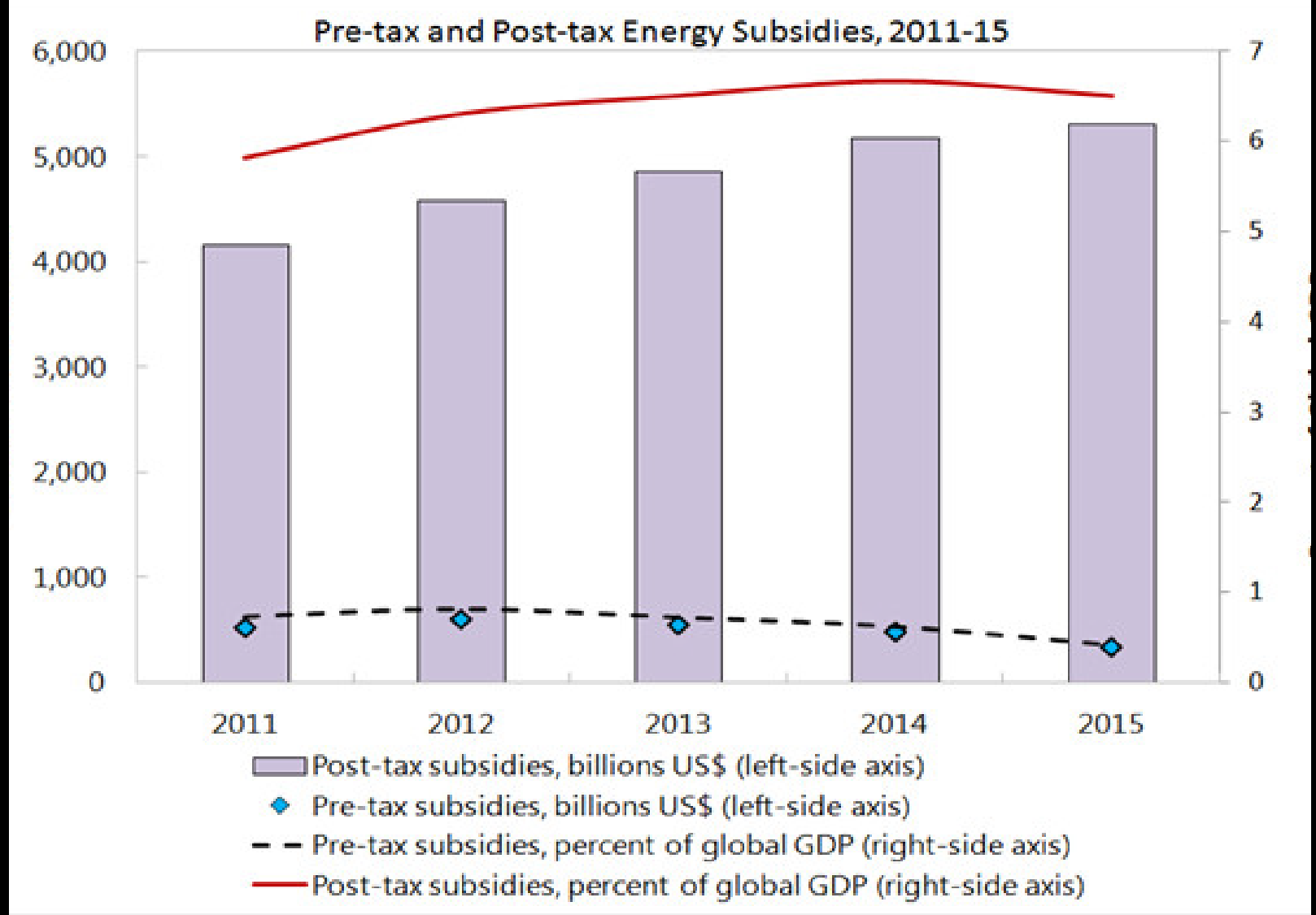
- I propose a 28th Amendment to the Constitution...
- *Congress shall permit no law denying the rights of present and future citizens to safe commons, including air, ground water, river water, natural forest, ice caps... and the climate that Earth's ecosystems evolved in harmony with. Congress shall permit no laws which interfere with the existence of a natural environment in harmony with the right to life and the pursuit of happiness by future as well as present citizens.*

Action #2. End Government Subsidies to Fossil Fuel Corporations

- Including externalized environmental costs, we subsidized fossil fuel corporations in the amount of \$1,000,000,000,000 (that's a Trillion) in 2012 alone ([source](#))
- In 2014, the U.S. directly subsidized fossil fuel corporations by [\\$21 billion for exploration and production.](#)
- Compare to the \$1.8 billion spent on lobbying. That's a fantastically profitable 1,200% ROI (return-on-investment).
- That's a FAR better ROI than they could get by transforming their business model to "Go Green".

Globally, subsidies estimated at a staggering \$4.9 Trillion in 2014

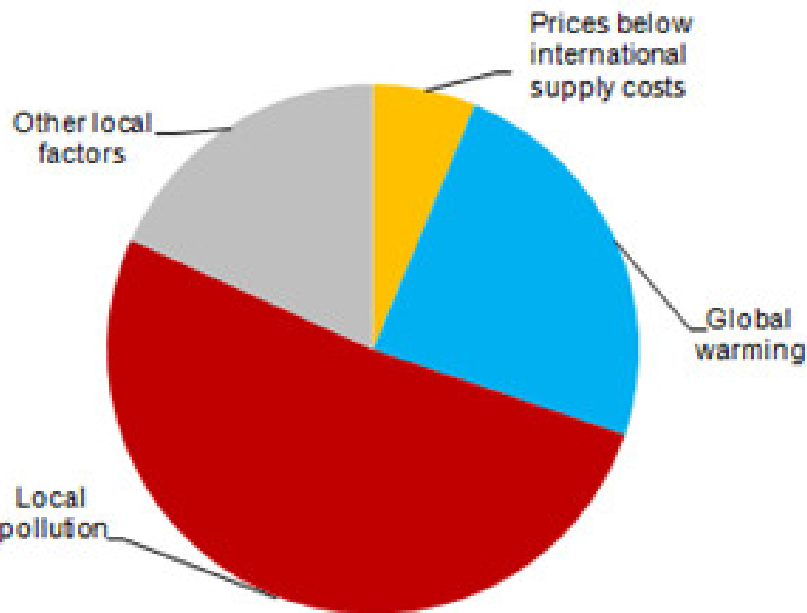
- These are subsidies in the form of direct cash, tax breaks, and breaks on external environmental costs
- Less than ¼ of this is due to current climate change and no accounting is made for the vastly higher environmental costs of coming climate change ([summary of linked IMF report](#))
- This same report shows China has subsidized fossil fuels at the rate of \$2,300 billion, and the U.S. at \$700 billion.
- Global subsidies projected to rise to \$5,300 billion for 2015. ([New 2017 study](#) shows even more)
- **This is over 6% of Gross World Product; more than is spent globally on all healthcare**



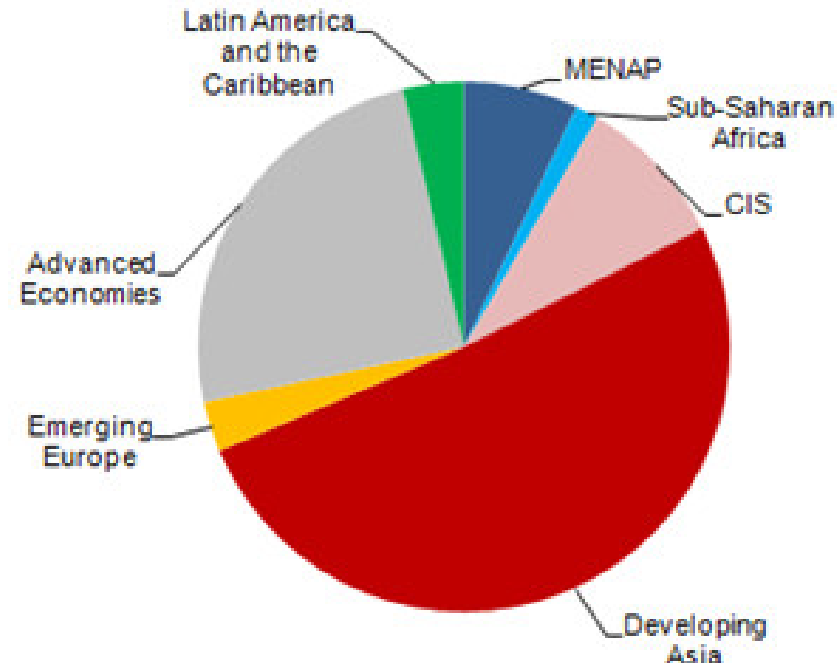
Global Fossil Fuel Subsidies in billions of dollars (left scale): Pre-tax = direct cash and tax breaks. Post-tax includes externalized costs to the environment. Pre-tax trend has been down due to falling energy prices. Post-tax continues to rise as environmental damage escalates. Half of global subsidies are from developing and emerging Asia ([Intl. Monetary Fund report](#))

Subsidies: Cash and externalized costs: local pollution is about half, current global warming about ¼. The rest is in direct cash, tax breaks, and other financial factors. Developing Asia accounts for half of all global energy subsidies, Advanced economies ¼ of the total. With ongoing science coming in more and more grim, the pollution and especially the global warming costs are likely very underestimated

Energy subsidies by component, 2015



Energy subsidies by region, 2015



Action #3: Tax All Non-Renewable Resource Mining

- Nate Hagens favors, points out this comprehensively deals with the wider human dilemma for which climate change is only a symptom. Carbon would be one component.
- Make this tax severe, and compensate by not taxing income.
- Don't confuse Liberal inequality sentiments with Earth sustainability.

Action #3b. Carbon Tax at the Wellhead

- This idea was first proposed by former head of the Goddard Institute for Space Sciences, climatologist [James Hansen](#). Linked here: [Carbon Tax-and-Dividend](#)
- **Tax** carbon wherever it enter our borders, whether at the well-head in mining and drilling locations, or at ports of entry by ships.
- And let's be honest - it's a TAX, for those who are taxed – the fossil fuel industry. It's not a “fee”. They get nothing for having to pay it. It's a **tax** just as surely as any other tax, regardless of the fact that calling it a “fee” makes it more politically nice-sounding and sale-able.

“But Rick, the Money is Returned to the People, so it’s not a tax!”

- This argument just makes no sense. All tax money is supposedly returned to the people, in the many ways that government does (Medicare, roads, defense, social security, etc.).
- Let’s get over it, and quit the phony sales pitch – it’s a tax. A tax on fossil fuel companies which they will pass along to consumers, as they must, for this strategy to work.
- Let’s not stoop to the tactics of advertiser’s manipulation in order to sell the proposal. It should be sold on its merits - as a solution for climate change.

Oil exec's have said carbon tax proposals of ~\$10/ton of CO2 can be (reluctantly) incorporated into their business plans

- Do they mean it? Most likely they're giving such statements for public placation, while simultaneously behind closed doors making sure their shills in Congress obey their orders, and NEVER pass any carbon taxes on miners and refiners. They prefer: let the end users pick up the tab on any taxes (since most end users are politically powerless, as we saw)
- Regardless - \$10/ton is **nothing** . The whole POINT is to **DESTROY** these business models which are destroying our future.
- The tax must be high enough to be crippling to fossil fuel use, to radically and immediately motivate strong change.
- ~\$100-400+ per ton of CO2 is needed in order to fund atmospheric CO2 removal in amounts significant to climate, according to expert Klaus Lackner and recent estimates (see **K45**)

How much money is needed just to pay for the energy cost of atmospheric CO₂ removal?

- [House et al. 2011](#) estimate 400,000 joules of energy to remove and sequester a mole of CO₂.
- Converting this to the global problem, that's 2.6×10^{21} joules or 7×10^{14} Kwh to pull the atmosphere down to 280 ppm (pre-industrial level) .
- At ~\$0.10 per Kwh of energy, that's \$70,000 billion **just to pay for the energy alone**
- That's \$10,000 for every man, woman, and child on the planet, the vast majority of whom have nowhere near that kind of cash. Almost half the world lives on < \$3.00/day

In their 2019 book “The Physics of Energy” ...

- ...MIT's Jaffe and Taylor calculate the absolute perfect minimum thermodynamic energy required for separating and sequestering underground the same amount of atmospheric CO₂ we emit per year (unavoidable losses mean the realistic number is much higher),
- It is **40% of total global annual electricity consumption.**

Dividend the Carbon Tax Collected?

- To be politically sale-able, proponents want the money collected to be given to all citizens of the country, with as little taken off for administrative costs as possible. **But Politically-sale-able is also neutered and ineffective. I've become deeply skeptical of "Market-friendly solutions". But, for what it's worth...**
- **Citizens Climate Lobby** is a grass-roots organization and has as their sole purpose to ask Congress to enact Tax-and-Dividend legislation. We have an active local chapter. **Santa Cruz chapter**
- Carbon, in addition to massive government subsidies, enjoys the luxury of externalizing its true cost to Civilization, twisting the economic incentives towards destruction of the future.
- That external cost must be internalized so as to reflect carbon's true cost to Civilization. Right now, the main price determiner is the cost to pull it out of the ground, and not the cost to present and future global climate. If that remains, we may be doomed.

How to Dividend?

- Some might argue that the dividend money should be allocated with other agendas targeted; reducing economic inequality, promoting specific clean energy companies, various pet political goals. But consider...
- **1.** Government has a poor history of choosing which companies to reward (e.g. Solyndra, which went bankrupt).
- **2.** Right wing organizations will fight such liberal agendas so vigorously that they are very unlikely to ever happen.

Should we dividend equal amounts per household? Equal per person? Equal per voter?

- These are details. However I would argue against a dividend at all, but if it is to be dividend'ed to the people, then it best be “equal per household” because it then demotivates forming larger families to collect more checks; smaller families are themselves a value for a finite planet.

Beyond Dividend: Adding to the Carbon Tax

- CO2 obeys no national boundaries, so there is no economic incentive for one company or one nation to unilaterally take on the burden of removing EVERYone else's CO2.
- So the profit motive needs some help here
- I'd advocate for a portion of the carbon tax to go directly to funding the research, development and deployment of massive atmospheric CO2 removal/sequestration installations
- **Think of it this way – the Hansen-advocated Carbon Tax only dis-incentivizes new carbon entering the country, while leaving the mess that past emissions have made unaddressed.**
- **This is critical - research shows that natural removal of atmospheric CO2 is not fast enough to save us.**

If Logic Ruled... I'd Argue that the Carbon Tax Money Should be Spent Exclusively on Decarbonizing Our Energy

- Dividend'ing it instead to average people means it will add to consumption spending, the most CO2-intensive form of spending.
- As we saw in [K43](#), we need to **reverse** economic growth, not add to it.
- Alas, society will be lucky to get any sort of carbon tax to happen, but even if the money is returned to the people, it will be better for climate than no tax at all.

The Claim (**REMI**) That You Can Grow the Economy by Taxing Carbon is Also Not Supported

- As energy economics expert Dr. Nate Hagens **points out**, the “revenue neutral” claim makes the mistake of assuming a **\$1 tax** on carbon mining is the same \$1 in value **given to and spent** by the recipient. It’s not.
- The **price** charged for fossil fuel carbon is much less than its **energy value**. *“\$1 of carbon does ~\$100 worth of human labor work by the energy content of that carbon” (-Nate Hagens)*, because competition drives the price of oil down to just above what it costs to mine it, which is far below it’s actual value.
- Hagens claims this means that subtracting \$1 worth of carbon from the economy subtracts \$100 worth of economic production, while transferring only \$1 of spending to whoever gets that tax revenue.
- While Hagens is correct in principle, the \$100 figure refers to the brute human labor value, and instead should be the alternative carbon-free energy value, a number much smaller than \$100 but still larger than \$1, given the poorer EROI of renewables.

Tax-and-Dividend: Campaign Promises vs. Reality

- The tax is an artificial drag on what markets determine is the most efficient use of energy to effect total economic growth.
- This would very likely mean a **lowering** of GDP growth, not the promised rise. **This is good, however, as economic growth is the enemy of climate, as we saw.**
- On the other side, by giving the tax to poorer people, you guarantee MORE consumption spending per dollar vs. investment spending... this will not be good for CO2 emissions in our carbon-based energy system.

Prof. Nate Hagens Observes...

- *“To distribute carbon fees as dividends to the poor as a combinatory climate mitigation and wealth inequality tool, risks a large (carbon) backfire.*
- *The lowest 2 quintiles of our society spend 100% of their income. The top 5% spend only 7% of their income.*
- *In a world with depleting oil fields (not 1 year view but 10 year view), a carbon fee with the money going to the poor quickly rebounds as a large ‘call’ on more oil/gas consumption as we are taking abstract wealth (digits in bank) and having them become an immediate ‘call’ on natural resources”*

It's essential that Tax/Div be adopted globally, in order to work. The U.S. emits only 13% of global CO2

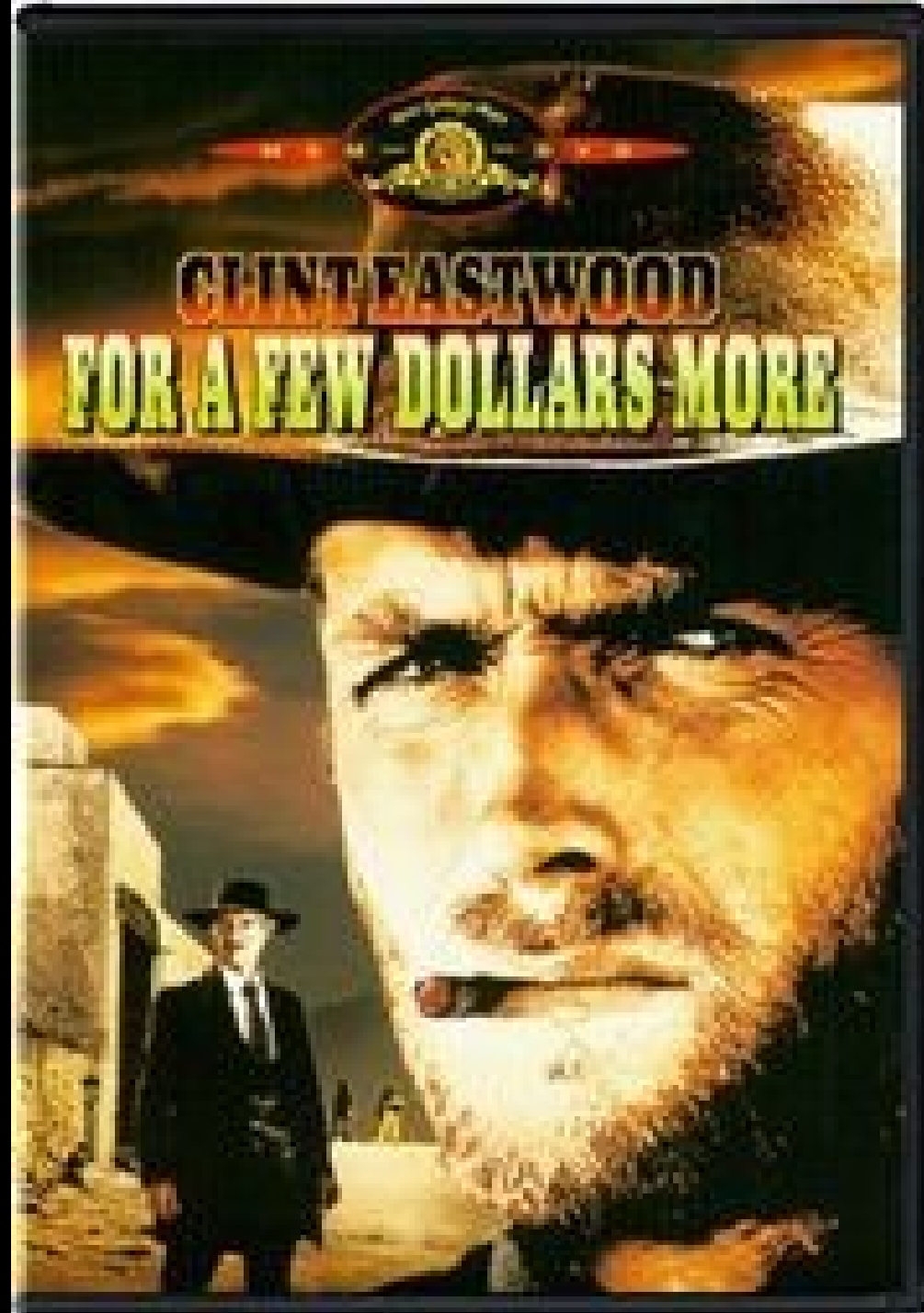
- *“As long as there are one or more countries that don't tax carbon, (and as long as goods that are made with coal are not subject to a special tax), then adding the carbon tax will tend to move manufacturing toward countries without such a tax. This will increase the advantage that these countries already have because of the use of low-priced coal in manufacturing and home heating. (Wages can be less with coal, too!)*
- *The dividend likely increases demand for products from these countries, because of the mix of products poor people buy.” - [Nate Hagens](#)*
- James Hansen advocates we tax imported carbon unless other countries adopt Tax/Div. Good, but this will not affect imports of manufactured goods, nor exports to other than the U.S., so **Hagens' observations hold.**

A “Bounty” on Carbon

- Funding this effort could be paid for with a global fund into which each country should be obligated to contribute, perhaps most efficiently and fairly from its own carbon tax, or perhaps weighted by accumulated past carbon emissions.
- In other words: A “bounty” on atmospheric carbon captured and sequestered.
- Imagine Clint Eastwood riding into town with bricks of newly minted CaCO_3 (or bags of calcium bicarbonate) in his saddle bags ...

Looking...

**For a Few
Dollars
More**



BUT - A Graded Bounty...

- Maximum payment would be earned for demonstrated **permanent** sequestration.
- I see far too many schemes that don't truly sequester carbon even if they worked as hoped, but merely "shell-game" the carbon elsewhere in the **Fast Carbon Cycle** (see our [K33](#)).
Examples: Iron flakes across the ocean, soil carbon, tree planting with no thought of how they'd survive, etc.
- These would earn far less bounty because they are sequestering carbon except temporarily.

A Major Educational Point

- I hope people realize that an essential feature of **Tax-and-Dividend** is to make the carbon tax cripplingly expensive **for all of us**.
- This is not a scheme just to punish Big Oil in an emotionally satisfying way, with the false belief that they pay the tax purely and only out of their profits, with no rise in the prices they charge for their petroleum products.
- They won't do that, of course. They'll raise their prices, and that is exactly what we need to see happen.
- To get us off carbon, we all must be forced economically off of it. History shows we won't do it voluntarily out of "good citizenship". The vast majority will do it voluntarily only if it's financially advantageous to do so, which is the very problem.

2013 Sanders-Boxer Carbon Tax Bill

- This was submitted to Congress by Bernie Sanders and Barbara Boxer. It proposed a tax of **\$20/ton of CO₂**, rising 5.6%/yr for 10 years. 60% of which would be refunded to US citizens, and 40% to incentivize alternative energy
- It was given a ~zero percent chance of surviving the Republican Congress, and indeed the bill is quite dead.
- Still, there are some elder Republicans from the Reagan years (George Shultz, James Baker) who were, in 2017, introducing a carbon tax and dividend plan starting at \$40/ton of CO₂. Surprising and laudable from any Republicans these days.
- We will see, however, in **K45: “Strategies: Technology”** that it will require more like **~\$200 per ton of CO₂** to scrub it from the atmosphere, according to the people most involved in trying to develop that technology, at climate-significant scales). New, unproven ideas might improve on this, however.

In 2016, Canadian Prime Minister Trudeau Proposed a National \$10/ton Carbon Tax

- I've heard this referred to as a “whopping” \$10/ton carbon tax. Is it? Let's do the math...
- First, it isn't clear: \$10/ton of carbon? Or a ~4x steeper \$10/ton of CO₂? Let's be optimistic and assume it's \$10/ton of CO₂
- Cars produce about 1 lb of CO₂ per mile at 31 mpg. That's 31 lb CO₂ per gallon of gasoline burned, with current gasoline costing about \$4.00/gallon.
- $65 \times 31 \text{ lb} \approx 2000 \text{ lb} \approx 1 \text{ ton}$, costing $65 \times \$3.00$ per gallon or \$240 of gasoline to produce a ton of CO₂.

So the tax is \$10/\$240 or just 4% of the cost of the gasoline.

- **The tax adds only 4% to the cost of gasoline.** About 15 cents/gallon extra, then. Gas prices fluctuate by more than this over the course of a few months, so this is not “whopping”.
- The tax is proposed to go up, however, by \$10/ton of CO₂ per year until it reaches \$50/ton. That will provide SOME cost and some motivation to curb buying fossil fuels, but not much. Why?
- Energy is EVERYTHING. It is price inelastic for the consumers
- If instead the proposal is for \$10/ton of **carbon**, that’s only about 1% of the cost of gasoline, and provides ~zero financial motivation to decarbonize.

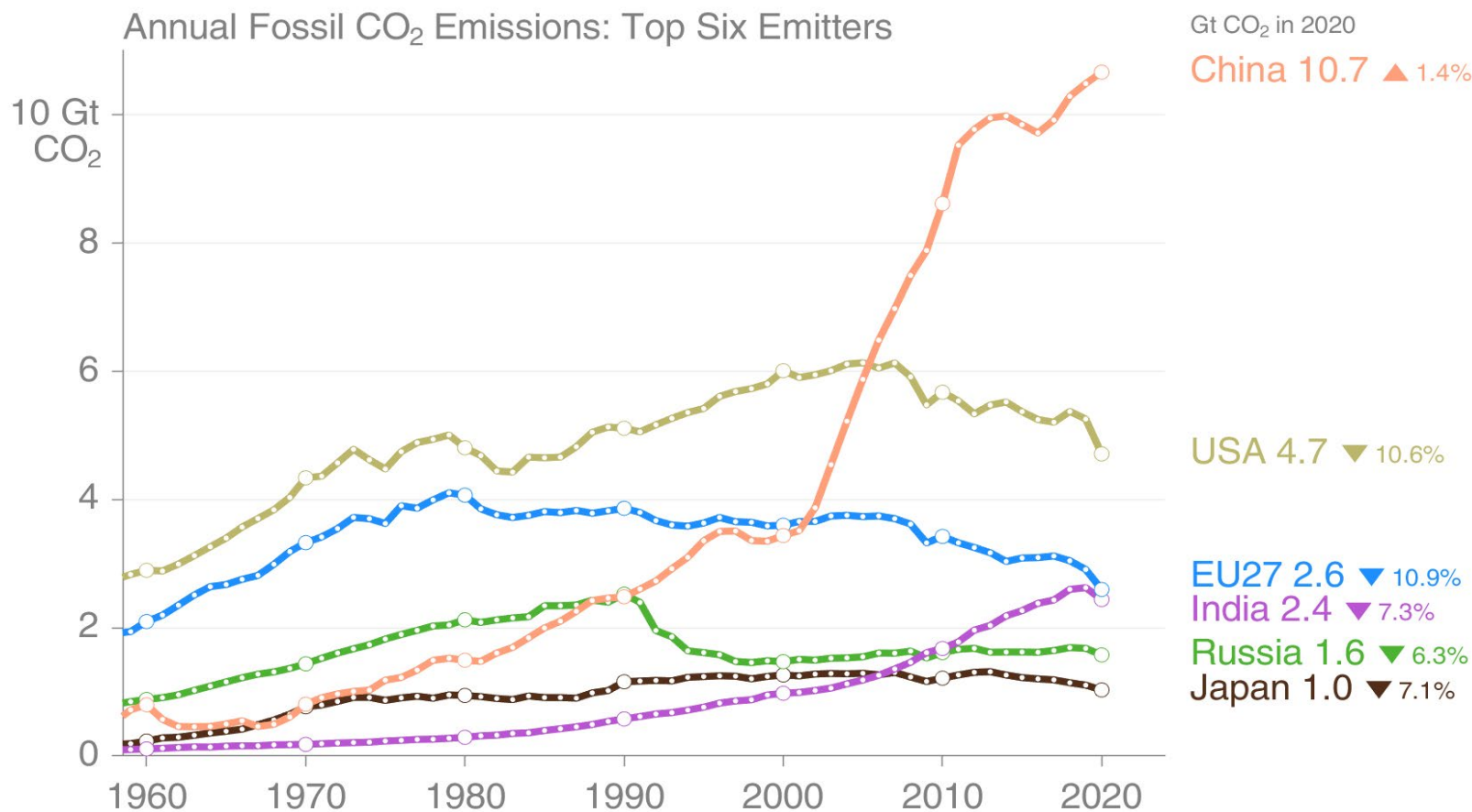
Pause: Consider the Record of Cap-and-Trade and Carbon Taxes so far...

