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This month's Museletter kicks off with an essay on the important role of social cohesion in holding societies together and addressing crises. That is followed by one summarising the current status of global action to combat climate change.

Social Cohesion Is Vital, and We're Losing It

The United States is tumbling toward socio-political crisis. Here are just a few of the distress signals recently visible:

- The insurrection at the US Capitol building (January 6, 2021).
- Rapidly increasing numbers of [death threats](#) against politicians—including threats from fellow politicians.
- A majority of followers of one of the two main political parties telling pollsters that they would approve of violence as a means to political power (for the population as a whole, [one in three](#) now say that political violence can be justified, up from one in six in 2010).
- A state governor planning to set up a [militia](#), answerable only to himself.
- Continual demonization by members of both major political parties of their opponents as "[unamerican](#)."
- US generals [warning](#) that disaffected military personnel may lead another insurrection in 2024.
- Threats to "[primary](#)" elected leaders (i.e., to challenge them in primary elections with candidates more extreme and doctrinaire), leading to ever-further radicalization and polarization of the political positions of policy makers.
- The proliferation of weapons (there are now [120.5 guns](#) in the US for every 100 people).

We've all seen this basic movie plot before—in "failed states" in the modern world, and in declining civilizations throughout history—and it seldom ends well.

For a society to succeed, people must cooperate. They must trust government leaders, who in turn must work together, at least partly for the benefit of the society as a whole. In every society, and in every era, there are instances of disagreement and cheating at all levels of the power structure; but, when acrimony and criminality are held in check, and when the populace is

motivated by shared aspirations and ideals, societies thrive. When social trust erodes significantly, societies fail.

Over the past years and months, and especially in recent weeks and days, several important books and articles have appeared, discussing in analytic and scholarly terms the ongoing loss of social cohesion in the United States. My purpose in this essay is to survey (1) the emerging understanding of social cohesion and its importance, (2) what threatens it in the United States today, and (3) what might prevent a national crack-up.

The Role of Cohesion in Social Evolution

As discussed in my recent book *Power: Limits and Prospects for Human Survival*, humans have evolved to be the most social of all mammals, and possibly all animals (only ants, bees, and termites rival us in terms of sociality). Starting tens, perhaps hundreds of thousands of years ago, human evolution began to proceed by group selection in addition to individual natural selection. Groups competed with one another, and occasionally behavioral “mutations” involving tool usage and language occurred within bands and tribes. Some of these novel behaviors improved the group’s ability to obtain food or to defend against large predators or hostile neighbors, while others served to further consolidate group cohesion. The “mutations” that promoted group success tended to be preserved, motivating other groups to take up these same innovations in order to compete better.

Language has been a key factor in the development of human sociality and cooperation. Using language, humans could, among many other things, refine and share their ways of making and using tools. Language also led to the creation of myths and rituals that gave groups a unique identity, while also enabling the design and implementation of punishments and incentives to keep everyone’s behavior within bounds.

The payoff of heightened cooperation extends beyond improved group survival prospects: for individuals, social cohesion delivers a sometimes-intoxicating feeling of being part of something larger than oneself. In societies that enjoy a high level of cohesion, collective accomplishments feed individual satisfaction, and vice versa. Each person’s capabilities are amplified by the megaphone of a group working in concert. People willingly—often enthusiastically—subordinate themselves to the group because doing so provides immediate, gratifying emotional feedback as well as long-range benefits such as better living standards; on the other hand, resistance to submerging oneself in the group generates feelings of alienation and depression.

Unfortunately, social cohesion has a shadow side. People sometimes express their loyalty to a group by fighting its perceived external enemies or persecuting group members who are seen as freeloading, insufficiently loyal, or just different. In the worst instances, ingroup-outgroup bias can spark a war or even genocide, yielding misery or death