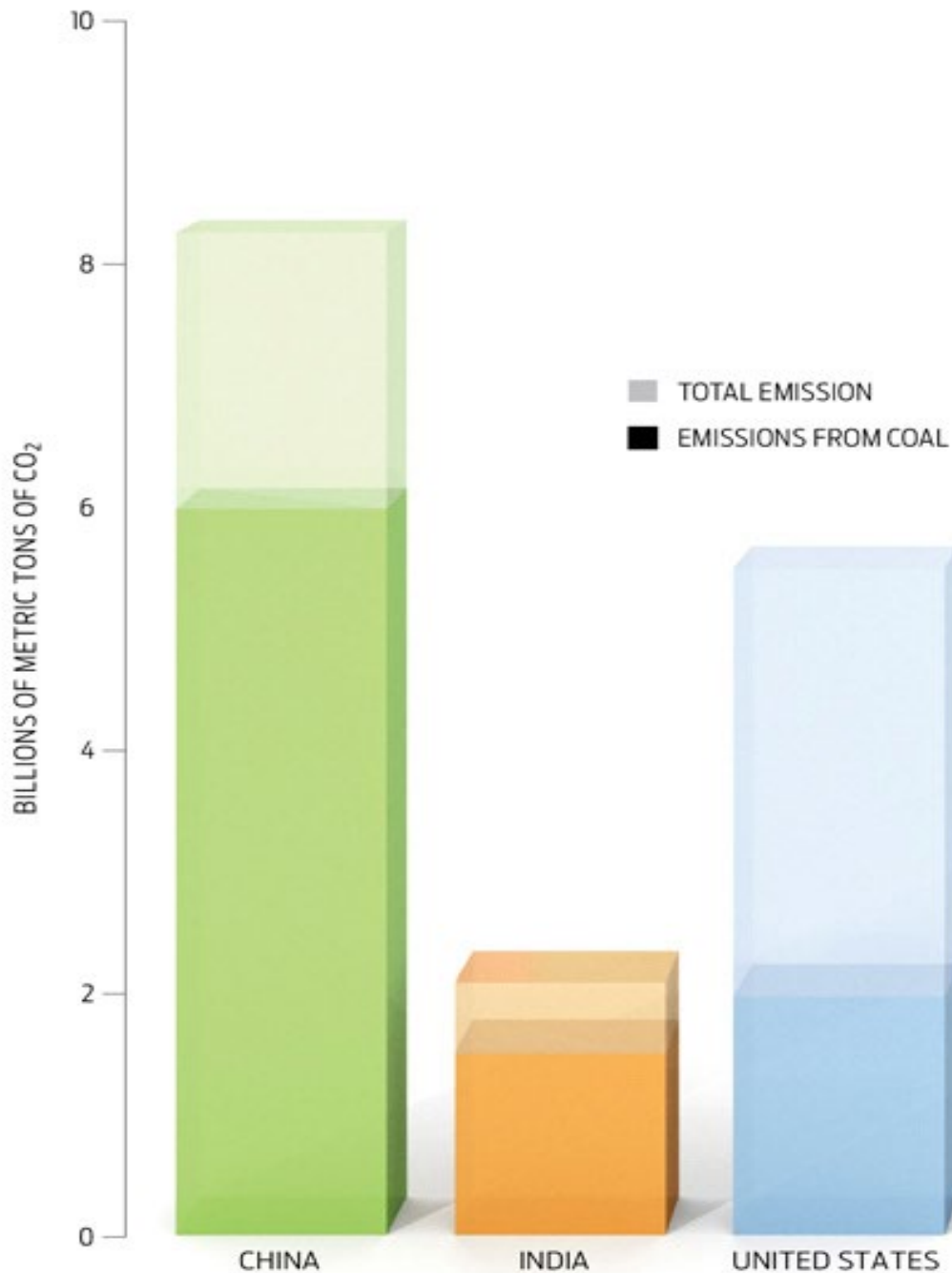
- They don't work
- Cap-and-Trade is favored by Industry, so that should give you a clue.
- **Caps for carbon credits are always created at levels far above what would motivate actual emission reductions.** Then those credits are given to the largest oil companies, then sold to smaller oil companies; traded on the carbon markets, insuring both the consolidation of their dominance, and that those credits are in fact used, therefore generating the very CO2 emissions we're told they were intended to prevent!
- Likewise, carbon taxes have so far been at the consumer end (*e.g.* gasoline taxes) where their tiny effect is almost entirely burdened on the poor, while the wealthy carbon emitters hardly notice the cost.

Neither carbon taxes nor Cap-and-Trade have impeded carbon emissions.

- As written, they're merely a revenue generator green-washed by our government.
- Energy economist Prof. Aldyen Donnelly shows why and how in fact, she argues the government doesn't want them to work, as it would limit their revenue (parallel: cigarette taxes, which also failed. It was outright banning of cig's which worked).
- **Briefly:** Carbon allowances created in highly excess number, then given to Big Oil, who can then sell them to smaller companies. It's anti-competitive, and no carbon reductions happen. Laws mandate that only a small fraction of carbon emissions can be offset, rather forcing to buy more carbon credits, as revenue stream for govt. Also highly regressive socioeconomically. Link above for full story; it's a bit complicated to explain here.

Most carbon emissions today are not from the United States. China is the biggest source

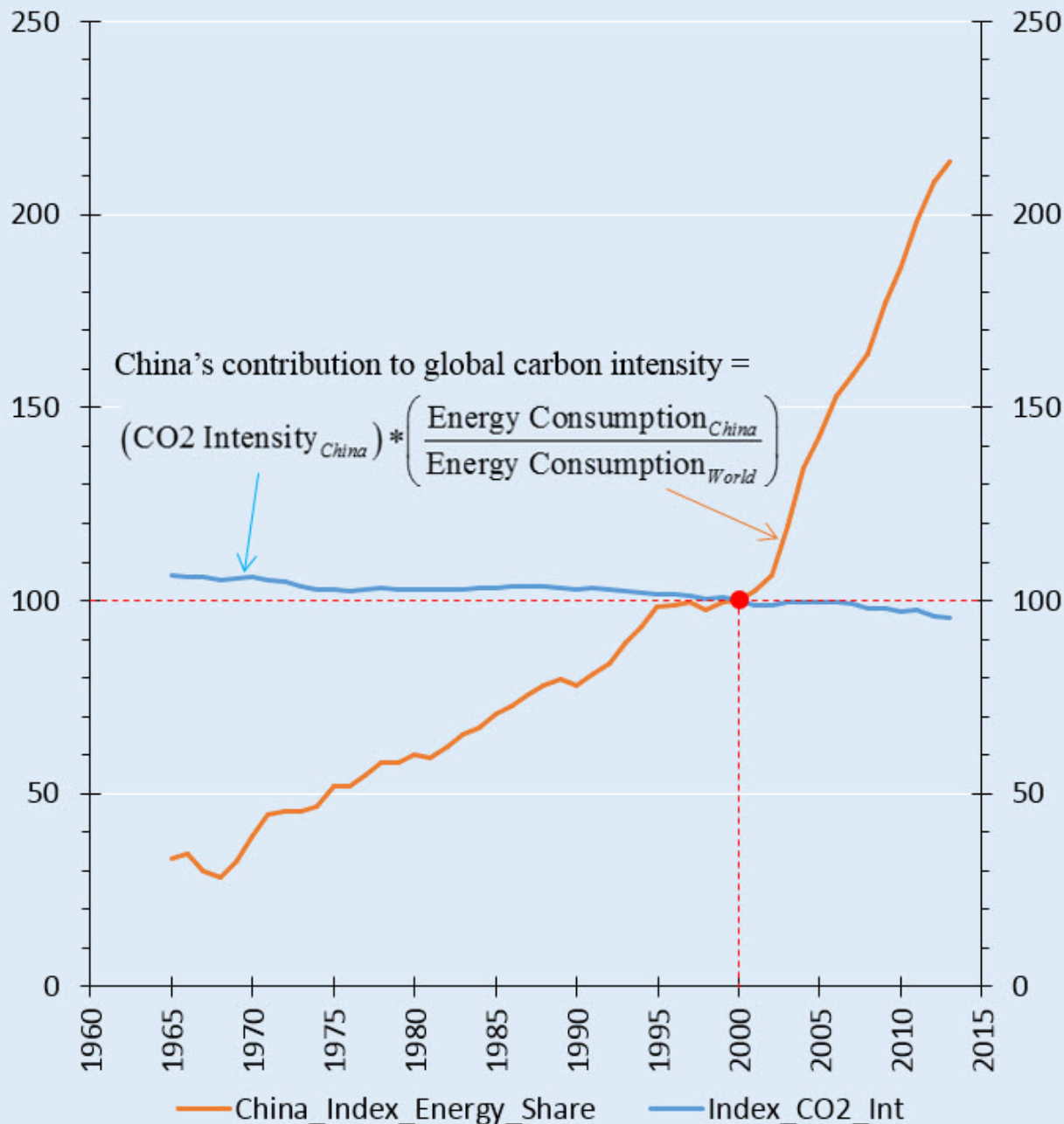




China and India together emit almost twice the CO₂ as the U.S., and mostly from coal, and new coal plants continue to be built. Other Asian countries add to this.

Exhibit-4: China's Energy Consumption and CO2 Intensity

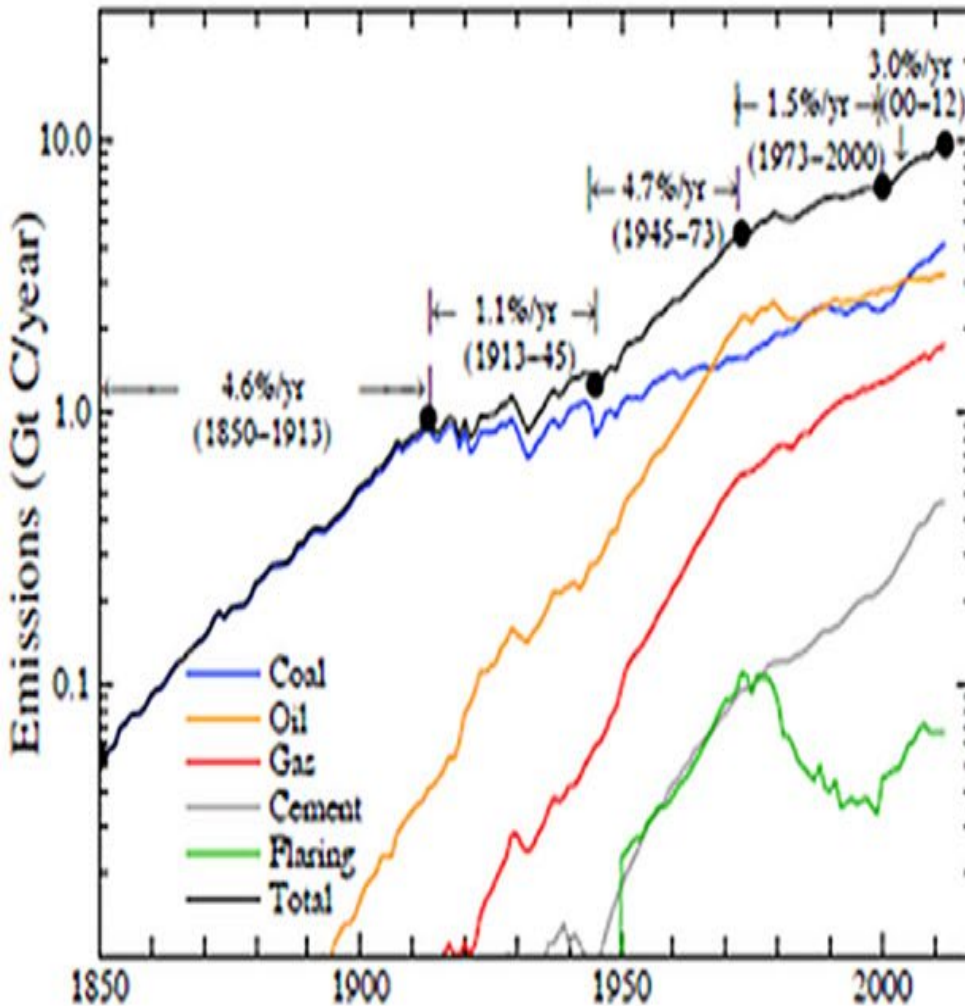
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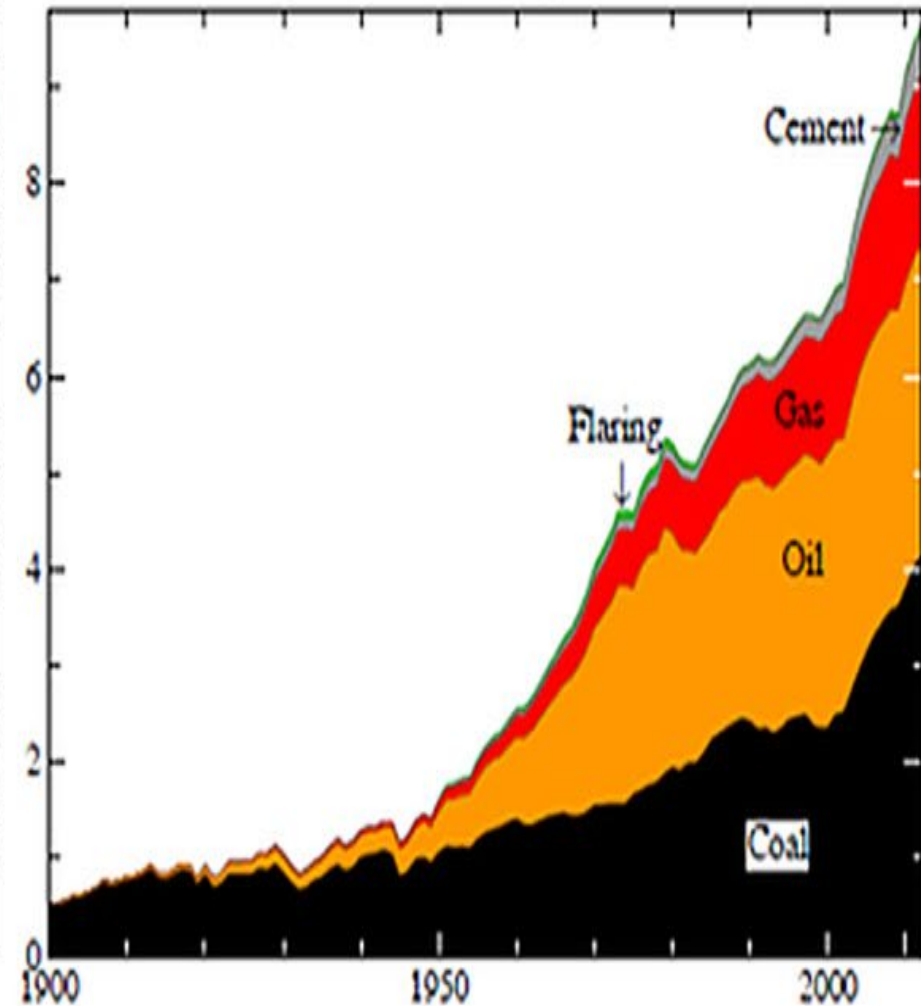
China is indeed decarbonizing (slowly, blue curve), as a percentage of total energy. But that trend is grossly overwhelmed by the sheer acceleration of their new energy consumption. Growth trumps decarbonization (as we saw in K43), so CO2 emissions continue to rise

...Global Carbon Emissions. Not just totals, but the actual RATE of emissions, continue to increase (but 2015's global [not U.S.] economic slow-down gave a pause), mostly from Asia. Since 2100, carbon emissions are rising at DOUBLE the rate (3%/year) that they were in the final quarter of the 20th century. Graphs here as of 2012. 2% rise again in 2017, again in 2018.

A Global Fossil-Fuel CO₂ Annual Emissions

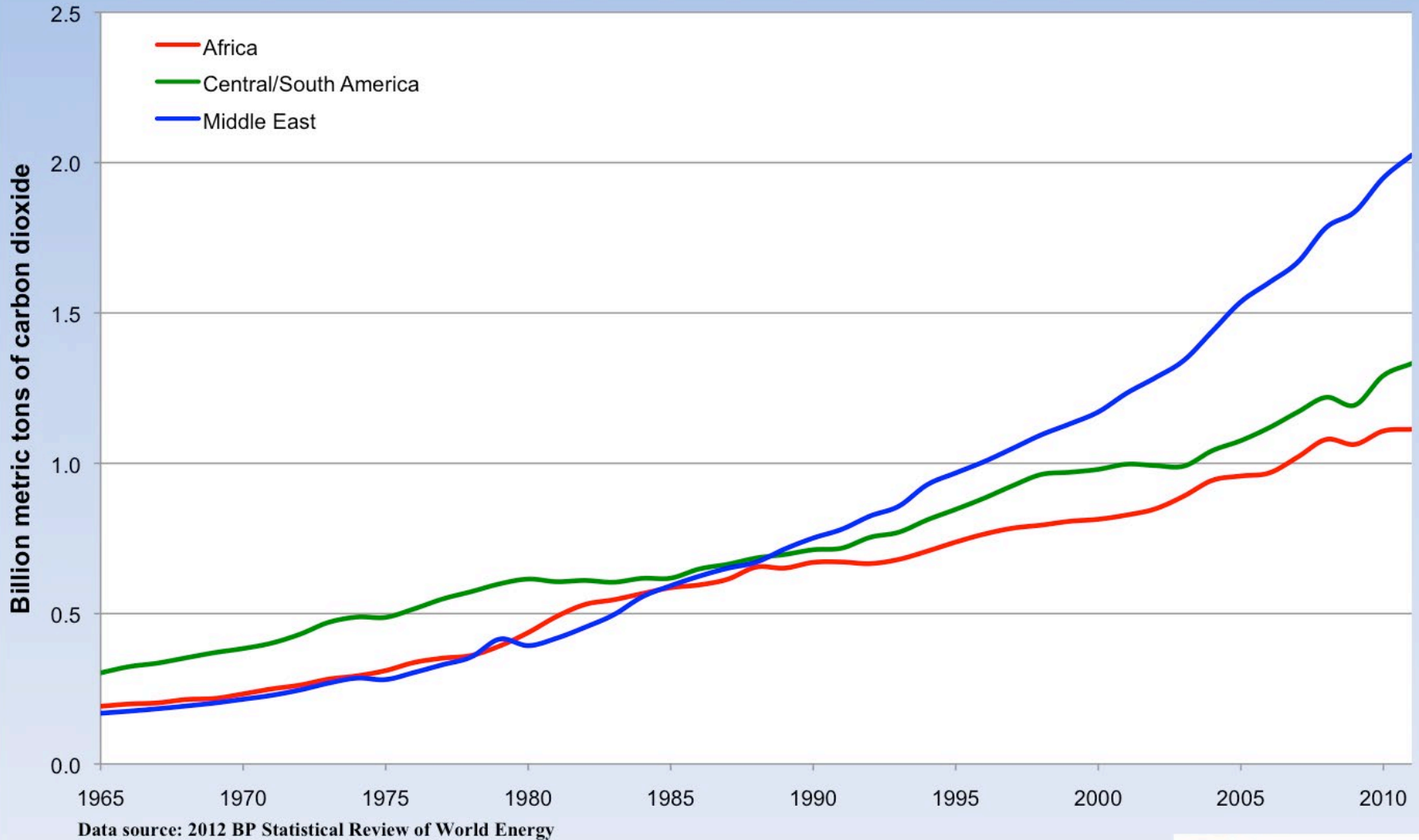


B Global Fossil-Fuel CO₂ Annual Emissions



Africa, Central and South America, and the Middle East are also continuing to accelerate their CO2 emissions

CO₂ Emissions 1965-2011



In 2004, 81% of Global Primary Energy was from Fossil Fuels ([source](#))

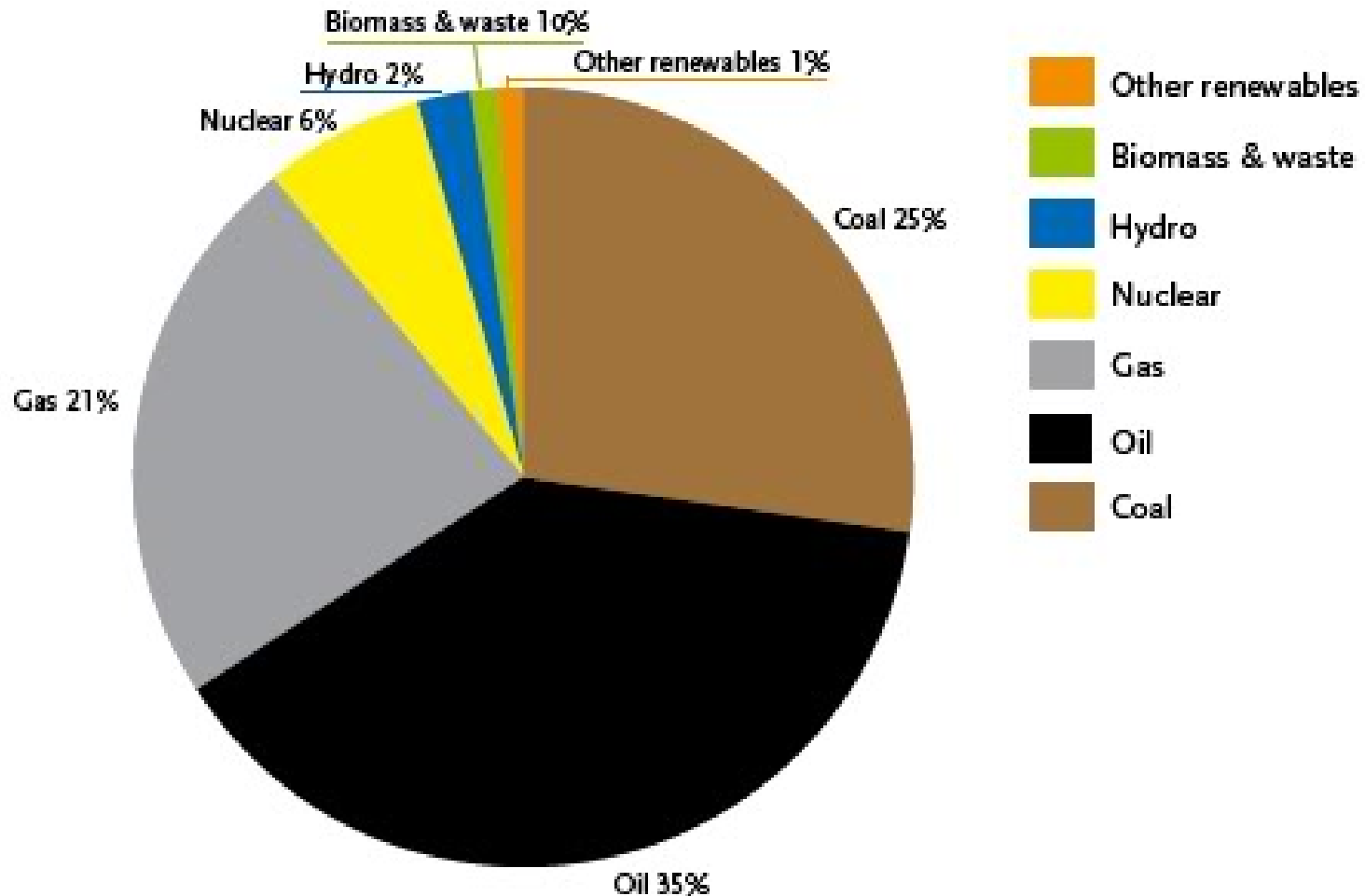
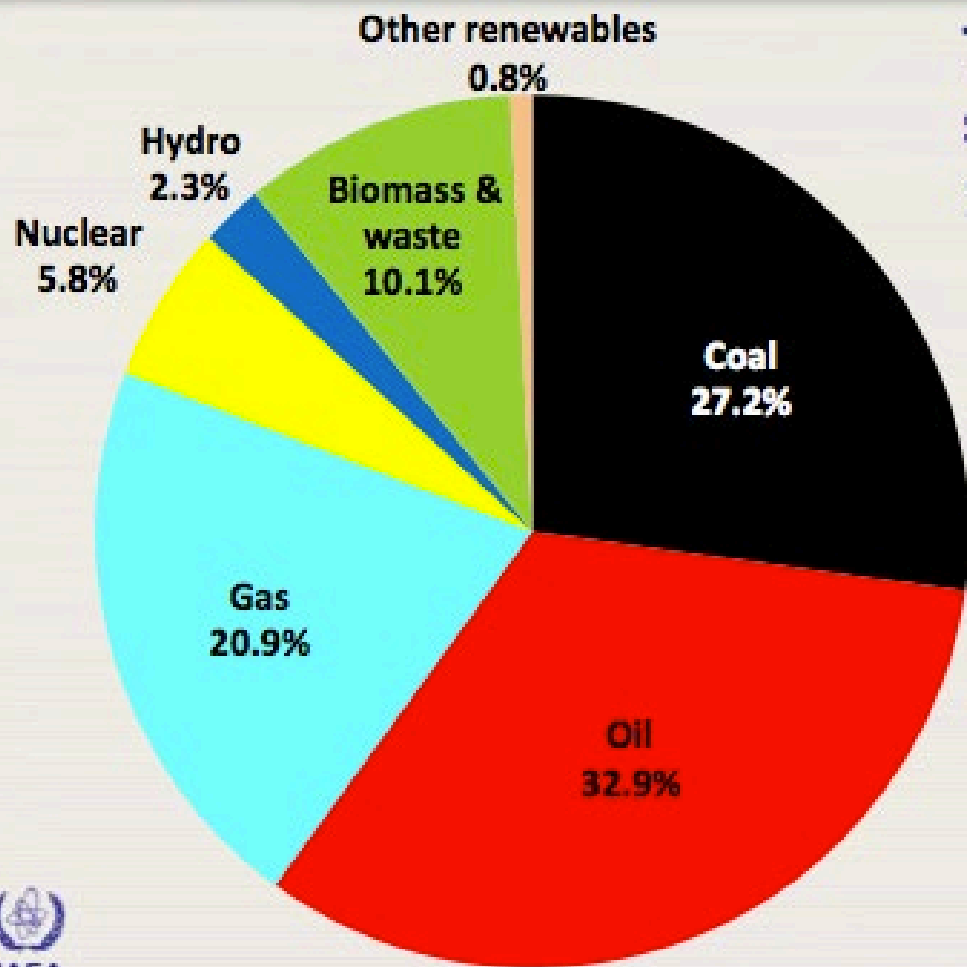


Figure 1.3 World primary energy consumption by fuel, 2004

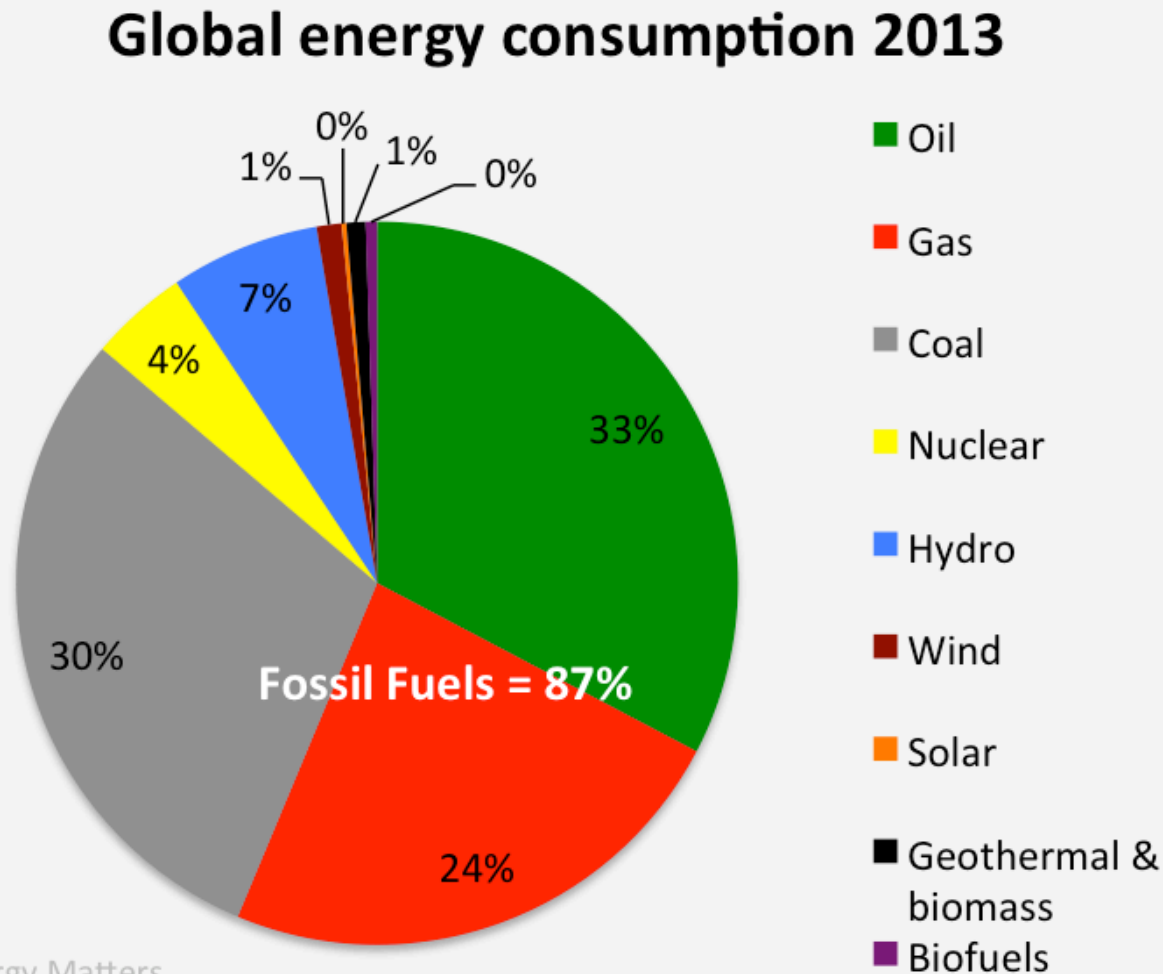
In 2009, 81% of Global Primary Energy was from Fossil Fuels (source)

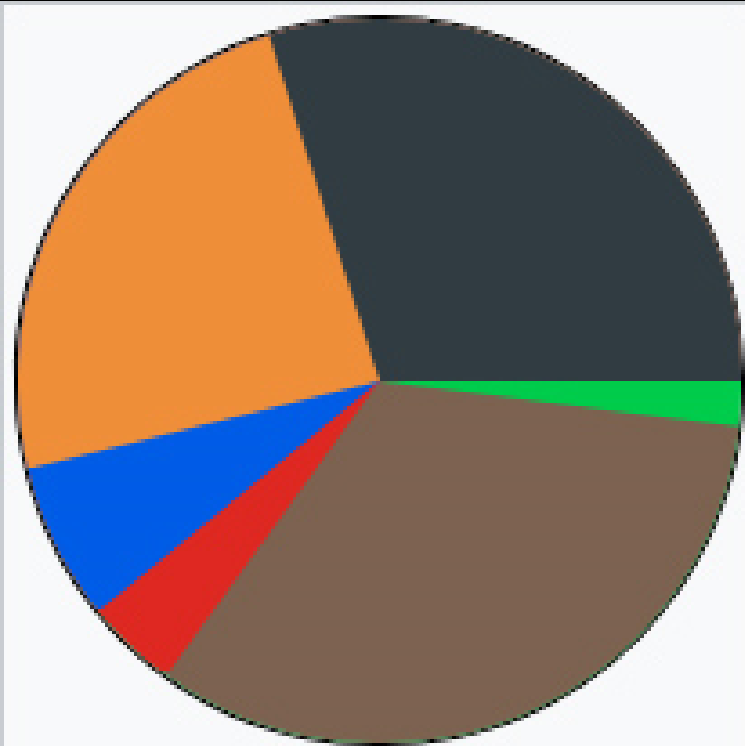
Structure of global primary energy supply



Total primary energy supply (TPES) in 2009: 12 132 Mtoe

In 2013; 87% of Global Energy Consumption from Fossil Fuels – Not good!





World total primary energy consumption by fuel in 2015^[2]

- Coal (30%)
- Natural Gas (24%)
- Hydro (7%)
- Nuclear (4%)
- Oil (33%)
- Others (Renew.) (2%)

2015. Fossil Fuels are still 87% of the Total Primary Energy Consumption: Renewables are rising, but globally, they're barely keeping up with rising coal, natural gas, and oil. Global econ growth is the Prime Directive, and requires constantly rising energy, despite improving energy efficiencies, as we saw.

Action #4: Severe trade sanctions against all countries who do not enact a Well-head Carbon Tax and end their fossil fuel subsidies

- Most carbon emissions are not from the U.S., and the U.S. fraction is dropping every day. Passing these laws only for the U.S. will do very little to slow global CO2 emissions.
- It is essential that other countries are compelled to do the same, especially China.
- Unfortunately, China is transitioning from being the manufacturing exporter to the world, to catering to its growing middle class consumers at home, so this may be harder to accomplish by trade sanctions.
- Will it work? So far no.

Action #5: More generally, devise an efficient mechanism to impose Tax/Dividend on all externalized costs, not just CO2

- As population grows, and as migration to cities grows even faster, one person's actions impact others in a way which is accelerating over time
- We have no mechanism for the imposed costs on others except for prohibitively expensive to launch class action law suits
- We need a mechanism to tax the source and distribute the punitive and compensatory proceeds to those affected in a low-cost and efficient way. Micro-payments look too expensive to transact. Modified tax laws?
- **As long as we can injure others by our choices and escape paying for it, we'll continue to do it.**

Action #6. Tax Consumption, Not Income

- There is nothing inherently wrong with income *per se*, that it should be taxed.
- There IS something inherently damaging about consumption on a planet which is already using up its resources at a pace far beyond what can be replaced and healed by Nature.
- Climate is just one aspect of this.
- The mechanism to accomplish this is already in place, in the U.S. and many other countries...

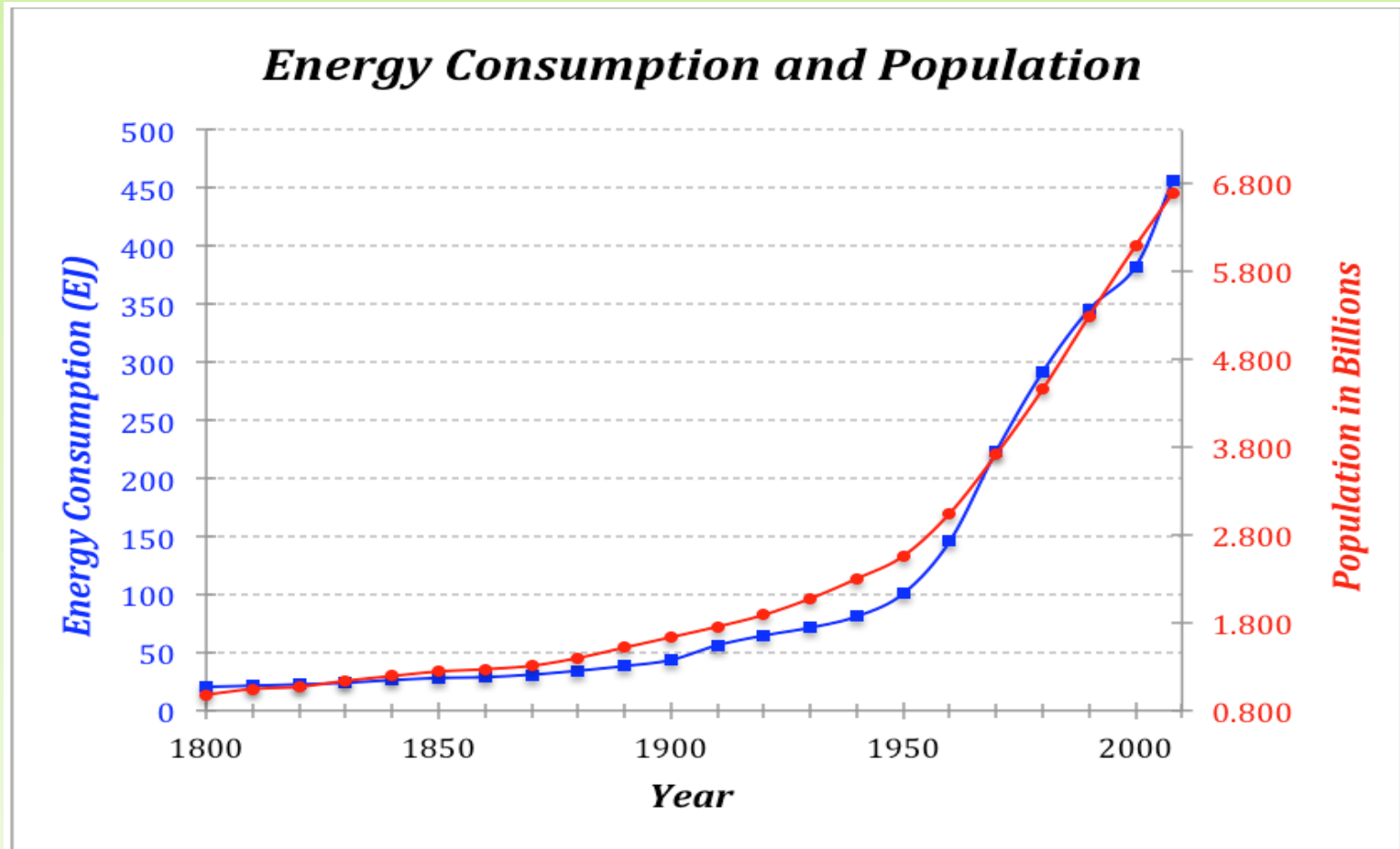
...Sales Taxes are Consumption Taxes

- And the machinery for collecting sales taxes already exists in most states, and our state and federal income tax laws are an abomination to any sane person who looks at the thousands of pages of the IRS Tax Code.
- Political Progressives will complain consumption taxes preferentially tax the poor, who spend a greater proportion of their income on consumption, while the rich tend to invest (or buy influence). That's a social issue I'll not discuss, and no doubt has work-arounds.
- Our goal here is to ask what policies will incentivize a long-term stable climate, and that means much lower consumption by all – rich and poor.

Action #7. End the Child Tax Credit, and promote policies which economically discourage population growth

- The rationale for the child tax credit is to help financially strapped parents with the big expense of child-rearing
- But overpopulation is a key source of the vast environmental and climate problems we have created. Children are adorable, and parents usually find the psychic rewards of having children far outweigh the damage to the Earth that their OWN children will have (remember from Econ 101: “all economic decisions are made ‘on the margin’” *i.e.* “my one kid won’t destroy the Earth”)
- Very true. But such argument can be made individually by all ~billion families on Earth. This “on the margin” reasoning can therefore only be blunted by policy universally enforced.
- Think globally; **The Tragedy of the Commons.**

Energy consumption rate (exajoules per year) is growing faster than global population. Can CO2 be controlled without enforced global population policy? Extremely unlikely



Population Policies Need to be Far More Drastic Than you Might Imagine

- [Bradshaw and Brook \(2014\)](#) did a careful study using detailed demographics for each country, with different scenarios for policy (assumed globally adopted, so see [comment](#)), including what 1-child-per-family, instituted worldwide would do to human population trends.... (see next slide)
- Gradual transition to 1-child-per-family by 2045, together with halting improvements in infant mortality (not realistic unless climate chaos offsets improvements in developed countries?), results in eventual population drop after mid-century, but is still as high as 4 billion in the year 2100.

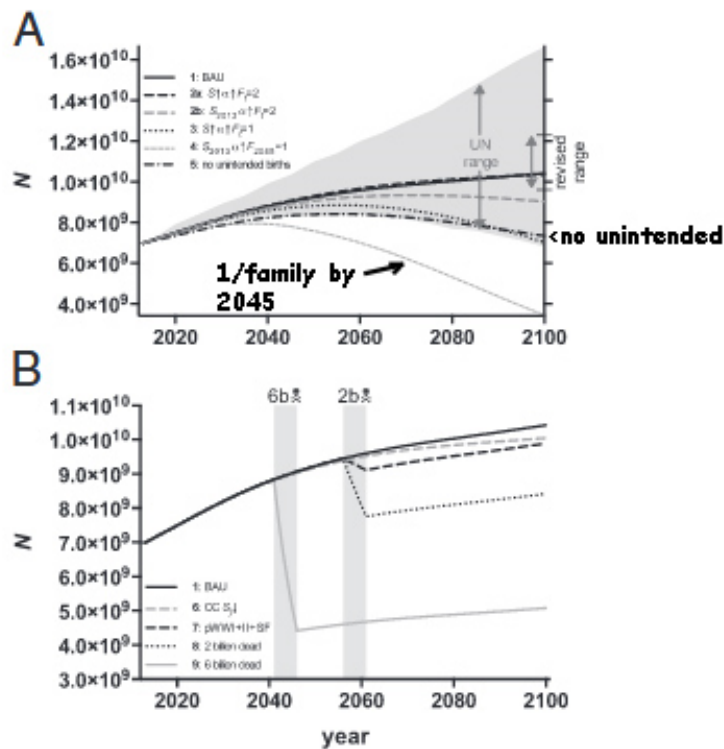


Fig. 1. Scenario-based projections of world population from 2013 to 2100. (A) Scenario 1: BAU population growth (constant 2013 age-specific vital rates); Scenario 2a: reducing mortality (M), increasing age at primiparity (α), declining fertility to two children per female ($F_t = 2$) by 2100; Scenario 2b: same as Scenario 2a, but without reduced mortality; Scenario 3: same as Scenario 2a, but $F_t = 1$; Scenario 4: same as Scenario 3, but without reduced mortality and $F_t = 1$ by 2045 and thereafter constant to 2100; Scenario 5: avoiding all unintended pregnancies resulting in annual births. High and low projections by the United Nations (12) are shown as a grayed area, and the revised range for 2100 (13) is also indicated. (B) Scenario 6: elevated childhood mortality (M_c) from climate change (CC); Scenario 7: mass mortality event over a 5-y period starting 2056, equal to the proportion of combined number of deaths from World War I, World War II, and Spanish flu scaled to the mid-21st century population; Scenario 8: 2 billion people killed because of a global pandemic or war spread over 5 y, starting midway (i.e., 2056) through the projection interval; Scenario 9: 6 billion people killed because of a global pandemic or war spread over 5 y and initiated one-third of the way through the projection interval (i.e., 2041). The mass mortality windows are indicated as gray bars.

Bradshaw and Brook - “Human Population Reduction is not a Quick Fix for Environmental Problems” (2014) . Even declining fertility down to the point of 1-child per family worldwide at 2100, assuming continued improvements in mortality rates, doesn’t begin to dent world population till late in the century.

Even catastrophic multi-billion person die-offs (lower graph), bring us to sustainable levels **only if most people on Earth die.**

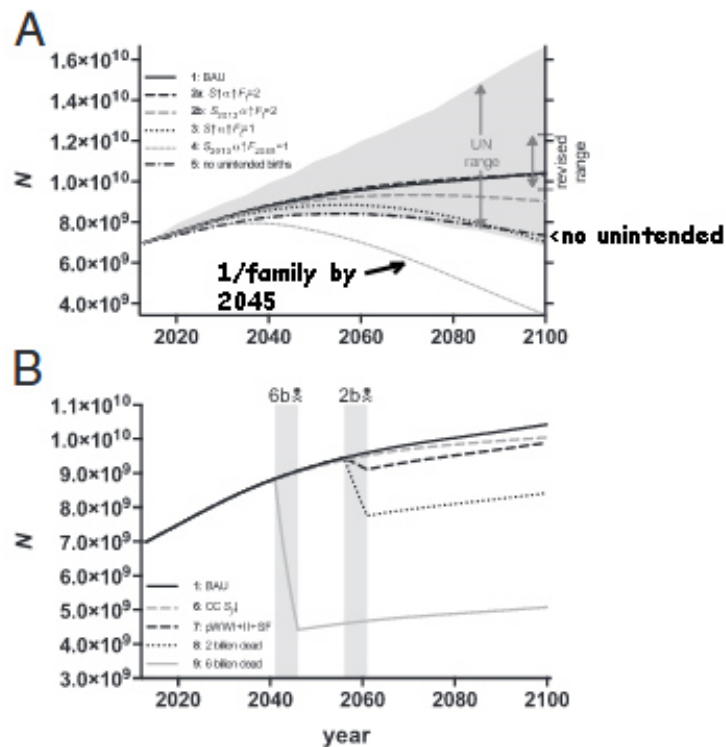


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If, globally, all women are educated and given birth control so that there are no unintended births, still population rises till mid century, and is still as high as today's 7.5 billion by century end. **This shows education isn't near enough – we need legally mandated population control**

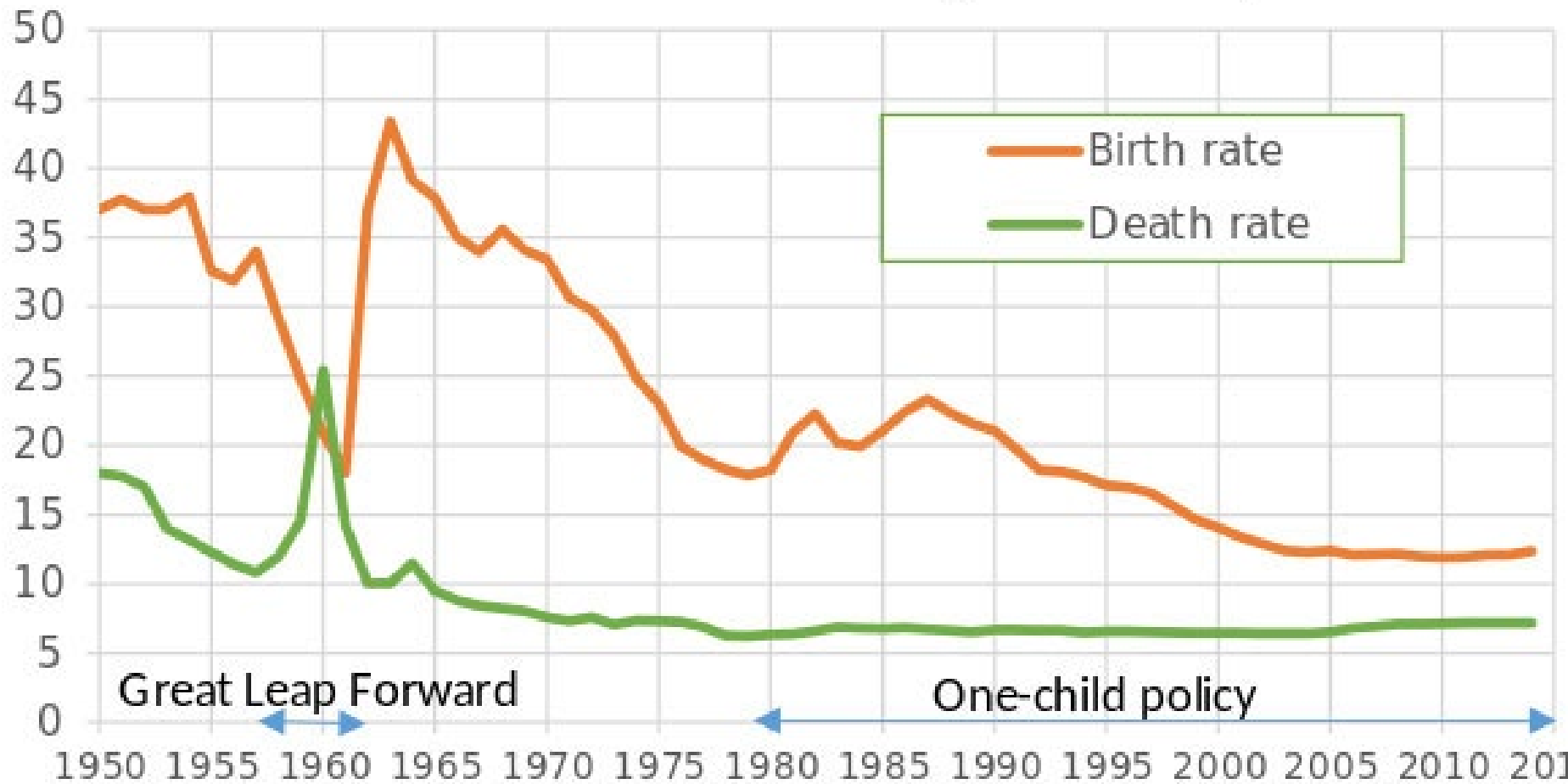
Only if 1-child per family is universal by 2045 and, cruelly, no attempts are made to reduce infant mortality, does population fall - to about 4 billion by 2100. Even this is not fast enough to alleviate the over-stress we're imposing on the planet

Meanwhile, China eliminated its “one child per family” policy in 2015

- The Chinese government claims it prevented 400 million extra births, although scholars dispute this number, and how much of this was due to the policy. How enforceable such a policy is, is also disputed.
- Out-breeding other countries is believed to be a get-ahead strategy by some, in this competitive world, including Mao’s China.
- Is this a good strategy to dominate a dwindling planet, or instead a path to war; as habitable land and resources are over-run and crippled?

China's birth rate has been declining, but actually showed a marked increase in the first decade of their one-child-per-family policy. So, how effective was it, really?

Birth rate in China (per 1000)



Our population, industrial output, non-renewable resources, and pollution are all on “Overshoot-and-Crash” trajectories (see next slide, from [van Vuuren et al. 2009](#) click ‘export’)

Figure 2.2

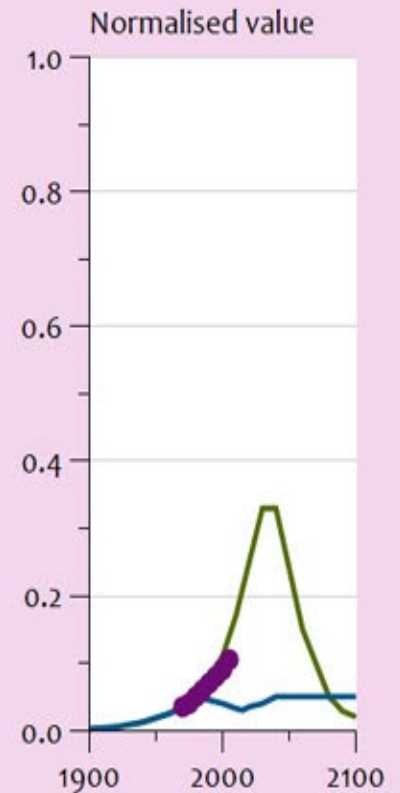
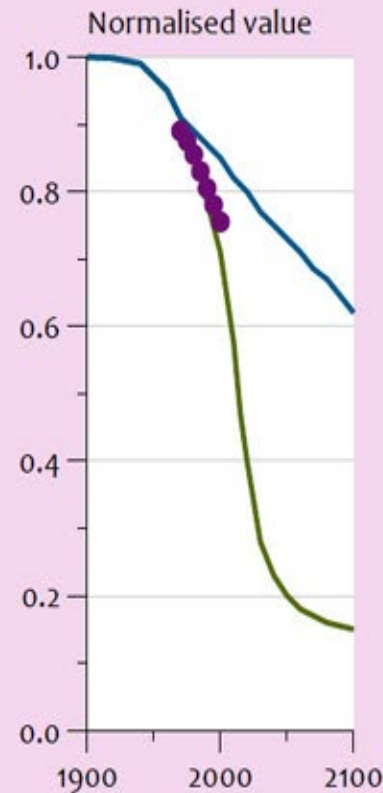
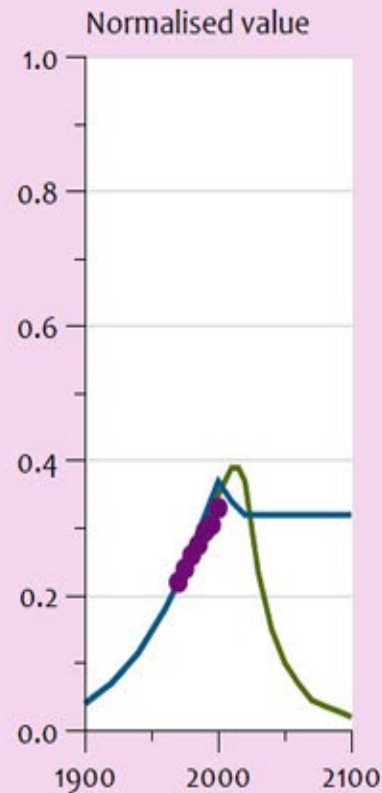
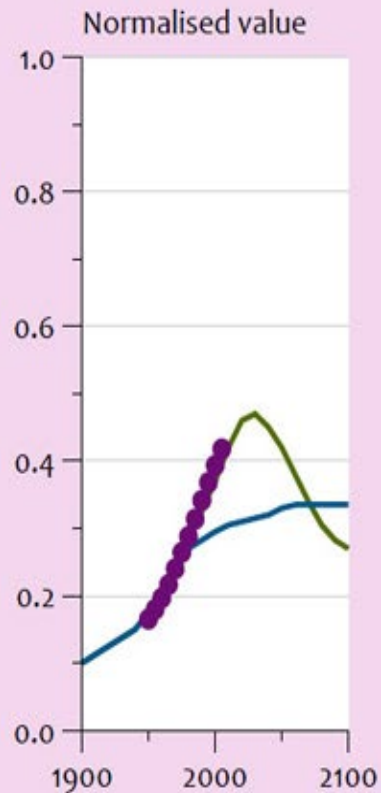
Comparing 'Limit to Growth' scenarios to observed global data

Population

Industrial output

Non-renewable resources

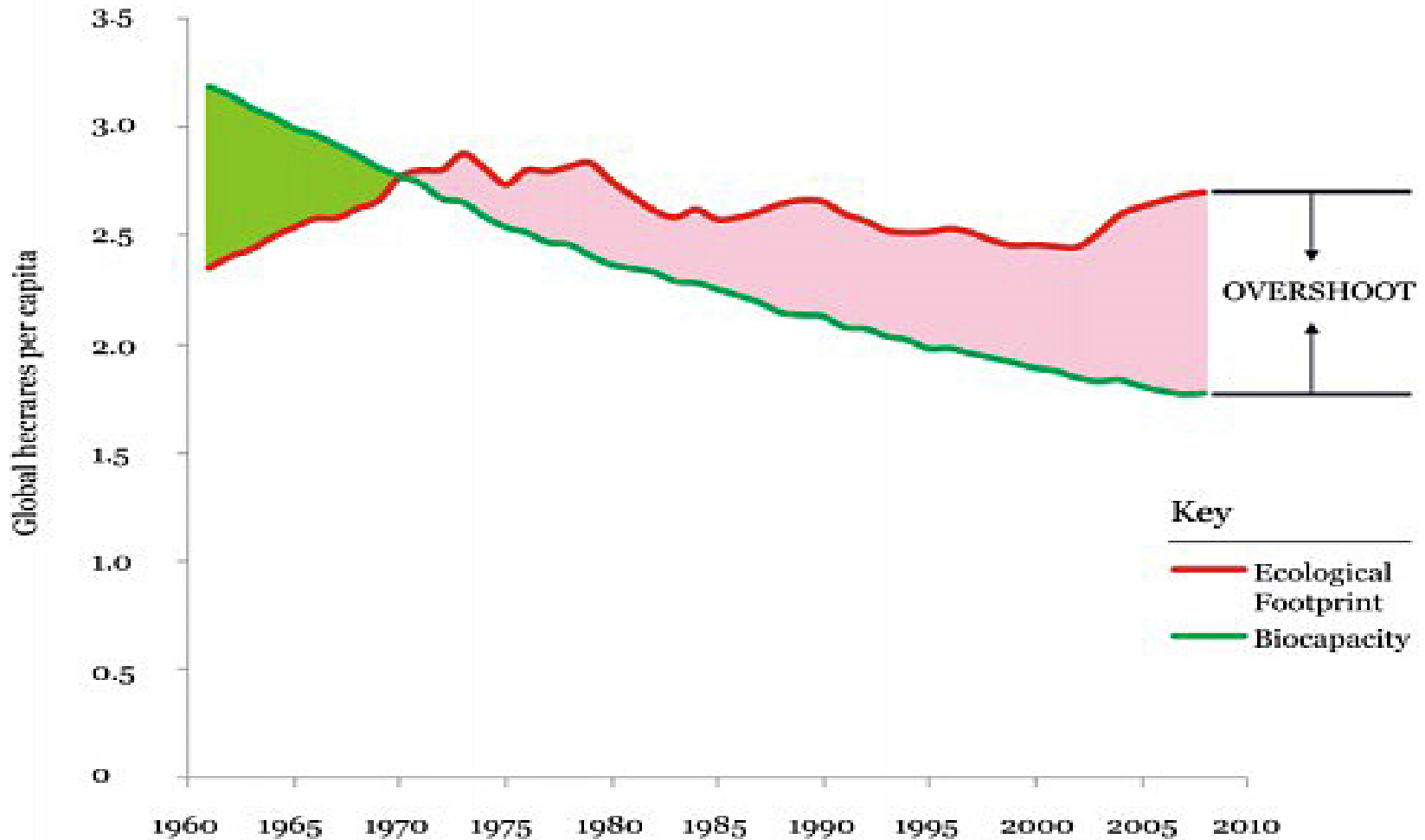
Pollution



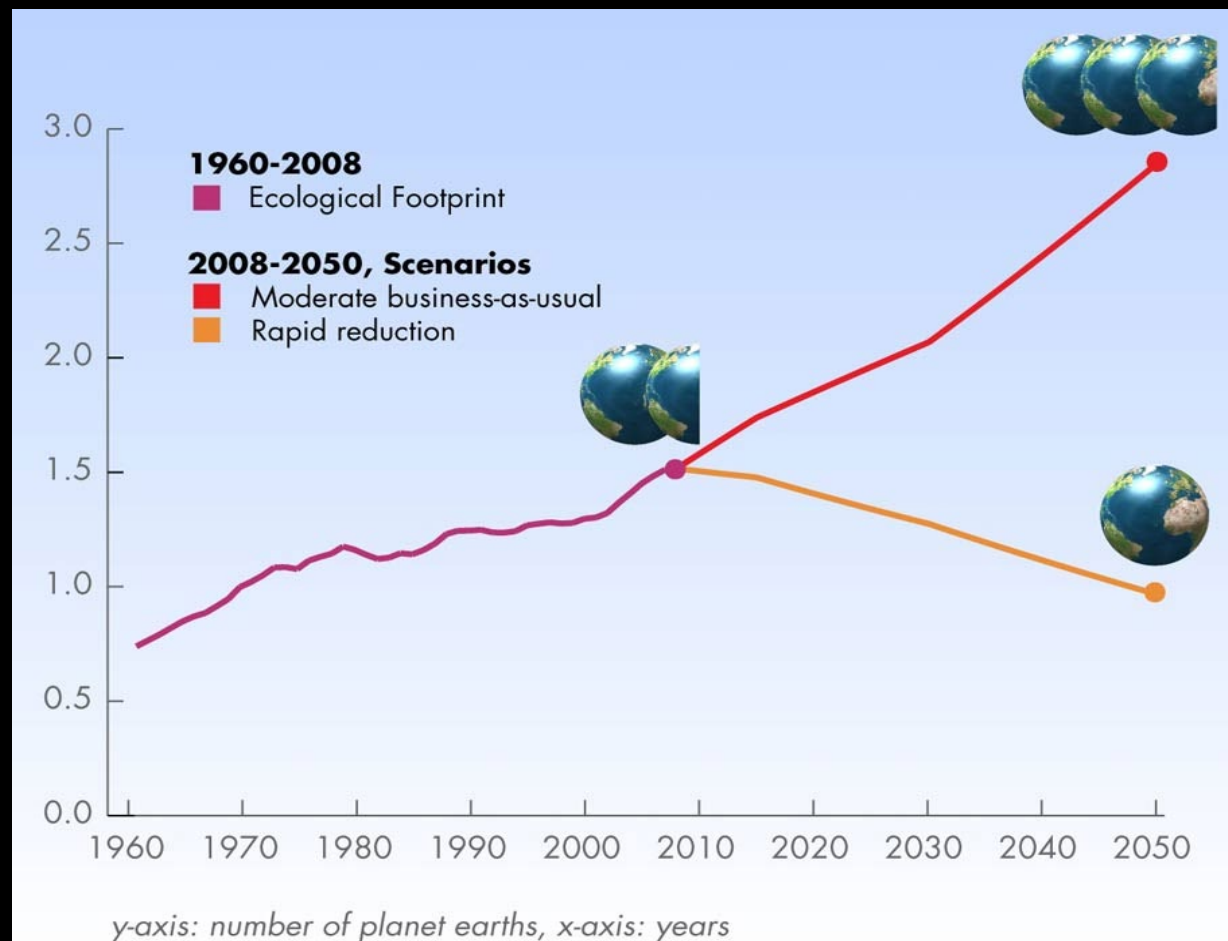
Overshoot-and-Crash

- Previous Slide - From ["Growing Within Limits \(GWL\)"](#) [van Vuuren et al. 2009](#) for the Netherlands Environmental Assessment Agency. Trends since the first GWL assessment was published in 1972.
- The green line shows their model fit to observed data (purple dots) and shows we are on an "overshoot and crash" trend, vs. the blue curve which follows a maximum sustainable (w/o crash) path initialized to 1972 values - for population, energy use, non-renewable resource use, and pollution. The green tracks turn down (even pollution turns down) when humans suffer large de-population.

Present: Humans are over-taxing the ability of the planet to support life. The “green revolution” helped moderate the growing overshoot (red curve declined) from 1977-2000, but now is being swamped by the rising “standard of living” of the 3rd World. All the while, our degradation of the land and ocean is contributing to lowering the *per capita* bio-capacity of the Earth (green curve dropping)



Business-As-Usual can't continue much longer. In 2008 we were using resources at a rate of 1.57x the Earth's ability to renew, possible only by steeply depleting our topsoil, stripping our oceans, and removing thousands of years of fossil groundwater. This 2008 graph is out of date. We did not take the low road shown, we remain on the red upward curve. Latest data: 1.75x Earth's in 2017. This trajectory ends badly.





Reducing the number of people has another aspect...reducing the size of existing people! Obese people use up excess resources just like additional people do. Today, 30% of the global population is obese, and rising rapidly. In the U.S. it's 50%

So, Globally We're Imagined to ...

- ...individually, by the billions, finally, voluntarily engage in severe carbon-limiting behavior, even if it's an economic hardship for ourselves and those that depend on us, and even though our **individual** independent actions make not the slightest difference to climate...?
- **Really?** Am I the only one who's deeply skeptical of such a persistent fantasy?
- **Realize** - these same people, by the billions, are refusing to summon the will power to save their own health, by eating healthy. We can't control the voluntary actions of others, but we can control our own health to a very large extent. So, I find this climate solution fantasy virtually certain to continue to fail. **How much precious time, which we still imagine we have, has been wasted in such fantasies?**

And Getting People OFF Junk Food Will Be Tougher than You May Think...

- ...Since climate change will be turning our staple crops, the very crops most of the world depends on for food - into Junk Food
- ...Diabetes-inducing carb content will rise, while protein and other nutrients will fall, in C3 crop plants, according to a number of studies, including this study published in *Nature* by Meyers et al. 2016
- As scarcity of food rises, this junk food trend will continue

Action #8: Change Federal Reserve (and Globally, other Central Banks) Policy Goal: To Induce **NEGATIVE** Inflation

- The U.S. Federal Reserve policy has a stated goal of +2% inflation per year, because that makes savings worth less and motivates you to cut savings and **spend**, or put it into the stock markets (where high frequency trading 'bots become like ticks, feeding off your savings).
- But economic growth is the enemy of climate. So change fractional reserve rules to lower lending, not encourage it, making savings more valuable, thus pulling money from risk assets back to savings.
- Cut economic growth voluntarily rather than have it forced on us by overshoot-and-crash: in resources, in climate change, in financial bubbles...

Action #9: Create an Independent Science-Staffed, Publicly Funded Fact-Checking Institute for All Political Claims

- Effective Democracy demands literate, informed citizens.
- If, as I've argued, painfully enforced government action is necessary for a livable climate future, then the endless lies must be exposed by a credible, politically non-aligned independent source.
- **Every political rally and speech needs to be immediately subject to a buzzer-halt when the fact checkers expose a lie, and not 3 days later buried on page 42 of the newspaper.**

Expose lies promoting techno-climate "solutions" to attract investors, yet in fact damage the Earth

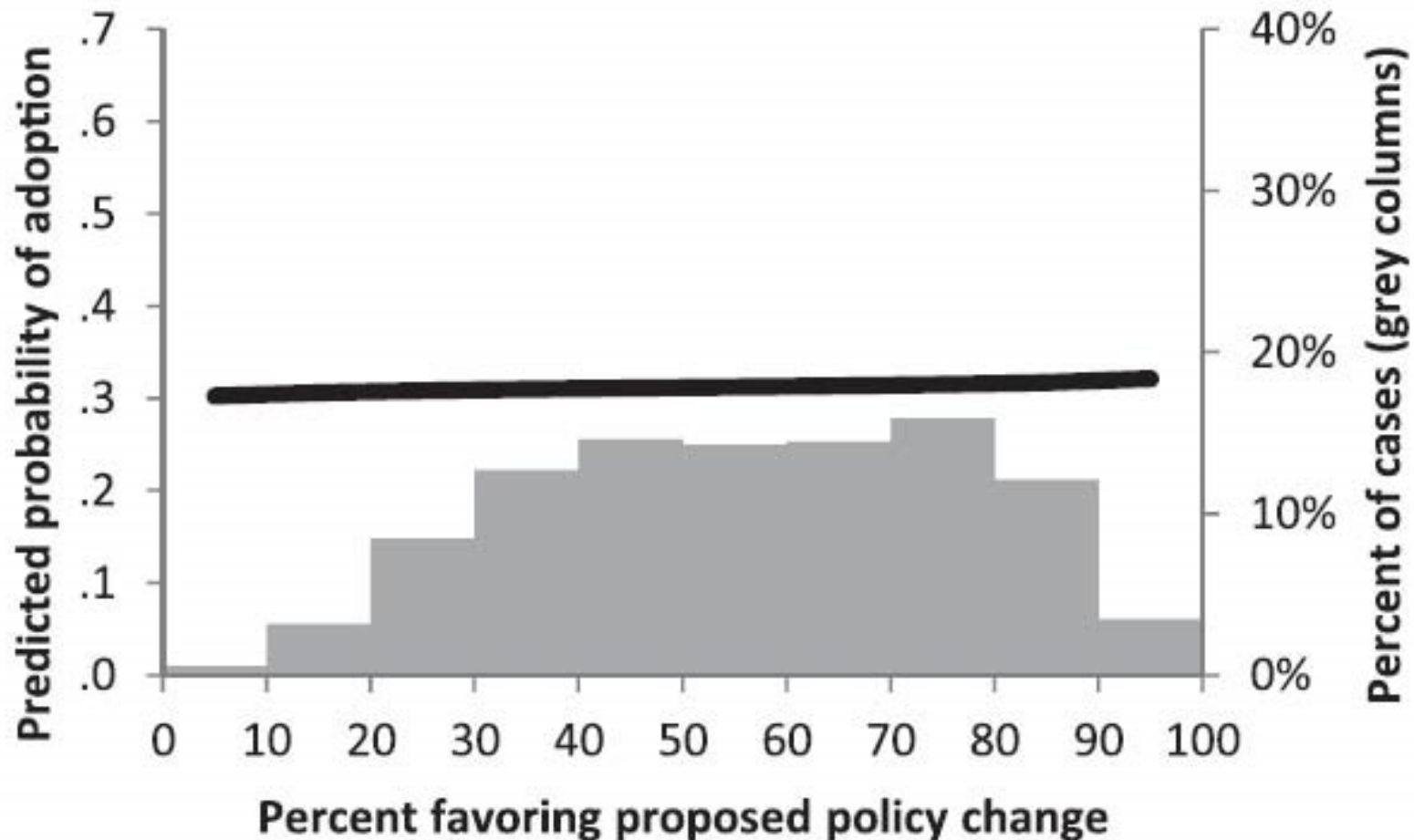
- Clearly, this is not a job for profit-based media, and too big for the occasional honorable bloggers.
- It needs to be formalized and carefully designed so as to be above biased manipulations.
- I'd suggest the leaders in this Fact-Checking Institute be chosen from scientists voted by their peers as the most fair-minded and have a long record of honorable investigations.

How to Bring About These Policies?

- The hard evidence proves it is certainly not by politely asking “please”, hat-in-hand, of our lawmakers...
- Princeton / Northwestern University researchers ([Gilens and Page 2014](#)) studied the key variables of the 1,779 policy proposed and passed contained in congressional legislation bills with the needed data for their study; all such bills between 1981 and 2002 (most of these years the Democrats held a majority in Congress, where bills originate), , and found that the desires of the average citizen had a “miniscule, statistically insignificant” (i.e. zero) correlation with what legislation was actually enacted.
- **ZERO CORRELATION.**
- Instead, enacted legislation had very high correlation with what was desired by the **Economic Elites** and their lobbies.

Regardless of whether average citizens hated or loved a policy proposal, their influence had zero correlation (flat line) with whether the policy was enacted (Gilens and Page 2014). This is arguably THE most important graph in the entire field of Political Science.

Average Citizens' Preferences



But the influence of Economic Elites correlated almost perfectly (correlation coeff =0.78) with what was enacted. (Perfect=1.00)

Economic Elites' Preferences

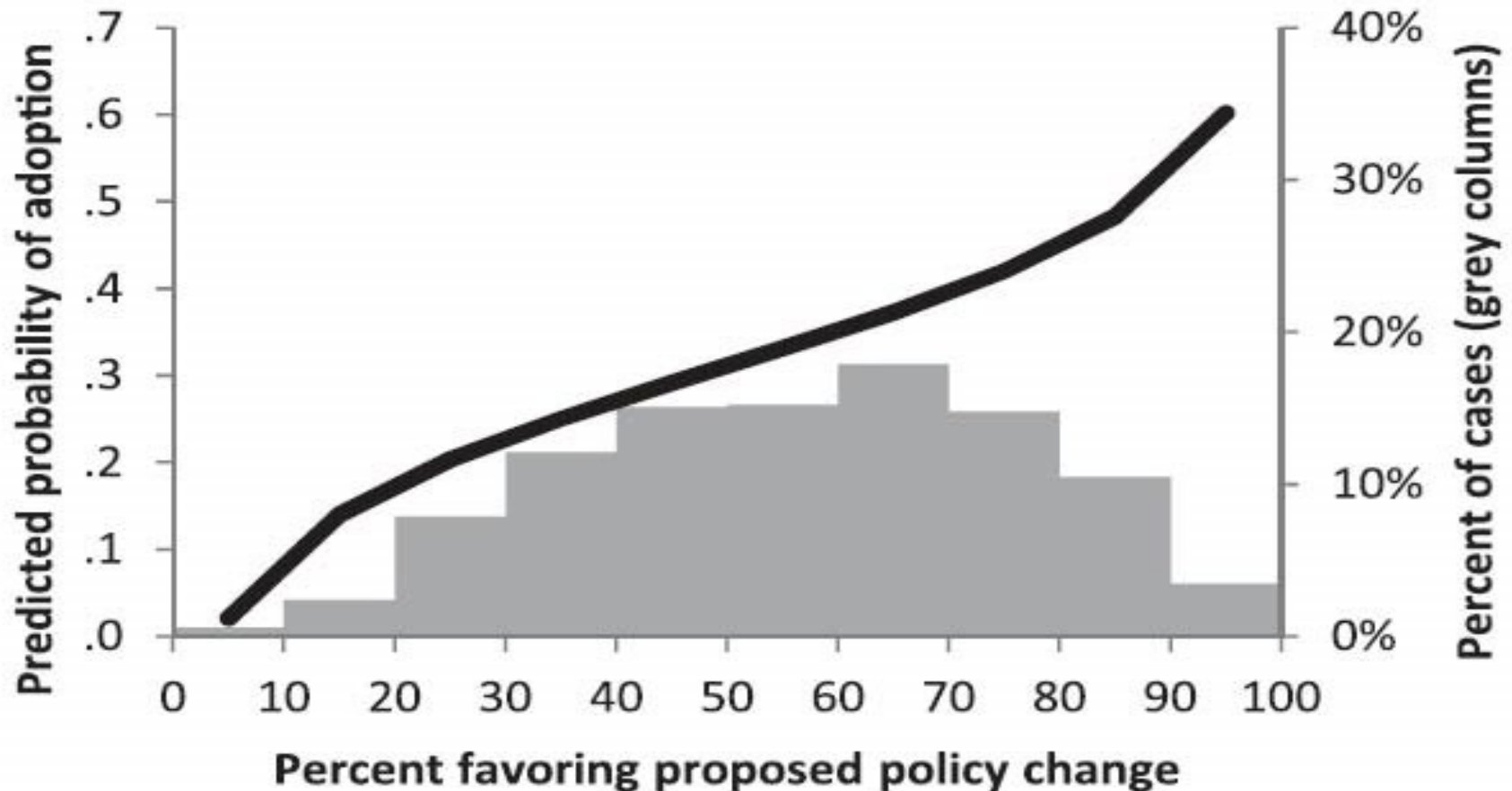


Table 4

The separate policy impact of business-oriented and mass-based interest groups

Average citizens' preferences	.05 (.08)
Economic elites' preferences	.78 (.08)***
Mass-based interest groups	.24 (.07)***
Business interest groups	.43 (.08)***
R-sq	.07

***p<.001

Note: All predictors are scaled to range from 0 to 1. The dependent variable is the policy outcome, coded 1 if the proposed policy change took place within four years of the survey date and 0 if it did not. Predictors are the logits of the imputed percent of respondents at the fiftieth ("average citizens") or ninetieth ("economic elites") income percentile that favor the proposed policy change, and the Net Interest-Group Alignment Indices described in the text. Standard errors are asymptotically distribution-free, and all analyses reflect estimated measurement error in the predictors, as described in Appendix 2. N=1,779.

***Average Citizens: ~0 correlation.**

***Mass-based lobbies, (like CCL, 350.org): not much better; 0.24 correlation).**

***Business interest groups, significant (0.43) correlation.**

***Economic elites: very strong (0.78) correlation**

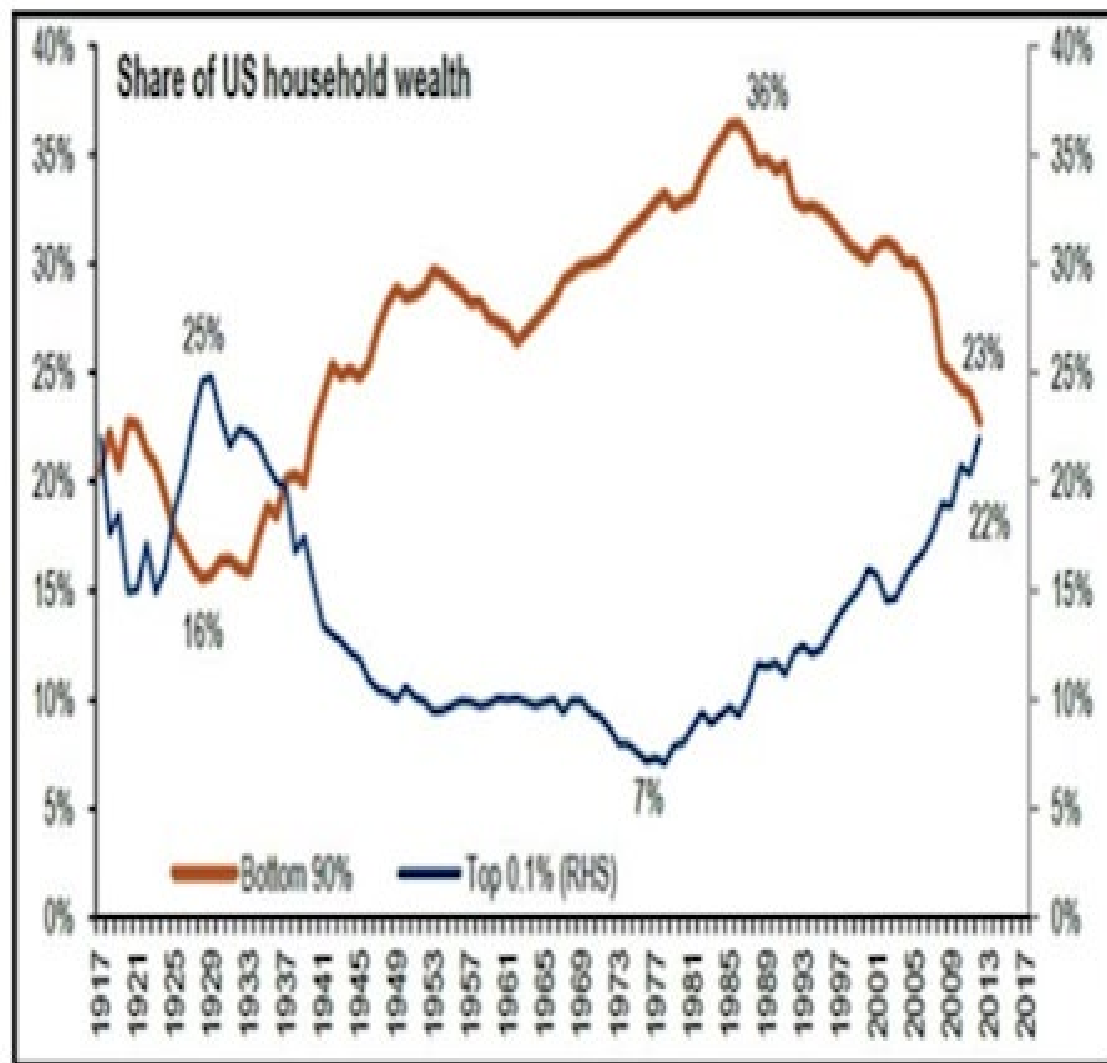
Most Important for Climate...

- Notice the left end of the previous graph; that **when economic elites and their lobbies were the primary group strongly opposing a bill, it had a 0% chance of being enacted.**
- **The Economic Elites were 100% efficient in stopping legislation they strongly opposed.**
- Today, the Economic Elites are mainly the right-wing ideologues who strongly oppose climate science, attack scientists, and fight government interference in fossil fuel business (except for huge government fossil fuel industry subsidies – they're OK with that part)

To Clarify the Work of Gilens and Page (2014)...

- Their goal was to measure the **INFLUENCE** of these groups on the goal of seeing their more favored legislation be more likely to get enacted.
- There is often overlap, for example, between what the “Economic Elites” (**top 10%** of income earners) want and also average citizens, and this was specifically corrected for, in order to measure the **INDEPENDENT** influence of these different groups.
- In other words, they wanted to measure how effectively we, as a democracy, are getting what we want from our legislators.
- This neutralizes the **criticisms of critics**, after the original publication, as rebutted by Gilens and Page **here**.
- **Gilens also contends that while they found it impractical to try to measure the opinions of the top 1% or 0.1% “super rich”, they cite other evidence indicating the correlation would be even stronger for this group.**

Figure 2 Distribution of Wealth in the US, 1917-2015



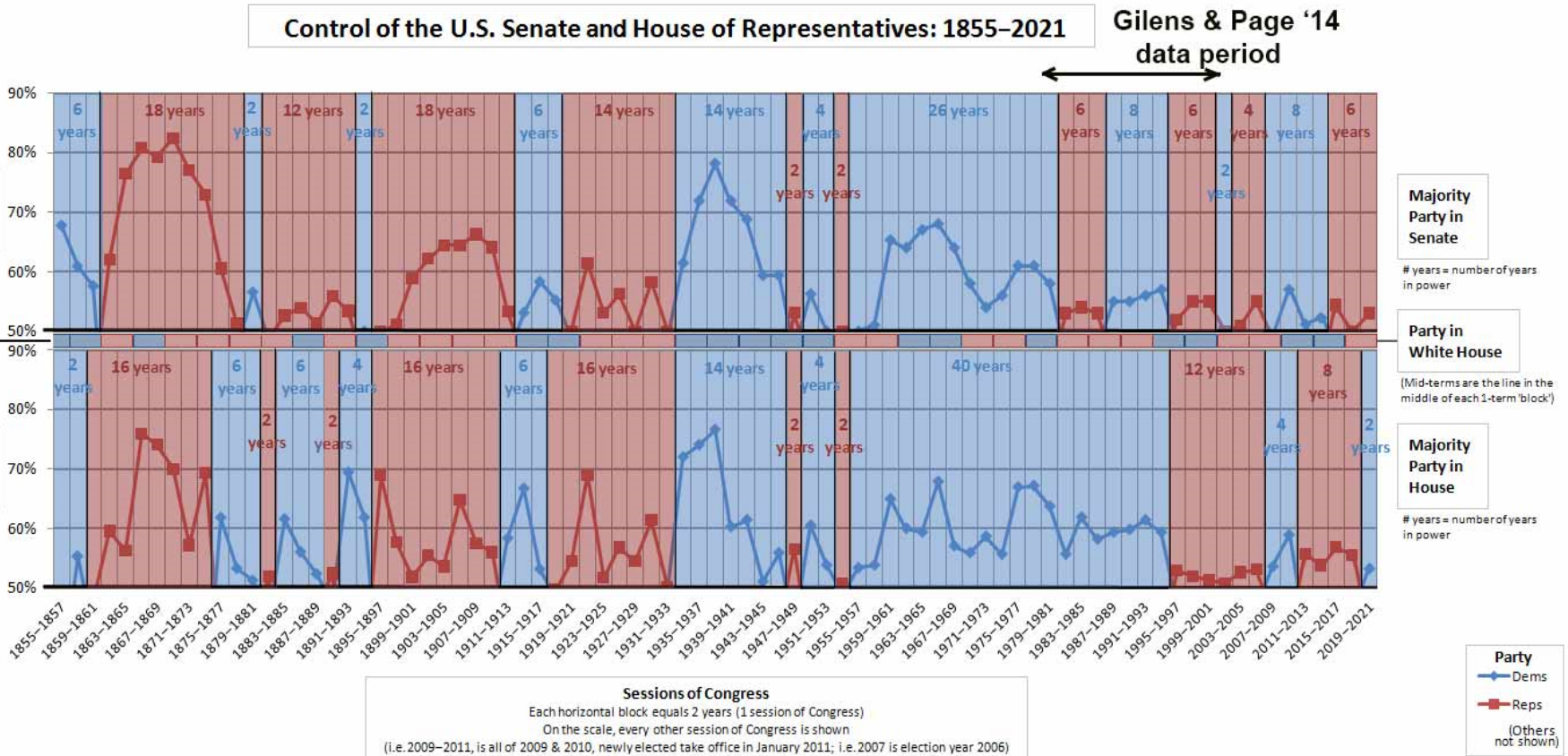
Source: BofA Merrill Lynch, Emmanuel Saez & Gabriel Zucman

Since Ronald Reagan, there has been a massive transfer of wealth from the bottom 90% to the top 0.1%, along with the political power that wealth buys

Don't Just Blame the Republicans

The Gilens and Page (2014) 20 year data (1981-2002) had more Democrat-dominated Congresses than Republican.

Remember: Legislation originates in Congress.



So what chance does “Write your congressman” actually have in getting enacted the policy ideas we’ve discussed?

- What has “Write your congressman” accomplished so far? Have we gotten action, or just stall tactics, empty promises, handshakes, and the rest of the artful dodging obvious for over 30 years since James Hansen’s testimony before Congress in 1988?
- I leave that as an exercise for the student.

OK, exercise over – here's the answer:

- The evidence is overwhelming ... ([YouTube Condensation](#))
- Here are Gilens & Page's detailed answers to some rather weak criticisms ([2016](#)).
- Worth re-emphasizing, is that their work corrects for the coincidental correlations between the economic groups; *e.g.* the common citizen and the Economic Elites sometimes want the same things. The Gilens and Page correlations are the INDEPENDENT correlations, meant to measure the actual political influence on legislation, that each group has.

Your Influence on Legislation?

There is ZERO Correlation

I will not be convinced people actually have, as their **ACTUAL** primary motivation (conscious or unconscious), the halting of climate change until they face this brute fact and stop the futility of doing the same thing over and over and getting the same zero result, as our planet tips over the edge. It is not noble to hope that banging your head against a brick wall will break the wall before it breaks your head... and your heart

- *“We Are What We Repeatedly Do” – Aristotle*
- What does that say about your Congressperson’s integrity?

To Address the Claim that Meetings with Congressmen are Productive...

- I've heard this belief voiced by some political activists.
- Do you not realize that congressmen can speak out of both sides of their mouths? That they can convincingly project their support for *e.g.* carbon tax/div in meetings with voters, and simultaneously follow the desires of their corporate sponsors to make sure nothing gets passed, or even brought up for a vote?
- These people are **PROFESSIONALS** at this. Like **“The Terminator”** – **“It’s What they DO!”** That’s how they got to be the most politically powerful people in the nation. They are **expert** at this sort of deception and manipulation.
- For example, vote-trading to be sure they can posture to voters, while simultaneously insuring the votes aren’t there - no legislation happens which offends their corporate sponsors.
- **End the naivete. Realize the nature of who you’re dealing with, and the laws they’ve enacted to insure this game continues.**

One Would Think...

- ...that those at the bottom of the socio-economic ladder would be the most enraged about this state of affairs.
- Unfortunately, they are instead the most easily duped by the tactics of those in power.
- While only 28% of Americans give a positive approval rating of Congress, this number is an average, and turns out there is the most approval among those who are the least informed of what Congress actually is and does, according to a 2015 Gallup study, titled: “The Knowledgable are the Most Negative About Congress” (quoted next slide)

Widespread belief: “Other Congressmen may be corrupt, but not mine”

- *“What is far more meaningful was [Gallup’s survey about Americans’ perceptions about corruption in Congress](#):*
- *“**52 % thought that most members of Congress are corrupt, but only 32 % thought that their own particular member of Congress is corrupt. Obviously, if the perceptions on that matter had been correct nationwide, and 52% of Congress is corrupt, then 52% of the survey’s respondents should have been saying that their own Representative in Congress is corrupt (RN: No, not strictly to be expected, but on average not far off).***
- *“In other words: the U.S. public are widely deceived to believe that their own Representative is not corrupt but that a substantial majority believe that “Congress” is corrupt. (52% say that Congress is “Corrupt”, versus only 42 % say it’s “Not corrupt”)*
- **These findings re-inforce the understandings described in [K40b – The Psychopathologies of Climate Denial](#)**

Does Gilens and Page (2014) Prove Your Congressman is Corrupt?

- **No. Of course not. So let's not argue about our local congress people.**
- Zero correlation can arise from some congressmen mostly voting in favor of the average voter's wants, while an ~equal number voting mostly against what the average voter wants.
- Your individual congressperson, on climate, may indeed be honorable - that is at least possible! But then, if he/she IS already honorable then he/she certainly should already understand how important climate policy is.
- And that means, that the write-your-congressman strategy is only preaching to the choir, and is once again futile in making any progress.
- **Congress only does what Congress as a whole decides. It is the system which is corrupt and must be changed.**

Congress Makes the Laws that Control Congress

- Including laws for campaign financing, “dark pool” money sources, influence peddling, slap-on-wrist punishments, and everything else
- The system does not reward “the good”, it rewards the most powerful. But each new generation seems to begin with naive hope, only to watch the same sad dramas play out over and over. Wisdom only comes, if at all, shortly before old age and death.
- **I’m Sorry Deal with it!**
- It’s really simple. If you find it hard to accept, perhaps study up on **Stockholm Syndrome**

From a New Book by an Anonymous Democratic Congressman...

- *"Most of my colleagues are dishonest career politicians who revel in the power and special-interest money that's lavished upon them."*
- *"My main job is to keep my job, to get reelected. It takes precedence over everything."*
- *"Voters are incredibly ignorant and know little about our form of government and how it works."*
- *"It's far easier than you think to manipulate a nation of naive, self-absorbed sheep who crave instant gratification."*
- *"Fundraising is so time consuming I seldom read any bills I vote on. Like many of my colleagues, I don't know how the legislation will be implemented, or what it'll cost."*
- *"We spend money we don't have and blithely mortgage the future with a wink and a nod. Screw the next generation. It's about getting credit now, lookin' good for the upcoming election."*

If you insist on believing Congress really does care about what the American people want, you may need to reconsider how to invest your efforts

- As just one example– the 2017 Republican health care bill, which would have thrown ~25-30 million Americans out of health insurance was wildly unpopular: only 17% of Americans wanted it and only 12% of voters wanted it), and yet it came within 1 vote of passing the Senate.
- Do you think this sort of incredible behavior is new?
- Consider...

“The money powers prey upon the nation in times of peace and conspire against it in times of adversity. The banking powers are more despotic than a monarchy, more insolent than autocracy, more selfish than bureaucracy. They denounce as public enemies all who question their methods or throw light upon their crimes. I have two great enemies, the Southern Army in front of me and the bankers in the rear. Of the two, the one at my rear is my greatest foe.”

- Abraham Lincoln

(the first Republican President. Bad then, worse today. We're not going in a good direction.)

Politicians Promises vs. Reality, on Subsidies to Coal

- As just one example, consider **the promises** of the G20 nations (the ~richest most powerful 20 nations) 10-20 years ago, that they would END all subsidies for fossil fuels.
- **The Reality:** They've tripled the subsidies to the coal industry, despite intervening promises under the Paris Accords.
- They get away with it by indulging our ongoing gullibility. They pay attention to what works. We citizens... don't. We are earnest, respectful, kind... and as gullible as can be imagined.

Do You Want More of the Same?

Then Keep Doing What You're Doing!

**Conventional Thinking and Conventional
Write-Your-Congressman tactics have gotten
us to where we are today.**



**None of
this
means
you
shouldn't
bother to
Vote. It's
easy, so
do it**

Let's Make That Clearer...

- I'm hearing that some students are reporting that I'm saying voting is futile. **NO.**
- Clearly there are candidates who have better (vs. worse) climate policy ideas. They should be voted for.
- Realize too, that the **Gilens & Page 2014** “zero correlation” could have been worse than zero... we could have seen that the average citizen's desires had a negative correlation with what was enacted – in other words, that the more you and I want a piece of legislation, the LESS likely it would be enacted.
- So it's definitely worth voting for the better of two candidates. **If you instead stay home, you insure the election of the worst – and that gives us even less time before disaster. Don't let 2016 happen again.**

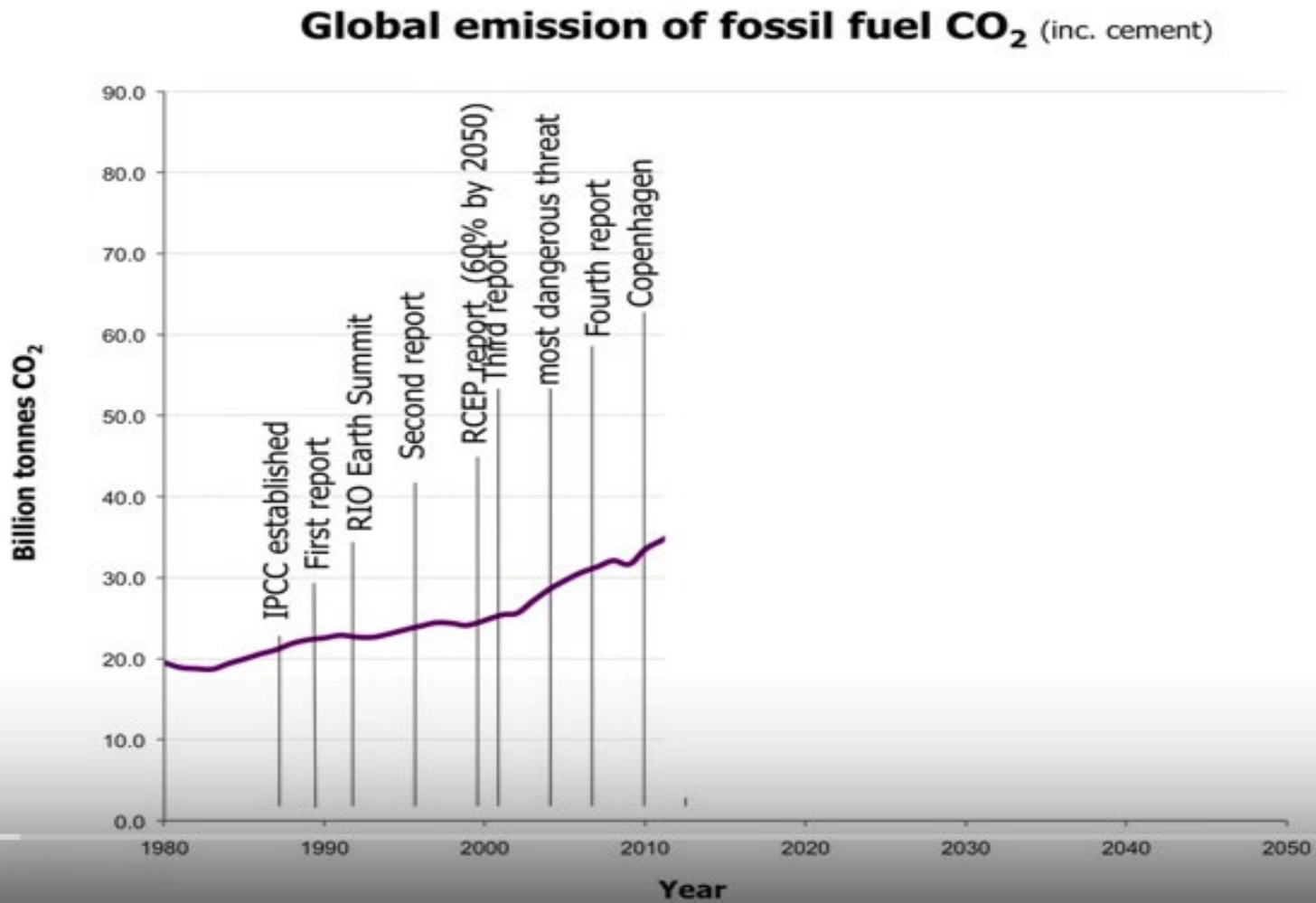
Ronald Reagan on Climate

- In 1979, after being told by climate scientists that climate change will be seriously affecting life by **40 years** in the future (*i.e.* today) Reagan's response was ***“fine...Get back to me in 39”*** ([this quote is 39 minutes into this BBC documentary](#)).
- ...which only confirms once again ***Nolthenius’ First Law: “People Learn the Hard Way”***. For climate, the schooling will be devastating. The inertia of the vast climate system guarantees it.

Mathematical Game Theory Says Climate Negotiations will Continue to Fail

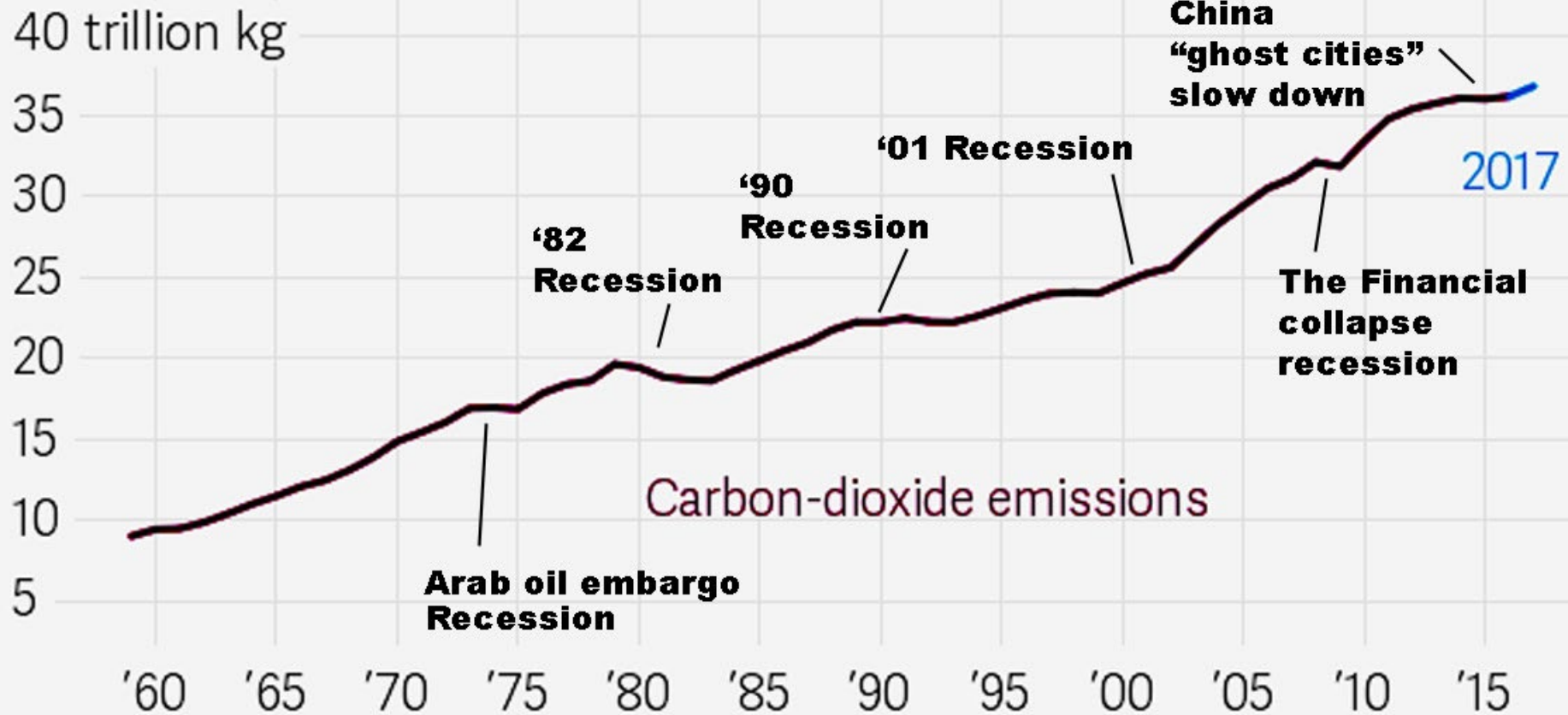
- A study applying Game Theory and Nash equilibria (remember, “A Beautiful Mind”?) finds that climate negotiations will fail. Experiments with real individuals verified this, as does everyday real-world headlines.
- When given climate-mimic’ing realistic rules and choices, including a realistic amount of uncertainty as to when we hit the tipping point before then climate catastrophe is inevitable, competitive **negotiators will not do the right thing.**
- Why? Selfish interests - trying to get the other guy to make the carbon sacrifice instead of you.
- A new study using game theory finds the same, *i.e.* “People Learn the Hard Way”, and that we’ll only change after disaster arrives.
- In a system of competitive players within a global competitive atmosphere, this is MAD.
- Mutual Assured Destruction is the result.
- Read the details here

So we shouldn't be surprised to see the rate of CO₂ emissions are rising steeply despite the continued climate Summits and IPCC Assessment Reports. Not just total CO₂ emission, but emission rates per year (below), have **DOUBLED** (as of '20) since the formation of the IPCC



It's Only Recessions That Make a Small Temporary Dent in Emissions...

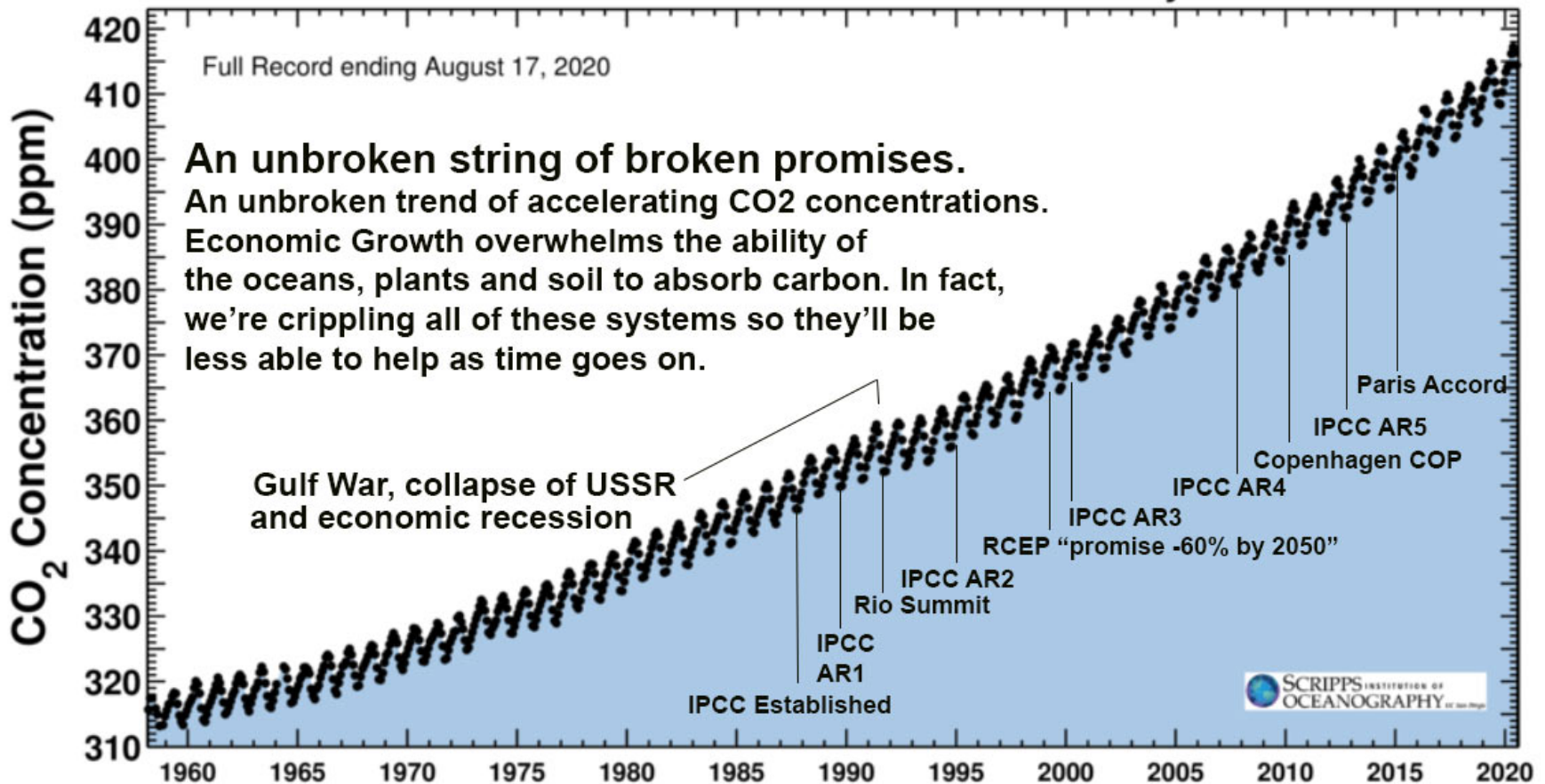
Global carbon emissions from fossil fuels and industry



...Not the Much Bally-Hoo'ed Glad-Handing Climate Summits

August 17, 2020

Carbon dioxide concentration at Mauna Loa Observatory



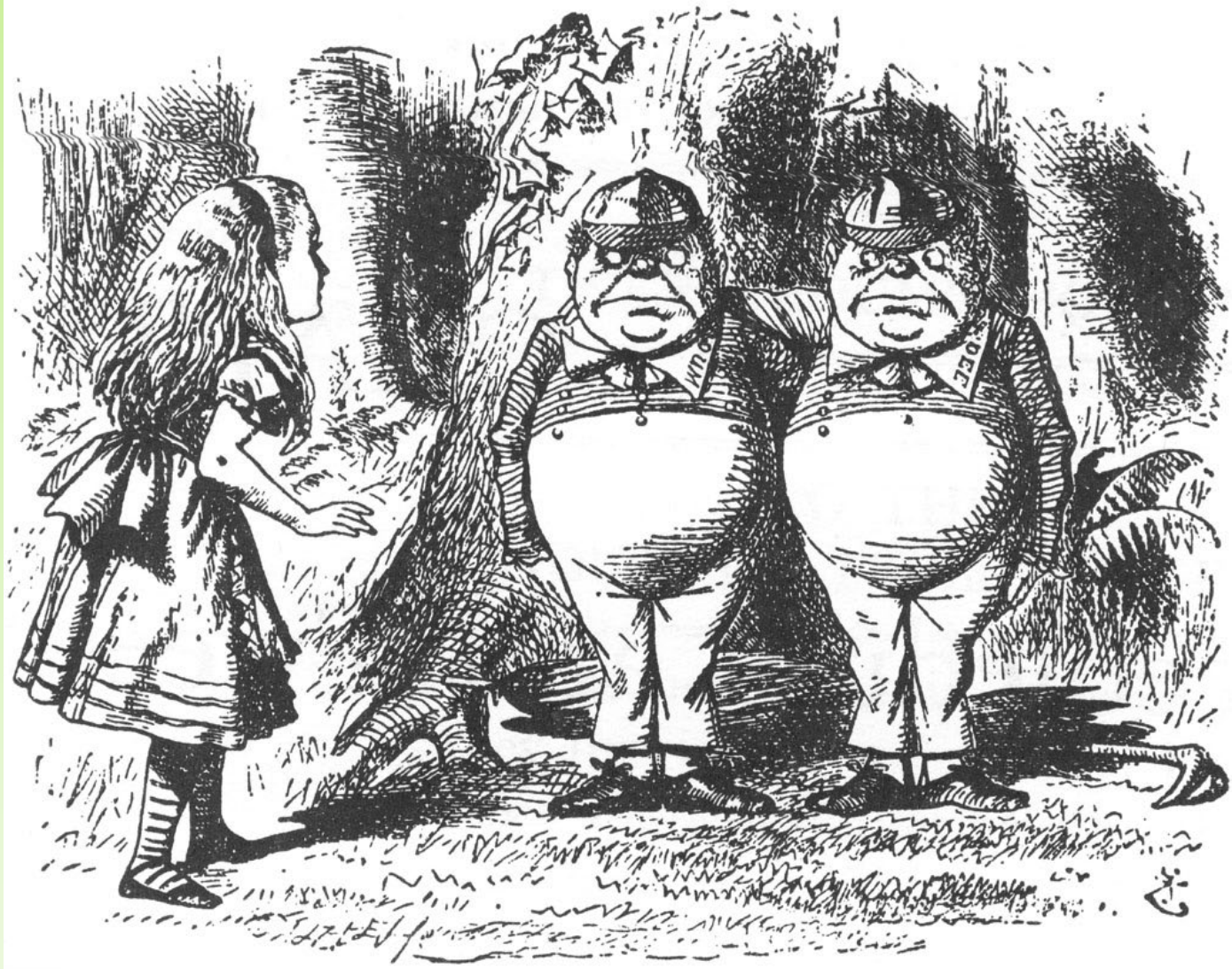
But there was great hope by some that the 2015 COP 21 Paris Summit would finally result in enforceable and significant carbon reductions

- Hope not well placed, in the judgment of most climate scientists, given the evidence.
- A large amount of the funding for the Paris summit came from the Fossil Fuel Industry and major carbon emitting corporations
- This was also true at the previous COP 20: the **Warsaw Climate Summit** of 2013, where the obvious disinterest in making any commitments resulted in a walkout by environmentalists.

A Fact Overlooked...

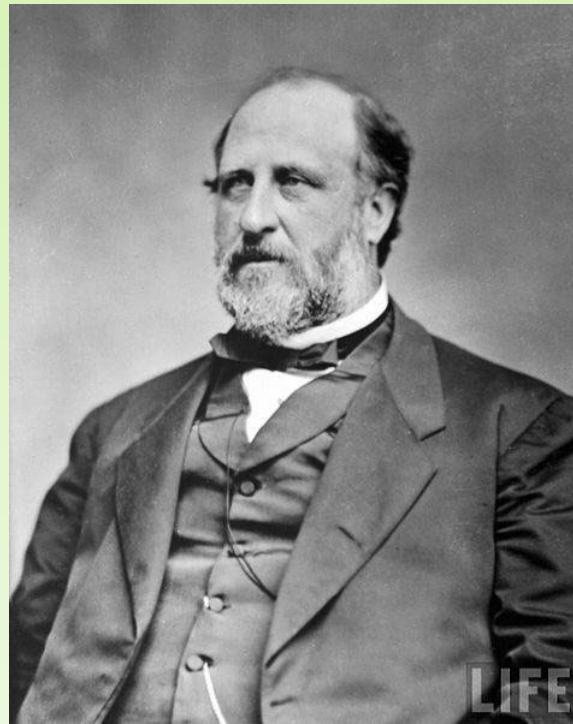
- We are so proud of how we conduct free elections, and that **We the People** elect their leaders, intelligent or not, competent and moral or not.
- But once elected, those politicians have no legal mandate to obey what the voters want. And clearly, that shows in these results
- Clearly, once in office, elected politicians do what their paying sponsors want. And their sponsors are the **Economic Elites** and their corporate lobbies.
- The People only have the freedom to re-elect them years later, or try yet again with some other politician instead.
- The People only have the power of which nominee gets elected (well, except for Bush in '00 in Florida, Bush in '04 in Ohio, Trump in '16... etc.)

We can vote for Tweedle Dee, or for Tweedle Dum. That's our choice.



***“I Don’t Care Who Does the
Electing as long as I Get to
Do the Nominating”***

- Boss Tweed (circa 1870)



But the People do NOT have the power to control what Tweedle-Dee-Dum DO, once in office

- – not in a representative democracy.
- The **Gilens and Page (2014)** study results were released in Spring '14. It got a flurry of attention in the press at the time, **but the Complacency of the People is a mighty force to be reckoned with.**
- Like climate itself, it was just a headline to sigh about.... And then forget.

While Some Strive to be “Respectful” to our Republican Politicians...

- ... seeking “dialog”, looking for “common ground”... and so, the can gets kicked down the road yet further
- But more reality-oriented observers are not surprised when their agenda comes into focus:
- The Trump administration in 2018 was announcing just how cynical has been their strategy: Deny, delay, scapegoat, until they can finally push the Earth over the “finish line”, so they can revise their story one last time - that climate ruin is “inevitable”, so why not just stick with more fossil fuels.

The Proper Response

.... to morally outrageous behavior

Is MORAL OUTRAGE

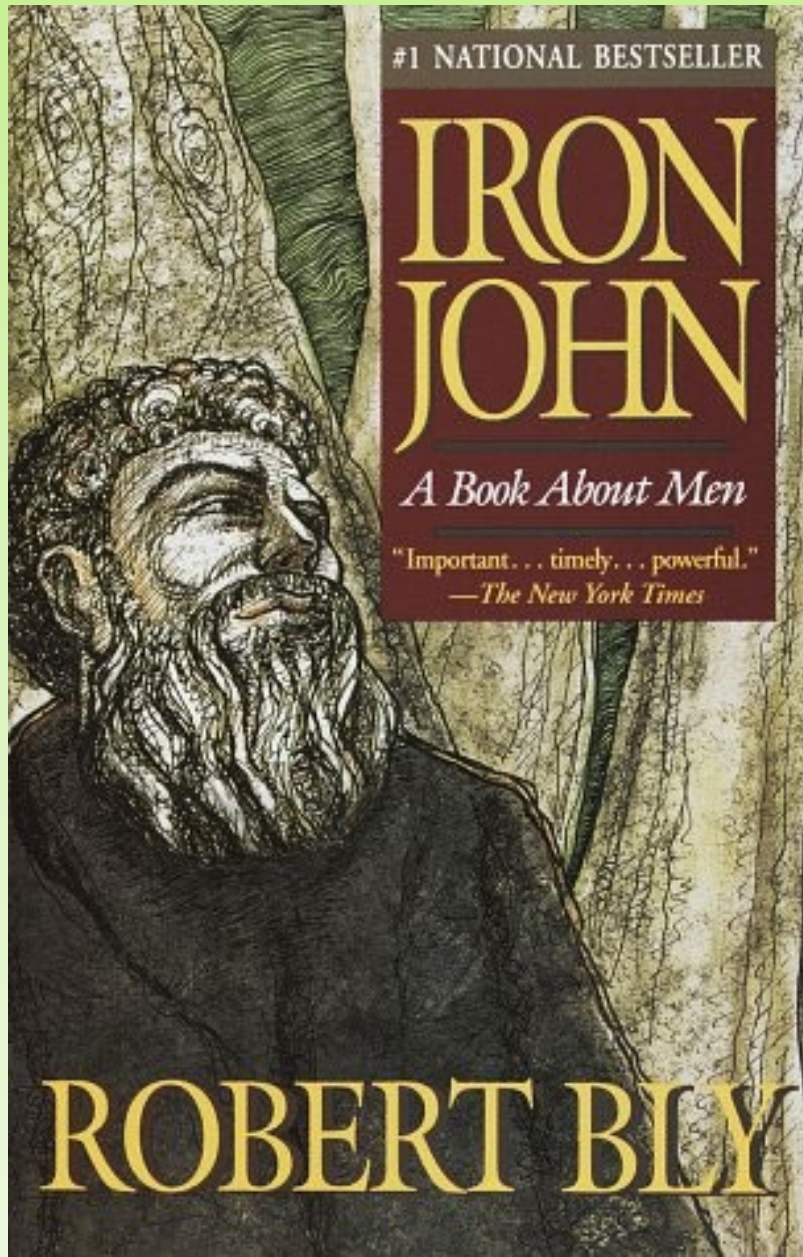
Where is the moral outrage, I ask you?

This brings us to a key observation...

“At a time like this, scorching irony, not convincing argument, is needed. O! had I the ability, and could reach the nation's ear, I would, to-day, pour out a fiery stream of biting ridicule, blasting reproach, withering sarcasm, and stern rebuke. For it is not light that is needed, but fire; it is not the gentle shower, but thunder. We need the storm, the whirlwind, and the earthquake. The feeling of the nation must be quickened; the conscience of the nation must be roused; the propriety of the nation must be startled; the hypocrisy of the nation must be exposed; and its crimes against God and man must be proclaimed and denounced.”

-Fredrick Douglass – 19th Century Anti-Slavery Activist

Confronting Law-makers



- “Iron John” - the classic work by poet Robert Bly, is an ancient myth brought to life, and has a revealing segment on a certain type of male... I’m going to quote it on the next slide. It has great insight to offer on healthy assertiveness in the service of Life, for both genders...

Stealing the Key to Let *Iron John* Out of the Cage

“...And the key has to be stolen. I recall talking to an audience once about this problem of stealing the key. A young man, obviously well trained in New Age modes of operation, said ‘Robert, I’m disturbed by this idea of stealing the key. Stealing isn’t right. Couldn’t a group of us just go to the mother and say ‘Mom, could I have the key back?’

*“His model was probably consensus, the way the staff at the health food store settles things. I felt the souls of all the women in the room rise up in the air to kill him. **Men like that are as dangerous to women as they are to men.***

“No mother worth her salt would give the key anyway. If a son can’t steal it, he doesn’t deserve it.”

-Robert Bly “Iron John”

Underestimating the Cunning Determination of the Right Wing and Fossil Fuel Corporate Enemies of Climate Science is Extremely Dangerous

- **They** control the most powerful countries on Earth
- They know it, they are not stupid (the rank-and-file Conservatives, however, are discussed in [Powerpoint K40b](#)), and they will make strategic moves to insure they keep it. That includes foot-dragging talk about modest and inconsequential cap/trade carbon taxes as a bargaining chip.
- They may give such talk in public, while privately instructing their **bought congressmen** to be very sure NOT to pass any **wellhead carbon taxes**, and be prepared with any story necessary for the naïve but earnest climate activists.
- Effective activism will require **backbone** and a new resolve: **refusal to be placated and marginalized.**

Remember the words of the Nobel Peace Prize Winner Desmond Tutu...

*"If you are neutral in situations of
injustice, you have chosen the side of the
oppressor."*

- Desmond Tutu

Congress should be made up of the wisest, the most intelligent, the most objectively oriented evidence-based decision makers and leaders

- These qualities are the qualities and hallmarks of science.
- So how many scientists do we have (as of 2017) among our 500+ members Congress?
- **ONE.** (Rep. Bill Foster of Illinois, physicist and businessman)

Head of the Tyndall Climate Centre in the U.K. – Prof. Kevin Anderson...

- ...relays the universal reaction he's gotten privately from the policy ministers when he points out how our path, and proposed paths for increasing renewable energy and lowering CO2 emissions, are hopelessly too small to avoid +2C, and that we're on the path to +4C and higher, long before the end of this century, and then hotter beyond. He guesses 95% odds we hit and sail past +4C (as of COP23 in Bonn in November 2017, [here](#)) .
- He further relays *that “+4C is universally among scientists declared to be incompatible with an organized society”...*
- The reaction Anderson got – “*I can't say that sort of thing in Copenhagen*” – John Kerry: the U.S. Secretary of State (2008 Copenhagen climate summit)
- Sources [here](#), and [here](#), [here](#), [here](#), and [here](#)

Anderson further points out...

- ...Political scientists advised him that he and other climate science academics should be very careful to whom he spoke about these realities.
- A friend and senior policy maker advised Anderson ***“you can’t say these things to policy makers!”***
- The (U.K.) chief scientists who advise policy makers agreed ***“I can’t say these things to the policy ministers!”***
- Anderson explains that the pressure being brought to bear on climate science academics in the U.K. has resulted in most giving rosy views in public and in print, on what the policy ideas being brought up will do for the future.

Yet when Anderson talks with these same scientists in private, they admit – “*I know it (the rosy projection) is not true*”

- I'm thinking of a white paper I read recently trumpeting a “Pathway to our Renewables Future” – and it clearly simply took the renewables % of total energy today, and french-curved them up to what was desired(!) and no appreciation of the needed changes and their consequences in light of **Generalized Jevon's Paradox** on actual energy consumption when efficiencies happen.

An Exasperated Prof. Kevin Anderson ...

- *“We’re all trying to spin the message to make it acceptable to the next tier up” [\(64 min into this talk\)](#)*
- The tiers being – the climate scientists, to the climate science/policy intermediaries, to the policy advisors, to the chiefs in government, and then to the international negotiation team at climate talks.
- And with unreality rising with each tier passed.
- We’re ~all playing [“The Emperor’s New Clothes”](#), with those few courageous scientists who speak out like Anderson ([Anderson and Peters 2016](#)), pointing out the insanity of it all.

Even Some Scientists Are Part of the Problem

- Kevin Anderson points out that too many scientists have no appreciation of engineering and how hard and how long it will take to transform the world's energy infrastructure technologies (even granted they're politically possible)
- As much as I admire high profile climatologist Michael Mann's scientific work, I reluctantly may have to put him into this category as well, based on listening to a recent [interview of Mann here](#), and contrast that with former engineer and current climate scientist Professor Kevin Anderson [here](#).
- I too have had a number of past years working in aerospace and thermodynamics engineering, and can applaud Professor Anderson for noting this inconvenient and key point which is so rarely acknowledged.

Climate Scientist and Award-winning Climate Communicator Dr. Katherine Hayhoe

- ...admits the published evidence that scientists, in their public interfaces with policy / political interests, have been **biased**. ([1min 24s interview](#))
- “Biased on the side of least drama”
- And admits that the consequences of our greenhouse emissions is causing rising sea levels, polar melt, and general climate chaos much faster than the models had predicted.
- They, and certainly the policy people who want to just tweek the *status quo*, not dismantle it, find this hard to fully let in.

Spin-meister'ing by Phony Carbon Accounting

- When the goal is to simultaneously insure economic growth and also boast supposed success in clean energy targets, the result from policy people is **phony accounting**.
- This is uncritically picked up by media, which then becomes gospel accepted by the acolytes of growth.
- Here's an [illuminating new article](#) by someone intimately involved in observing this “shell game” as he calls it – **Sam Brooks**, former **head of Washington DC's government energy division**

The Same UN Which has Neutered the Climate Scientists by Encapsulating them within the IPCC...

- ... lauds their own “UN Clean Development Mechanism” (CDM), which uses carbon “offsets” as their choice for reducing carbon emissions.
- Except, a European Union study on the effectiveness shows that 85% of their offsets produce no reductions in carbon emissions ([discussed here](#))
- Climate credits: [Worthless](#) in reducing emissions

Almost NO ONE Seems Willing to Digest these Hard Truths

- I myself have been called “**pathologically negative**”, a “**Dagny Downer**”, “**cynical**”, an intractable “**pessimist**”, “**sadistic**”, and even... a “**wet blanket**”(!) And this is by some of the good guys! - those on the climate activist side.
- All for simply detailing the actual political, economic, and physics/thermodynamic documented facts of climate change, unsullied by “happy spin”.
- Uninformed cheerleading will only waste precious time in ultimately useless directions. **MORE is called for than the changes being hyped, but are remaining within the fatal paradigm that we’ve adopted.**



GROWTH

1886-2007

***"The bearers of bad news
aren't often welcome
at parties"***

**-David Welch; Trudeau Centre for Peace and
Conflict Studies at the University of Toronto.**

Today: Persecution of Climate Scientists

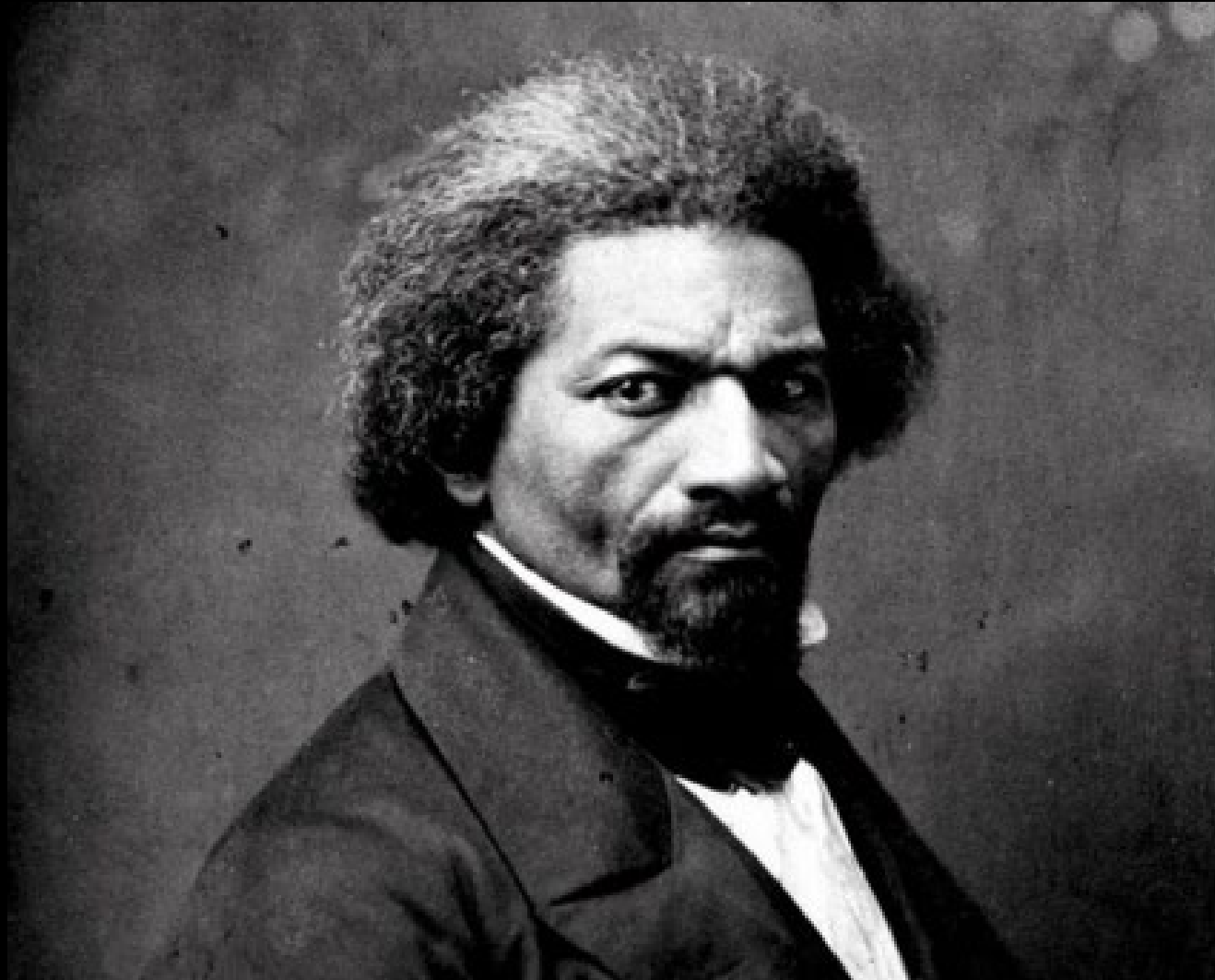
- ...like Phil Jones, Michael Mann, and hundreds of others who have been subjected to...
 - slander by corporate-sponsored goon squads
 - threats of harm to themselves and their families
 - harassment by Congressional FOI “fishing expeditions” without cause.
 - assaults by paid fake-news purveyors who fill their science sites meant to educate the public through interactive blogs, with the incessant noise from troll-factories similar to this.
 - de-funding at the hands of the Congressional “science” committees, and more.
- -- reassignment to menial jobs, of **Dept. of the Interior** climate scientists who speak publicly about the dangers of climate change.

There is no enemy worse than a friend betrayed

- I know the feeling. And I believe Dr. Michael Mann is experiencing that as well...
- As a top scientist who thought his outstanding work would result in awareness and action from the decision-makers in the U.S. and the world, and who found instead he and his family threatened, vilified, and slandered by oil interests and their goon squads...
- ...he's come to realize that confronting the machine that is out to preserve the system destroying this planet, can only be fought with blunt honesty.
- He teamed up with political satirist Tom Toles of the Washington Post on their book "[The Madhouse Effect](#)", and contends that "***the only way to frame it (climate denialism) is through ridicule, through satire...***" ([interview](#)). (I agree).

“At a time like this, scorching irony, not convincing argument, is needed” –

Fredrick Douglass (19th century anti-slavery activist)



The Point is This...

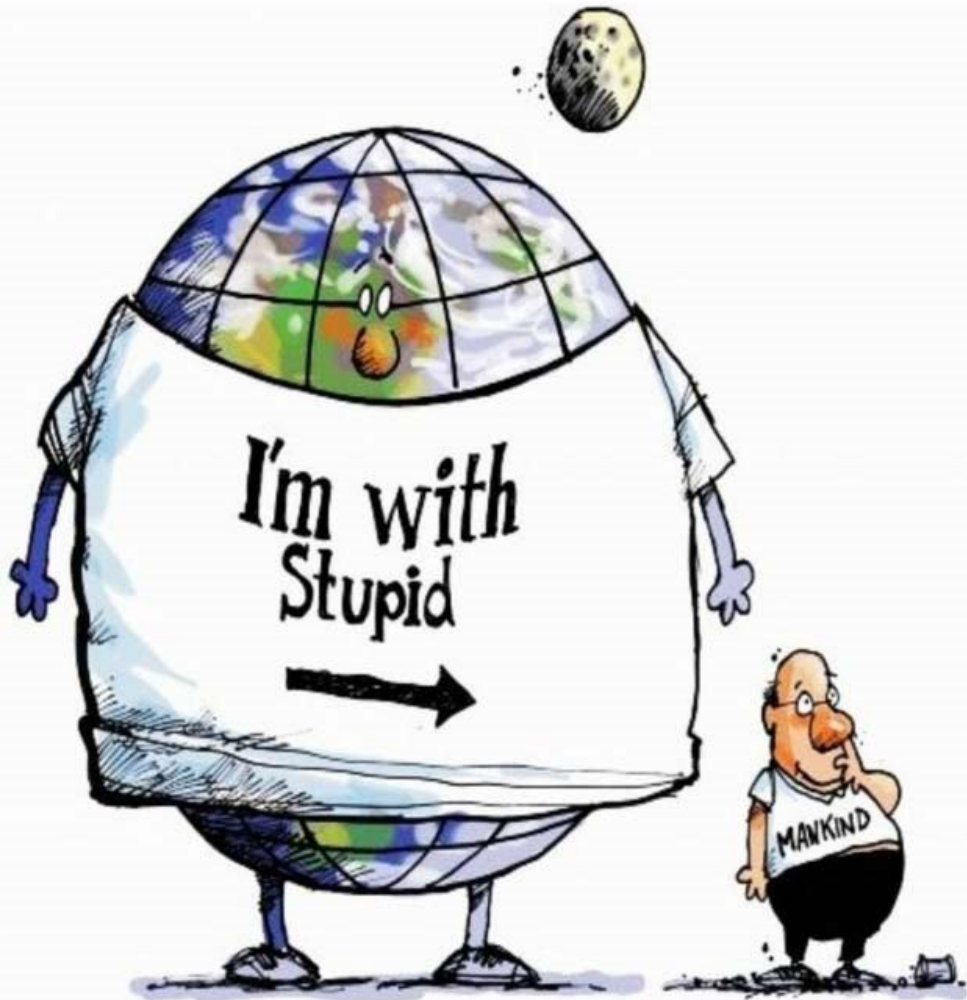
- When critical values are in peril, like the livability of this Earth for all future generations of humans, and so many other species...
- You are **dangerously wrong** to continue to politely, patiently ask permission from those who persist in failing to show moral behavior or leadership... failing to **DO THEIR JOB** (to put it as kindly as possible).
- You are **dangerously wrong** to continue proclaiming your hope, that some day, if you just keep asking, that your elected legislators will create laws with some sense of planetary moral ethics. And then pretend the moral high ground because of your “Hope”.
- There is a saying in the investment world – **“Hope - is not a strategy” (A REAL strategy is based on REALISM)**

They Are 1 in a Million

- Realize that the lawmakers of the United States – the 535 members of Congress, the 7 Supreme Court Justices, and the President, add up to about 1 millionth of the U.S. population
- **They** are the **One in a Million** who make the laws the other 330 million of us have to obey.
- That is an awesome responsibility. They have staffs, they have funding to accomplish this job... yet they do nothing. At best, mumbling excuses or campaign platitudes. Or worse.

There is no Excuse: This is the most urgent and consequential issue of this and all later generations.

- Congressmen could, after all, call news conferences and educate ALL about the truths I'm relaying here. Yet they do not. They are public liars, and they know it (see the end of this interview with an insider)
- We ARE what we DO – and they clearly have no intention to make necessary policy – PLEASE! CONFRONT this CLEAR FACT, climate activists, before continuing!



How We Elect Leaders.
I'm 100% for the right of every person to ruin his own life through his dogmatically held stupidity. But not mine. And not the youthful innocents to come. Perhaps the numerical "weight" of one's vote should reflect the objectively determined intelligence, knowledge and benevolence of the voter, in the final tally.

- *“We stand at a brink: relentless, unforgiving climate change combined with the decay of intelligent, caring governance to create one of the greatest threats that humanity has faced.*
- *“It's time for the next revolution, a revolution foreseen by our nation's founders. A peaceful revolution, a revolution led by young people because they have the most at stake.”*
- *“The cancer in our political parties is too advanced. The revolution requires a new political party. It should be a centrist party founded on the principles of democratic republican government.”*

-Climatologist Dr. James Hansen, in 2017

Honorable people ACT, and behave like leaders. They LISTEN, then LEAD

- Dishonorable people worry what their corporate sponsors will feel.
- Dishonorable people pretend to listen, but in fact do not.
- Dishonorable people work at perfecting the art of handshaking and smiling, while having no backbone to act as if this is the emergency that it genuinely is.
- Dishonorable people obsess over “*what will people think?*” rather than “*what is the evidence, what is the truth, what actions are required?*”

“But Rick... maybe if we’re patient, and we’re not confrontational, and we’re very respectful to our Congress, then through patient spade-work we can reach compromise on solutions” – I’ve heard this style advocated. I Ask You to Consider the Consequences...

- **Motesharrei et al. 2016** *“...all societal collapses over the past 5,000 years have involved both ‘the stretching of resources due to the strain placed on the ecological carrying capacity’ and ‘the economic stratification of society into Elites [rich] and Masses (or ‘Commoners’) [poor].’ This ‘Elite’ population restricts the flow of resources accessible to the ‘masses’, accumulating a surplus for themselves that is high enough to strain natural resources. Eventually this situation will inevitably result in the destruction of society.”*
- *“Elite power, the report suggests, will buffer ‘detrimental effects of the environmental collapse until much later than for the Commoners,’ allowing the privileged to ‘continue business as usual despite the impending catastrophe.’*
- *“‘Science will surely save us’, the nay-sayers may yell. But technology, argues Motesharrei, has only damned us further...” (by way of Generalized Jevon’s Paradox, I will add)*

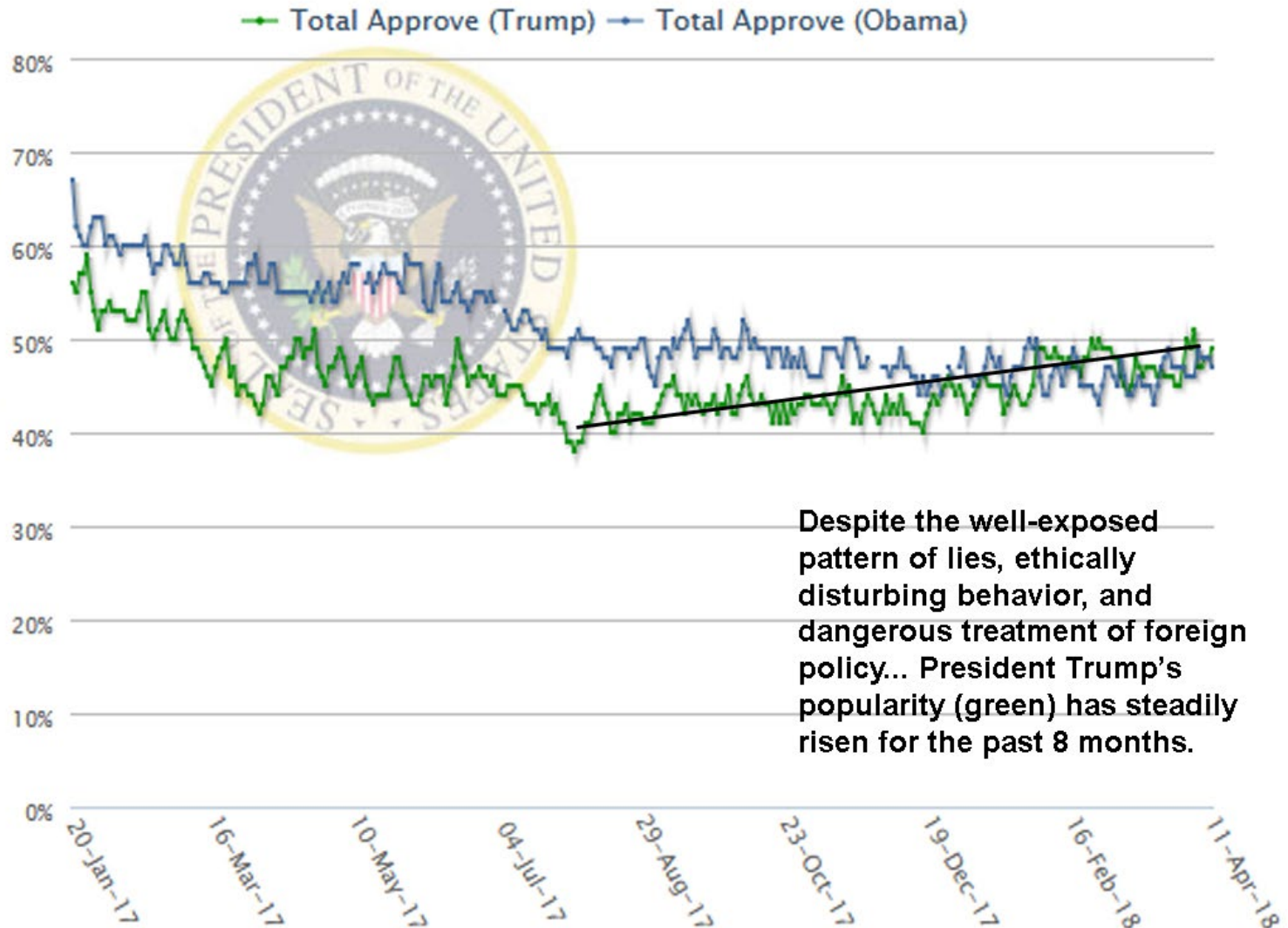
Those who think they can “love bomb” the enemies of climate by patient cultivating... don’t understand who they’re dealing with, and the consequences.



1,500 Likely Voters +/- 3%



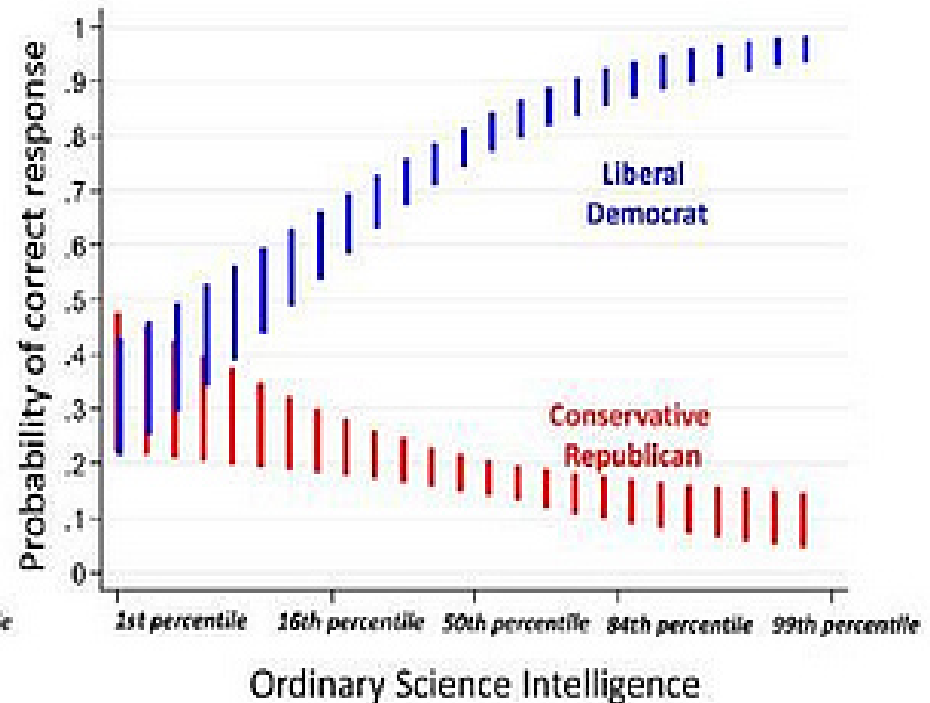
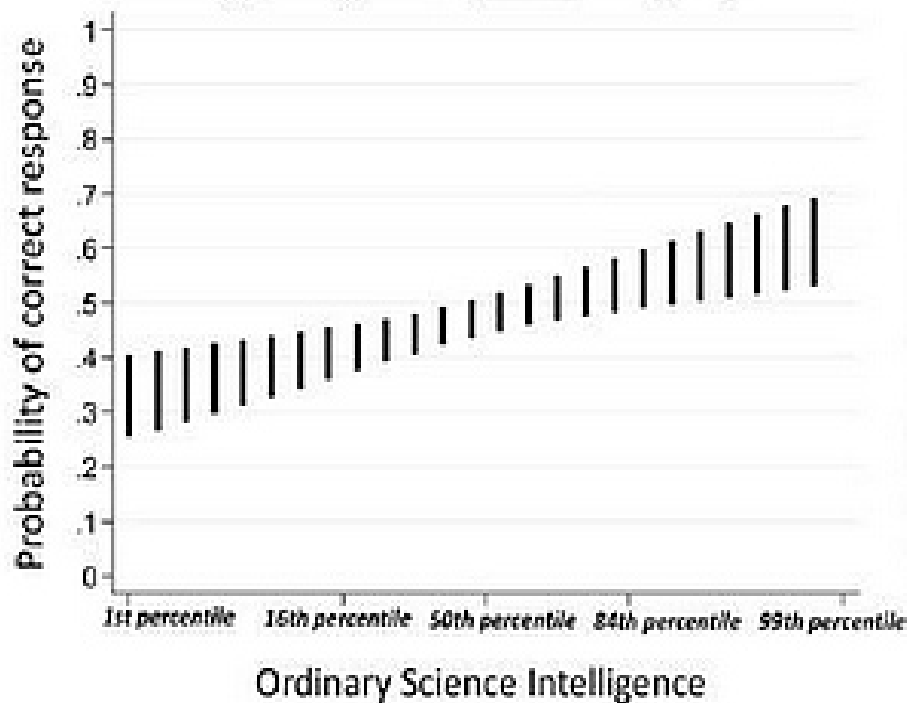
1,500 Likely Voters +/- 3%



Despite the well-exposed pattern of lies, ethically disturbing behavior, and dangerous treatment of foreign policy... President Trump’s popularity (green) has steadily risen for the past 8 months.

Liberals: the more scientifically intelligent, then the more convinced they are of human-caused global warming. But it is the opposite for Conservatives (Kahan *et al.* 2015 , discussed [here](#)). Trying to reason with Conservatives actually makes them LESS Rational. *“You can’t reason someone out of a position they didn’t reason themselves into”*

There is “solid evidence” of recent global warming due “mostly” to “human activity such as burning fossil fuels.” [agree, disagree]



After the 2016 election...

- The scientific advances needed are in severe danger, as the mindset of the Dark Ages and dogmatism has returned to the U.S. with a devastating blow to the support of fundamental science promising to end the scientific leadership of the U.S., especially in climate research.
- Trust in the U.S. regarding climate is now badly damaged. Trust, once broken, is very hard to win back.
- **We've just dug another very deep hole for ourselves.**

Orwellian “NewSpeak” - the Language of Our Government. Not Just for Climate...

- As just one example...
- “Wildlife Services”... sounds warm and wonderful, and like it must be an agency that is a friend to our fellow species...
- ...until you look at what it does. **It poisons, strangles, crush-traps, and uses aerial gunners to machine-gun millions of wild animals per year. 2.7 million in 2016, and that was before Trump.**



Honorable politicians should be begging us, the common citizens, to find a way to **FORCE** them, despite their corporate paymasters, to **ACT Responsibly**

- Instead they mumble excuses .
- In the 2016 Election debates – not a single question on climate. Not one.
- We've known about the danger to life on Earth due to fossil fuel greenhouse effects for over 100 years now. Critical climate tipping points are arriving, as we saw in the science chapters.

We compound their utter disregard for all of us by naively believing that one more letter will illuminate them.

Evidence says otherwise.

- It is insulting... to us.
- And further emboldens them to continue to do nothing on climate except empty promises about a goal decades in the future (when they're dead).
- Pay respect instead to where it is deserved - to future generations – and take political action that is more insistent on honorable legislation.

It's been argued to me... Exemplify Gandhi in our actions – He inspired a nation to throw off British Imperialism

- ...Implying that small local actions may inspire more distant local actions until our leaders listen.
- **First:** Gilens and Page (2014) show that They don't LISTEN. The British, on the other hand, already knew they were on the losing end of historical change.
- **Second:** Gandhi wasn't facing climate change. With tipping points being crossed while climate inertia time scales allow the non-scientifically minded to believe we have time to wait for little green shoots to grow into a changed world in which we can have it all. Will they even grow at all, given that the low hanging fruit of adult self-sacrificing eco-friendlies have pretty much already been won?

Third and most important – Gandhi was on the same side as the desires of the large majority in India.

- India's independence was inevitable. If it hadn't been Gandhi, the ground-swell would have found a different person as trigger.
- Sympathy for Climate Action? – very different: The actions necessary to halt climate change are NOT desired by people, instead they are almost universally abhorred by both Greens and Republicans and everyone in between. We want our cake (economic growth) and eat it too, and have no patience with Natural Law that says it's not possible on a finite planet.
- Yes we want climate action... **as long as only the bad guys pay for it.**
- What would Gandhi do if he were in the back seat with Thelma and Louise, 300 ft from the Grand Canyon edge, speeding at 100 mph? A gentle hunger strike? Or instead jump into the front seat, slam the brakes, grab the wheel and crank the car into a spin. **Which is an actual solution? Which are we choosing?**

From Pulitzer Prize winning journalist and Princeton Professor Chris Hedges...

- *“Of course, it’s bleak. I’m sorry, the climate science reports are bleak... I’m not making it up. And **this mania for Hope is a kind of sickness**, because it prevents us from seeing how dire and catastrophic the situation is if we don’t radically reconfigure our relationship to each other and to the ecosystem. And of course people don’t want to hear it. We become entranced by the trivia that dominates the airwaves... We are fed this mantra, this fiction, that says we can have everything we want, that Reality is never an impediment to what we desire. It’s given to us by Oprah, it’s given to us by Hollywood... And it’s not true”*
- ***“The (mainstream) Democrats are as beholden to the Corporate Elite as are the Republicans” (RN: largely, but not completely true, I believe)***
- ***[Interview here](#)***

More Evidence: The Trump Impeachment Investigation and Weak Democrats

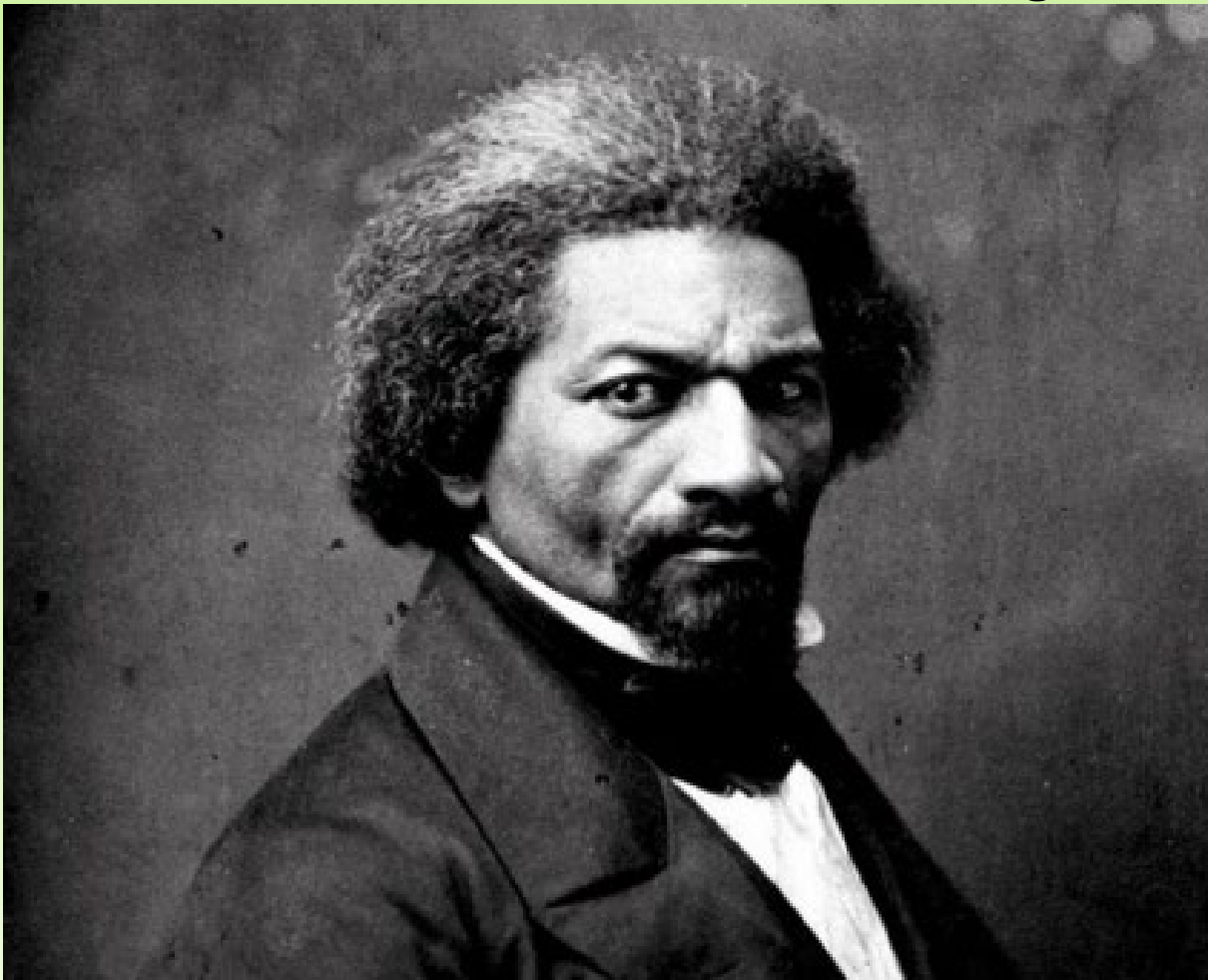
- Witness at Trump's insistence, widespread refusal of witnesses to his many abuses of power to obey Congressional subpoenas to testify. Same in the Mueller Investigation.
- **Yet... (2019)** ***"The Supreme Court has repeatedly ruled that each chamber of Congress can hold a person in contempt for flouting a legislative subpoena, and – as Justice Brandeis explained in *Jurney v. MacCracken* – each chamber may also coerce obedience 'by means of arrest.' In other words, the House Sergeant at Arms may take people into physical custody until they provide information withheld from Congress. "***
- But what was the Democrat's actual response? Frowns. And making a show of guilt-tripping and shaming Trump – obviously to no effect.

Then How?

- At one time, I considered an internet-organized effort to identify in each state and congressional district , new candidates who would make climate action their top priority
- Followed by a large effort to write-in those candidates, funded only through grass-roots efforts
- But no – this isn't the way
- It would require voting majorities over a majority of districts, and given the gerrymandered boundaries and the conservatives immunity to reason, it's unlikely to work.
- And it would require individual candidates to stand up, against their party.
- **So...**

***“Power yields nothing
without demand. It never did, and it never
will”***

- Fredrick Douglass



I Offer This: OCCUPY Washington D.C. for Climate

- If climate activist organizers, rather than celebrating inconsequential meetings with their congressman, instead got educated using resources such as I and others have assembled, and then canvassed the country to get 100,000+ people who would commit to going to Washington D.C. for a different kind of educational conversation with DC leaders...
- **With images stirring public conscience, the power of media attention can be instantaneous. Witness the Standing Rock Nation standing up to Big Oil**

OCCUPY DC's Goal Would be...

- To nonviolently, peacefully, but with determination, prevent “Business as Usual” from continuing, by passive sheer citizen numbers.
- It would be to OCCUPY the public outdoor parks and monuments of DC, with Presentations and Interviews, giving the Press the real science, and by sheer numbers, slow DC's political “business as usual” to a halt until congressional leadership publicly spoke to the assembled press and the People with a commitment to pass legislative actions as embodied by the ideas outlined earlier here.

No Empty Promises This Time

- Arrests may happen. Let them happen, peacefully and without resistance.
- NO violence at ANY point from the climate activists!
- Those who commit violence will forever be seen as the villains. Let that NOT be us!
- Why 100,000+ ? Because it is too many to jail, too many to commit violence against, it's an **overwhelming** human presence.

OCCUPY DC for Climate

- ...the goal would NOT be to try and negotiate in congressional offices. Remember: THEY work for US. I'm thinking of the classic line of George Clooney in the film "Michael Clayton" – "Do I LOOK like I'm NEGOTIATING!?".
- It would not be for getting a warm buzz by communing with other placard-carriers.
- ...it would be to deliver demand for legislative action on behalf of all future children and all Earth's species, the principal demands being a stiff carbon at-the-wellhead tax, and legal protections for future generations.
- The beginnings of this may already be underway...

It Will Take a 100,000 to 500,000

- 100,000 is less than 1/30 of 1% of America.
- And we could make the logistics much easier by asking individuals to just spend a few days each – short enough they could arrive for a “tour of duty” with a backpack for self-sufficiency. Rotate in fresh volunteers... until our government honors its promises to us and future generations.
- People need to be sufficiently educated to the emergency.
- But it will be made more difficult by the climate denialist Heartland Institute’s new initiatives to poison the understanding of climate by America’s teachers and children through massive nationwide mailings of their propaganda.

After the “Jan 6 Insurrection” abomination, I should be extra-clear on what I’m advocating

- We must keep the moral high ground. That means no violence, no resisting arrest, no occupation of buildings. It would be in the same spirit of the Women’s March and MLK’s March long ago.
- It would be different only in that there would be the promise to keep up the pressure either until all ~500,000 are arrested and jailed, or else Congress finally agrees to the Will of the People and pass real climate legislation, and not just more Greenwash.
- We exercise 1st Amendment Rights. To peaceably assemble and seek redress from our leadership. Future generations have no one to protect them. We must be those protectors.

There's Another Reason It Might Succeed...

- “The 3.5% Rule”
- *“Nonviolent protests are twice as likely to succeed as armed conflicts – and those engaging a threshold of 3.5% of the population have never failed to bring about change.”*
- *We don't need 3.5% to **Occupy DC for Climate**, but we need 3.5% (about 10 million) to support the core of the proposals I've outlined and demonstrate so, even if just locally.*

It Just Might Work

- Individual congressional Republicans have not shown the courage to stand up to their party.
- But if **Occupy DC for Climate** pressures ALL at the SAME TIME to obey the people, or while the politicians worry of widening societal unrest if they refuse... it becomes much easier to actually expect they'll do the right thing.
- Imagine, what if some of those congress people *do* have an honorable bone or two in their bodies, and they're just looking for the opportunity to **do the right thing**?
- **That's why unified action may work, when individual pleading won't.** But it will take far more than a weekend march of a few thousand...

Already, Governments are Quite Willing to Arrest and Prosecute Numbers above 1,000. To Not Be Silenced, Protesters Need More...



There are those who feel drawn to Political Action

- **I am not one of them.** I love science, and teaching, and identifying the truth of things, and identifying actions which might make an actual difference in halting climate change, after understanding the issues as fully as we know.
- But to those who are drawn to political action, **I challenge them to take up this cause.**
- I challenge them to show that they are single-minded about making an actual difference to future climate, rather than futile pleadings with congressmen installed by the Economic Elites.
- The **new science** makes even the most drastic policy actions perhaps only helping us towards a future of steep climate costs, vs. of a future barely worth living in at all. But what other choice is there?

As Steve Bannon has said – Conservatives are “at war” and “go for the head wound”. So “respectful” blind faith that they will change and be good, if we just ask and believe – will be seen guilty of gross negligence, by our children

- Review [K40b](#); Psychopathologies worsen in those who have already deeply betrayed honoring truth and evidence. It is an amplifying feedback of worse and worse betrayals demanded by the felt need to institute ever more pervasive self-made blindness to one’s own actions in order to preserve a fragile pretense ego.
- [“Disobedience”](#) – is a new film which has interesting suggestions to make.
- [RisingTide.org](#) , an outgrowth of the **Earth First!** organization, has the right attitude towards achieving policy change
- [BeautifulTrouble](#) – a **Toolbox for Revolution**: has an extensive set of materials on the art of non-violent resistance to immoral power

From a Recent Talk (at 48 min in) by the founder of the Carbon Tax-and-Dividend Strategy – Climatologist Dr. James Hansen

- ***“It’s time for the next Revolution – a revolution foreseen by our nation’s founders. A peaceful revolution. A revolution which must be led by young people, because they have the most at stake. The cancer in our political parties is too advanced.”***
- I completely agree. Not just Republicans, but Democrats as well - my generation has failed this planet. We knew the dangers of fossil fuels and did ~nothing about it. Even those with good hearts, continue to engage in the same old tooth-less dysfunctional strategies which are proven by the evidence as failures. They cannot lead. **It is the young people who must lead now.**
- As a member of the old generation, I can only offer my profound apologies for my generation’s failure, and to try to make as clear as I can to the new generation the science that must be the starting point. I hope by now I’ve made clear we’re not going to just “techno” our way out of this.

From an insider at the EPA in 2017...

- ***“I work at the EPA and yeah; it's as bad as you are hearing:***
- ***“The entire agency is under lockdown, the website, Facebook, Twitter, you name it - is static and can't be updated. All reports, findings, permits and studies are frozen and not to be released. No presentations or meetings with outside groups are to be scheduled.***
- ***“Any Press contacting us are to be directed to the Press Office, which is also silenced and will give no response.***
- ***“All grants and contracts are frozen. From the contractors working on Superfund sites, to grad students working on their thesis.***
- ***“We are still doing our work, writing reports, doing cancer modeling for pesticides, and all the rest... hoping that this is temporary and we will be able to serve the public soon.***
- ***“But many of us are worried about an ideologically-fueled purging and if you use any federal data I advise you gather what you can now. We have been told the website is being reworked to reflect the new administration's policy. Feel free to copy and paste, you all pay for the government and you should know what's going on. I am posting this as a fellow citizen and not in any sort of official capacity.” – Anonymous, for their personal safety***

Forcing Policy Change: Lawsuits

- A number of climate scientists are urging government prosecution of Fossil Fuel corporations under the Anti-Racketeering (RICO) Laws.
- RICO was passed to criminalize behavior of corporations who lie about the damage their own products do, and clearly applies here after the recent revelation that Exxon-Mobil's own scientists were showing as long ago as 1981 how greenhouse warming from their oil would be "catastrophic" to the future and update here.
- Yale Climate series "What Exxon Knew" (9:34)

On Prosecuting Exxon-Mobil

- As of March 29, 2016 - 17 state Attorneys General had joined together to prosecute Exxon-Mobile (and soon the rest of Big Oil) **for fraud, in their deliberate lying about climate change and fossil fuels**
- The NY Attorney General was joined in the coalition by attorneys general from California, Connecticut, D.C., Illinois, Iowa, Maine, Maryland, Massachusetts, Minnesota, New Mexico, Oregon, Rhode Island, Virginia, Vermont, Washington, and the U.S. Virgin Islands.

“What these attorneys general are doing is exceptionally important,” - Al Gore

- ***“Congress has been sharply constraining the ability of the executive branch to perform its duties.” [Source](#)***
- **He noted that holding Big Tobacco accountable for fraudulently denying that cigarettes cause cancer took 40 years, though.**
- ***“We do not have 40 years to continue suffering the consequences of the fraud allegedly being committed by the fossil fuel companies,” he said. That investigation, too, began in the states before the U.S. Department of Justice eventually got involved.***
- ***“Our democracy has been hacked,” Gore said. “Otherwise this would be done in Washington.”***
- ***[Here is the latest lawsuits](#) on the growing prosecutions being filed against Big Oil for lying to their shareholders and the public***

There is good precedence from the Tobacco Industry's very similar campaign against science

- In 1999, the Justice Department filed a civil Racketeer Influenced and Corrupt Organizations Act (RICO) lawsuit against the major tobacco companies and their associated industry groups.
- In 2006, US District Court Judge Gladys Kessler ruled that the tobacco industry's campaign to "maximize industry profits by preserving and expanding the market for cigarettes through a scheme to deceive the public" about the health hazards of smoking amounted to a racketeering enterprise. (alas, it took 40 years after suits began, to reach this ruling)
- But the times, they are a'changin'; not for the better...

The Federal Government in 2017 – They're Still Not Listening

- The installation, incredibly, of **Exxon's CEO Rex Tillerson as the United States Secretary of State** – the highest ranking cabinet position for all aspects of U.S. Policy, and his chuckling **outright refusal to answer**, during his confirmation hearings, to Exxon's funding of climate denial strong-arm tactics under his leadership – makes it clear that this RICO prosecution will be buried.
- Do you think if we patiently write our Congressmen, maybe you will be heard, and their hearts and their concern for our children's future will somehow materialize?
- If you do, I advise you to re-read **K40b "Psychopathologies of Climate Denial"**. You are dangerously underestimating your opponents, and therefore you are **endangering** the innocents of future generations to come.

The Trump Administration laid waste to 40 years of environmental protections, including climate policy.

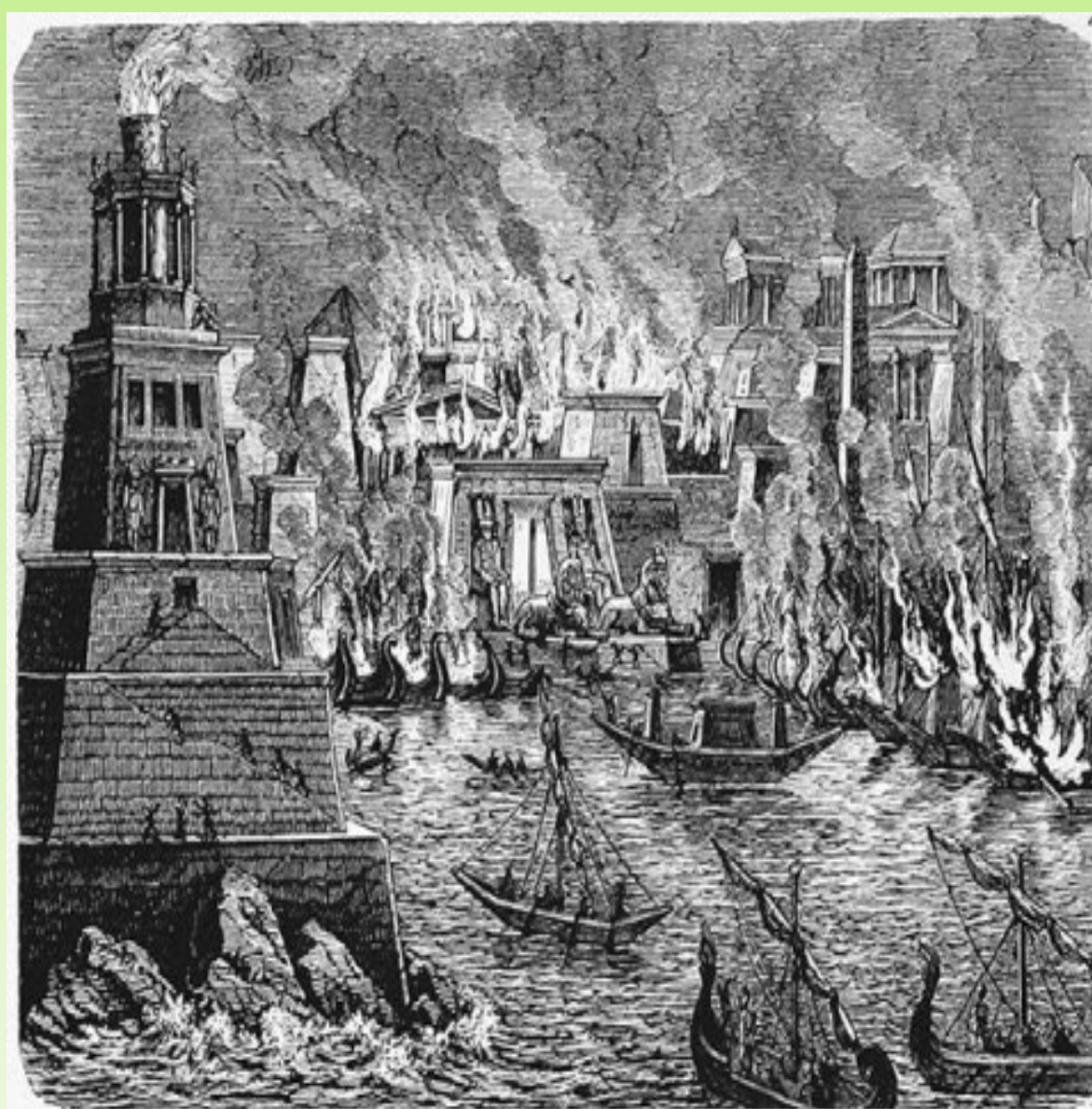
The first 100 days were “a disaster” for the
Environment

- **Sec. of Interior:** Ryan Zinke - promising to end protections against drilling and mining on public lands
- **New Director of the EPA** – climate denialist Scott Pruitt., who has fought hard to dismantle the EPA.
- **Sec. of Commerce:** Wilbur (“The King of Bankruptcy”) Ross, who’s made his billions dismembering and selling the pieces of companies nearing bankruptcy
- Anti-evolution Betsy DeVos as Secretary of Education, etc.

How will climate scientists at NASA and other Federal agencies be Targeted for Termination in the Trump Era?

- The machinery has been put into place, days after the new Republican-dominated congress took power in January 2017 – a revival of the Holman Rule
- It allows individual congressmen to add an amendment to any bill, such amendment to eliminate the pay or eliminate the position of any individual federal worker.
- The rule dates back 130 years for entirely different purposes, but was discovered and re-enacted by Morgan Griffith (R-VA), who says he *“favors a strategic application, likening it to a bullet from a sniper rifle rather than a shotgun”*.
- **Scientists need to watch their backs.**

The Return of the Dark Ages



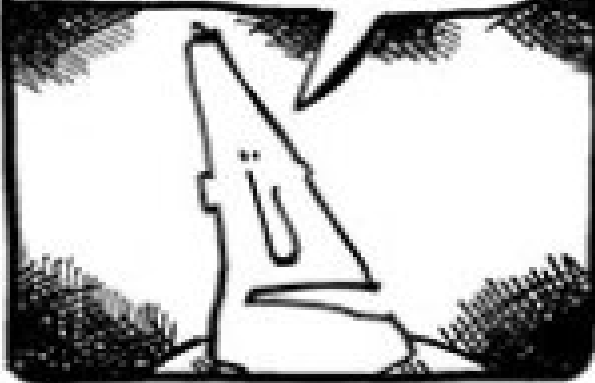
BURNING OF THE LIBRARY AT ALEXANDRIA.

- In the weeks, days, and hours ahead of the Trump Administration taking over, scientists and especially climate scientists, were scrambling to copy and store to safe locations the precious collected data of NASA, NOAA, and other scientific institutions ([source](#)).
- Indeed, at the hour of take-over, all mention of “global warming” was removed from the links at **Whitehouse.gov**. and “climate change” links all went dead.
- Now, [Government scientists are in terror](#)

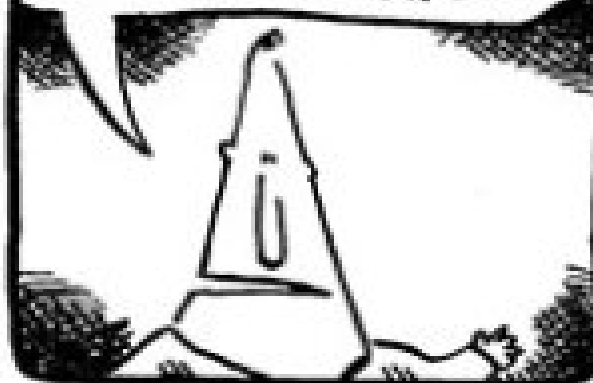
The list of Trump Empire assaults on science in general, climate science and scientists in particular, is far too long to list. But here's a few...

- Trump seeks to shut down existing, and on-the-drawing-board, satellite systems monitoring climate change
- Massive cuts to the EPA enforcement division, rendering environmental laws useless.
- The latest EPA purge – abolish the EPA science advisory boards
- Methane emission laws, gutted.
- Dozens of climate scientists re-assigned to pro-oil jobs within the Dept. of Interior (interview 6 min)
- The strategy seems to be to overwhelm our capacity for outrage with a Gatling gun of offenses against reason, science, and humanity so rapid-fire that we suffer battle fatigue in trying to respond.

FIRST THEY CAME FOR THE MUSLIMS, BUT I DIDN'T SPEAK OUT BECAUSE I WASN'T MUSLIM.



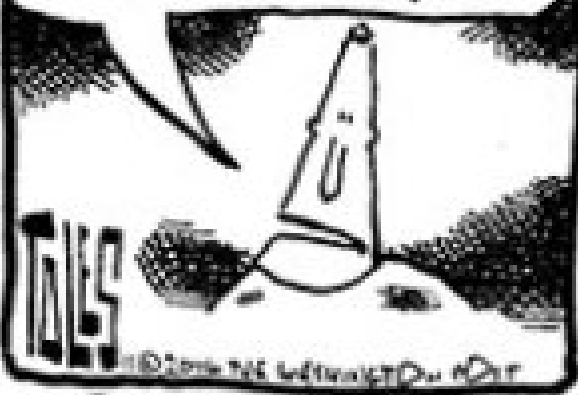
THEN THEY CAME FOR THE IMMIGRANTS, BUT I DIDN'T SPEAK OUT BECAUSE I WASN'T AN IMMIGRANT.



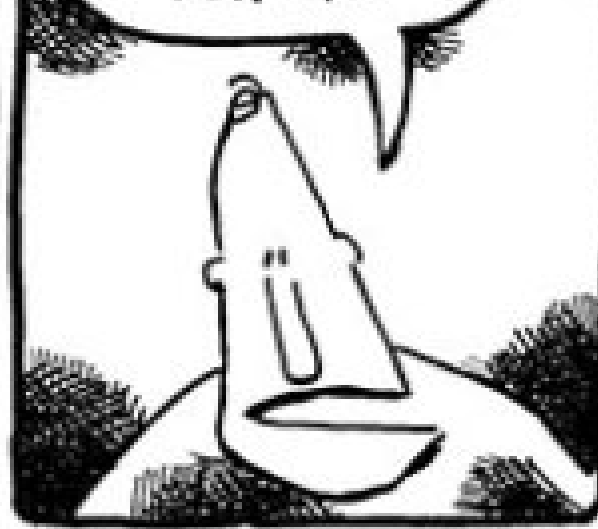
THEN THEY CAME FOR THE ENVIRONMENTALISTS, BUT I DIDN'T SPEAK OUT BECAUSE I WASN'T AN ENVIRONMENTALIST.



THEN THEY CAME FOR THE JOURNALISTS, BUT I DIDN'T SPEAK OUT BECAUSE I WASN'T A JOURNALIST.



THEN THEY CAME FOR ME.



IT WAS WIDELY REPORTED IN FAKE NEWS THAT THEY DIDN'T COME FOR ME.



Rogue 1: NASA Scientists Join the Resistance. Perhaps You Should Too



A Good Sign; The Women's March on Washington Against Trump drew 3 times more people than attended Trump's Inauguration

Women's March on DC
1/21/17



Trump's Inauguration
1/20/17



Suing Governments for Gross Negligence

- A Dutch court has ruled that the national government has a legal responsibility to protect its citizens against climate change, and ordered faster cuts in greenhouse gases in that nation.
- However, in America, it's different. Kivalina, Alaska sued Exxon-Mobil in Federal court over sea-level rise threatening their town. The suit was dismissed.
- One of the key bases for the law suit was that Exxon-Mobil deliberately lied to the affected people about the science of CO2 and climate. But the court decided to dismiss the case without getting to this interesting question, so it provides no basis for later suits. **Such is the System, in the United States.**
- 13 U.S. cities are defying Trump and posting on their own city websites the climate science that was deleted from the EPA's web page at the Trump Takeover of the U.S. Government.

Prosecuting Exxon-Mobil, and Big Oil

- The State of New York, (and now California as well) is attempting to prosecute Exxon-Mobil for funding disinformation campaigns long AFTER their own scientists told them of the catastrophic climate implications of their business, using existing shareholder disclosure laws
- In July 2017, Marin County, San Mateo County, and the City of Imperial Beach – all in California, are suing 37 Big Oil companies over gross misconduct in the issue of climate change. It's encouraging to see entire counties joining this effort, with the financial ability to stand up to oil company lawyers.
- And 3 months later, the cities of San Francisco and Oakland are now suing Big Oil as well, for causing climate change and then lying about it.

A 2015 Lawsuit Submitted to U.S. District Court of Oregon to Force Climate Recovery

- In November 2015, by 21 young people (ages 8-19), to force the U.S. government to reduce CO2 and institute a “science-based climate recovery plan”
- The lawsuit is opposed by the Fossil Fuel Industry (not surprising). They include the **American Fuel and Petrochemical Manufacturers** -- which represents **ExxonMobil, BP, Shell, Koch Industries and more** -- the **American Petroleum Institute** and the **National Association of Manufacturers**. They are all arguing for dismissal of the case
- The lawsuit (I’ll call it the “Oregon Case”) is also opposed by the U.S. Government, (also not surprising) which enacts legislation according to corporate lobbies’ wishes (see [Gilens and Page 2014](#))

In April 2016 – The Federal District Judge

Denies Dismissal of the Oregon Case

- This has the potential to be quite important and even historic
- Judge Coffin wrote: *“The debate about climate change and its impact has been before various political bodies for some time now. Plaintiffs give this debate justiciability by asserting harms that befall or will befall them personally and to a greater extent than older segments of society. It may be that eventually the alleged harms, assuming the correctness of plaintiffs’ analysis of the impacts of global climate change, will befall all of us. But the intractability of the debates before Congress and state legislatures and the alleged valuing of short term economic interest despite the cost to human life, necessitates a need for the courts to evaluate the constitutional parameters of the action or inaction taken by the government. This is especially true when such harms have an alleged disparate impact on a discrete class of society.”*
- (above emphasis mine)
- **The next step:** Judge ordering Federal Govt to cease jeopardizing global climate? No doubt this will be appealed with great vigor, and we’ll have to see how fair are judges further up the line.

The Plaintiffs, on hearing the Judge's Decision in the Oregon Case



A New Example of Victorious Young People

- From the Apr 29, 2016 Huffington Post: [Judge agrees to force Washington State](#) to create, by the end of 2016, policies to substantially reduce GHG emissions state-wide, after the usual foot-dragging and placations we're used to.
- This group is part of the James Hansen inspired ["Our Children's Trust"](#) organization
- Young people here, take note of the [Bill Moyers interview of plaintiff Kelsey Juliana.](#)
- Hansen, former head of the **Goddard Institute for Space Sciences** and the long time dean of climate science, resigned after much soul-searching, and thinking of his granddaughter and her future. He decided his new activism would be best accomplished unfettered.

This Landmark Case Then Went Forward

- The Federal district court in Oregon ruled that this case (the “Oregon Case”) has merit and will go to trial
- This time, it may not be hyperbole to call this the most important court case of the century.

Trump has been added to the list of defendants

- ...and his new Secretary of State, former Exxon CEO Rex Tillerson, it has been ruled, can be deposed.
- In March 2017, the Trump forces are doing everything they can to keep this case from going forward.
- Another victory for Children's Trust, reversal of an outrageous interpretation of Colorado law that demands a “balance” between safety and economic development in an anti-fracking suit. That case goes forward now, too. Part of the plaintiffs demands is access to Rex Tillerson (aka “Wayne Tracker” pseudonym in many relevant correspondence) and his emails.
- Unfortunately, the Trump version of the Supreme Court is now in power, and so the ultimate future of appeals is not promising.

And Finally - It Reached the Federal Court of Appeals in Jan 2020

- The 9th Circuit Federal Court of Appeals ruled against the case going to trial, arguing the court is “not equipped” to understand the science (?!)
- Then what are courts FOR? Science is evidence and logic applied to the Real World
- Trump appointments to the 9th Circuit were scandalous in their lack of qualifications, and yet loyalty to Trump, so this decision is not surprising.
- Plaintiffs hope to appeal, but prospects look dim now.

Federal District Court Judge Allows “Climate Necessity” Defense in Tar Sands “Shut it Down” case

- In Oct 2016, a coordinate action by activists commandeered valves shutting off some of the flow from the tar sands.
- They were arrested, of course, but the Federal Court (in Minnesota) has allowed, for the first time, the defense to base their case around “Climate Necessity”, thereby allowing testimony of scientists on climate and legal scholars on the historic place for activism in changing bad laws, and for the jury to be instructed to consider this testimony (in the past judges have instructed juries to disregard this defense).
- Trials set to begin in late ‘17 and into ‘18.

On Filling Supreme Court Vacancies

- These times call for blunt action. Graciously backing down, as is customary, has a very dangerous history in this world (*e.g.* Britain's Prime Minister Neville Chamberlain *vs.* 1930's Adolf Hitler).
- At the very least, the current law makes clear that the Senate can be filibustered successfully since it requires still a 3/5 majority to end filibuster FOR SUPREME COURT NOMINEES. (terminated – Apr '17)
Flash forward too...
- In early 2017 – the Democrats played “nice guy”, and now the Trump Administration is getting its way, and acting to cripple environmental protections and install his people at a very brisk pace.

If You Read The Constitution, It Says...

- Article II, Section 2: “[*The President*] shall nominate, and by and with the Advice and Consent of the Senate, shall appoint...Judges of the Supreme Court.”
- Now, you can interpret this in the following way – the Senate SHALL CONSENT (after perhaps giving some advice) to the President’s nominee, whom he appoints. If no objection, then the appointment stands.
- Since Congress refused to do its job of advice and consent, why didn’t President Obama simply install his choice for the vacancy on the Supreme Court before it was too late? **Why didn’t he at least try?**
- This timid “respectful” behavior is far too typical of those ostensibly on the side of saving the future and human rights, as film maker Michael Moore (who predicted Trump’s victory) observes (3 minutes into this 2018 interview). Conservatives interpret this as carte blanche to any outrageous and ominous behavior seen furthering their agenda. And they’re getting away with it. Future generations deserve we make a harder effort.

Defamation Lawsuits Against Science-Hating Climate Denialists

- Paleo climate expert Michael Mann (of “the Hockey Stick” fame), has **won his day in court** against writers from the *National Review* and the *Competitive Enterprise Institute* for comparing Mann to a child molester.
- “Dr. Mann has supplied sufficient evidence for a reasonable jury to find, by a preponderance of the evidence, that statements in the articles written by Mr. Simberg and Mr. Steyn were false, defamatory, and published by appellants to third parties, and, by clear and convincing evidence, that appellants did so with actual malice,” wrote Senior Judge Vanessa Ruiz in the **court’s opinion**.
- However, attacks are intensifying against scientists under the Trump administration. Employees of the *Competitive Enterprise Institute* are on Trump’s transition team for the EPA (Environmental Protection Agency).
- But if the jury awards a very large settlement and appeals do not succeed, it may provide a strong monetary incentive to others to tone down the attacks against scientists. But in today’s world, not likely

The 2015 UN Climate Convention -Paris

- This is the 21st Conference of the Parties to Climate Change (COP21). Previous meetings have not led to any progress on slowing CO2 emissions
- The major carbon emitters have submitted their proposals before the meeting.
- The U.S. proposals do not include Tax-and-Dividend. No countries submitted proposals which included carbon source tax-and-dividend.
- As of Oct/Nov 2015, most of the smaller countries have not submitted any proposals at all.
- Tyndall Climate Centre's Dr. Kevin Anderson predicts that nothing of significance will be put into action in Paris. That is also my judgment.
- The COP21 Paris summit began a few days after I wrote the above... Now, afterwards...

Post-Paris: A Post-Mortem

- The Paris Climate Summit (COP21), was an utter failure, despite all the back-slapping congratulations by the press
- No policy machinery was created or agreed to
- No enforcement mechanisms
- No time deadlines for any positive climate actions
- Instead, the countries agreed to “try” to limit global temperature rise to +2C, and perhaps even +1.5C
- But in fact, we’re almost at +1.5C today, and +2C is essentially **impossible to avoid**, and most certainly impossible without shock-and-awe Draconian cutbacks to energy use and near instant decarbonization through an enforced global economic depression.
- We’re not even trying; instead just posturing. Remember – **Temperatures do not go down, they only go up. And when permafrost melt is included, they don’t even stay level when ALL direct human-generated GHG emissions halt.**
- Prof. James Hansen **called** the Paris COP21 results “a fraud”. It’s hard to disagree.

James Hansen Makes an Analogy for the Paris COP 21's results (the Paris Accord), given the utter failures of the prior COP's

- *“It’s like an obese person proclaiming his goal of losing 40 lb... and failing, and instead gaining 10 lb over the next 2 years. And then making a public proclamation of his new goal – to lose 50 lb! And then celebrating the proclamation with a large pizza and a gallon of ice cream.”*

The Pachamama Movement

- In the ancient Andean cultures, Pachamama is the Goddess who sustains life.
- The term has come to mean a movement which has as a central goal the institution of legal protection not just for the present peoples, but for future generations by guaranteeing rights to Mother Nature herself.
- Bolivia attempted to institute these ideas, and so has Peru, but have been defeated by mining and oil corporate interests.
- In 2017, a 9 yr old Indian girl has brought suit against the government in India for failing to live up to their Paris agreements. These kids realize pleading with those in power is not going to save their world, and are willing to play hardball. I applaud them for that.

**This is a key flaw in our present legal system:
Although future generations are implicit in the value
of nearly all long-range actions that we do, they
nevertheless have no legal rights whatsoever.**

- **Our attitude has been – future generations should be grateful if we leave them anything at all.**
- **By contrast, central to Native American culture is to consider the impact on the next **7** generations of people before undertaking actions affecting the lands that supported them.**
- **As author Peter Mathhiessen (“The Snow Leopard” and other classics) observed “***we don’t even consider one generation**”.* So much for human values within *Laissez Faire* Capitalism.**

A Small Recent Victory(?), in France

- In 2021, a French court ruled that the French government was guilty of climate negligence
- *“A Paris court on Wednesday found the French state guilty of failing to meet its commitments to curb greenhouse gas emissions in a landmark ruling hailed by activists as a ‘historic victory for climate’”. This is naivete’ at the Multi-verse level.*
- *I’m being charitable here – more likely it’s deliberate manipulation of the masses with more “Hopium”.*
- **Historic? Landmark? The punishment was a fine of just 1 Euro. About a dollar(!)**
- **By ruling in “favor” of the plaintiffs, they make it impossible for them to appeal!**

“Citizens United” – Corporate Control of Campaign Financing

- If you're unfamiliar, *Citizens United* has nothing to do with citizens!
- The 2010 **Citizens United** ruling (a euphemism for corporate interests achieving no-limits campaign financing and without need of disclosures) has increased corporate control of our government, so that we can expect the **Gilens and Page 2014** correlations going forward to be significantly even WORSE (think “less than zero”) for avg. citizens.
- However a true citizens' group is pressuring States to approve a proposed **constitutional amendment** to outlaw **Citizens United**. They need 38 states. In May 2017, they won their 19th state – Nevada.

Today's Historic times

- The Trump administration's assault on climate and our future, and even on democracy, has been likened to a disease, an infection by foreign bodies
- And **THE primary immune defense system – the Press – did not rise to the occasion**, as it had already been infected by the same profit mentality as the disease itself.
- Fox, ABC, CBS, NBC, have been almost completely silent on the climate crisis, instead using “false balance” to neutralize the actual truth, preserving complacency for the status quo, friendly to corporate media paymasters.

Now we must rely on the last remaining immune defense system

- ...the grass roots actions of citizens, and, my hope: **OCCUPY DC For Climate**
- But for that to happen, citizens must know the grim climate truths and the stakes, and this is why the educational mission for climate change is too important to let it be run by those who would take the easy path to complacency – **complacency that some smart people in a lab somewhere are going to solve it all for us. It's the drug-of-choice. It's not "hope" – it's a drug.**
- **Call it Hope-ium.** Alluring, but fatal.
- Here's a more inspiring example of action...

This 15 yr old Swedish student has had enough. The path to real climate action starts like this, not as shown by the timid, who allow themselves to be manipulated and outmaneuvered, even as our Democracy is at stake.



It's the young who won't get fooled again



So **we have not come here to beg** the world leaders to care for our future. They have ignored us in the past and they will ignore us again.

We have come here to let them know that **change is coming whether they like it or not.** The people will rise to the challenge.

And since our leaders are behaving like children, **we will have to take the responsibility** they should have taken long ago.

GRETA THUNBERG

As of mid 2020, Even Some Young Conservatives Groups...

- ... are beginning to abandon fossil fuels, despite Republican politics.
- While they're misguided on the value of economic growth on a finite planet, what growth there is, should be powered by low-carbon energy ([Source](#))

2018: UK Climate Scientists Risk Prison for Not Being “On Board” with Pro- Economic Growth “Solutions”

- Their response is a new movement – the Extinction Rebellion.
- It demands a WW II – level emergency commitment to halt climate change by all means, even those including those damage to the conventional economy.
- **But their actions have the wrong targets** – blocking bridges, shutting down traffic... they are alienating the very people they need to win for a popular uprising. Pugnacious actions should instead be directed at the real perpetrators of our dysfunctional system laws – politicians and CEO's.

“The only way to demonstrate how Democracy works, is to get out and demonstrate. Then, civil disobedience, then uncivil disobedience. Because it’s the only way to take back the situation”

- James Anderson – Harvard professor of Chemistry and pioneer in the ozone hole problem and relation to climate

“Hope and Heroism” – Is not:

- ... applauding from the sidelines smart people in a lab somewhere trying to techno-fix our way to keep us in our comfort a while longer, while promoting their own economic advantage, and avoid confronting the far deeper illness of unchallenged growth on a finite planet.
- Heroism is doing what needs to be done, without trying to manipulate for cheering crowds. Taking the perilous but necessary path in spite of fear, in spite of condemnation and persecution. Conveying ACTUAL climate truth, and what it implies about necessary action.
- I’m talking of the Tim deChristopher’s, James Hansen’s, Kevin Anderson’s, Tim Garrett’s, Nate Hagens’, Steve Keen’s and Greta Thunberg’s... of this world.
- We should be impatient with those who grandstand otherwise.

On Our Side: Needed – a Warrior Spirit

- We have far too few Warriors on the side of pro-climate activists.
- I'm not, of course, speaking of violence. But I AM speaking of a more pugnacious truth-telling spirit, and refusal to draw a “nice” line and then back down behind it. That's the ticket to failure we have seen for decades.
- I believe the strong response and instant rise to climate activist stardom of **Greta Thunberg**, is because she exhibits the Warrior characteristics we need, and doubly so because she's not only fearless and determined, but she's only 16 years old as I write this. **Think about that – climate activists.**

Miscellaneous Small Policy Ideas and Initiatives

- Pay-as-you-drive insurance, to de-motivate “free” insurance miles. Studies indicate it could help reduce mileage at least by a small amount.
- The Netherlands Parliament has voted a non-binding resolution to shut down their coal industry entirely.
- 2,000 scientists, including many Nobel laureates, have petitioned Donald Trump to not interfere with science integrity and independence (didn't do any good, alas).
- Former Congressional staff members have put together a booklet advising how to get your congressman to listen. I've not studied it, being highly skeptical. But it's here for you to ponder.
- France's president Macron has offered immigration to besieged scientists in the new Dark Ages of persecution in Trump's U.S.. They are being offered a new home in France. But the rest of the Macron agenda has led to the “Yellow Vest” Rebellion.

If You Have More Promising Strategies, Given the Politics, the Physics, and the Time Scales Already Presented...

- ...then I would love to hear them. Perhaps I've overlooked something.
- I personally have no allegiance to any political parties or groups. I don't feel any are "my tribe". While I've more in common with the Progressives, I find major flaws in all political parties.
- The only "tribe" I feel akin to, is that of science.
- I am a registered NPP ("**No Political Party**") and that best describes my thinking. I'm looking for solutions to a very tough problem and have no conventional political tribal filters I'm interested in engaging.

A Final Advice on Strategy for Activists

- Don't allow yourself to be manipulated! **And don't YOU manipulate others!**
- Don't be a used-car salesman for climate; spinning your speech to cheer up others so to cheer up yourself – **Learn the straight truth, and then tell people the straight truth**
- Because to “sell”; to rosy-colored-glasses “spin” ... **is condescending to your audience.**
- **It's patronizing.** It's sending a phony message of superiority, and the message “*You can't HANDLE the truth*” and even “*I can't handle the truth, either*”
- **It's counterproductive**, since it's obvious to ~all that the Right Wing and Fossil Fuel interests who already blatantly lie in this way. It puts you in the same general camp: **A manipulator!** You therefore lose your credibility as a voice for objective truth, and you encourage your audience to throw up their hands in dismay and merely split the difference between the two sides. **THAT is a grave injustice that has been fatal for future climate.**

K44 Strategies – Policy: Key Points

- Fatal flaw of free-market approach to Commons: Exploit ASAP, use it up before the next guy does = **Tragedy of the Commons**, plus the **Culture of Economic Growth as the top societal value**, insures environmental degradation for all.
- Voluntary actions hopeless. 1 billion wealthy people cutting their carbon footprint in half only cuts global CO2 emissions by 13%
- “Market friendly” has been a dismal failure in climate action. Corporations always 5 moves ahead of slow policy that is naïve.
- Best single economic policy idea: **28th Amendment to Constitution, guaranteeing safe commons, rights to future generations.**
- End global fossil fuel subsidies, which are of order 6% of Gross World Product
- Tax consumption, not income, to lower environmental damages in general
- “Oregon Case” law suit surprisingly still alive in ‘19 and could possibly FORCE govt climate action - stay tuned. Washington State case a new victory here as well.
- Tax carbon AT THE WELLHEAD, don't tax emissions, nor at gas pump.
- Cap and Trade does not work.
- ****In our Representative Government: To enact good policy: Write your Congressman? – hopeless! Gilens and Page (2014) show average citizens have ZERO influence on what laws are passed, while economic elites have strong influence, and are 100% effective in blocking unwanted laws. Voters only elect, but have no control over lawmakers once in office. Motivates rampant lying from politicians**
- Therefore may require “**Occupy DC**”, blocking business as usual (peacefully but insistently) with a 100,000 to a ~million people, until the Press and sheer magnitude cause our Government to enact a 28th Amendment guaranteeing safe environmental commons, a stiff wellhead carbon tax on any carbon entering the U.S.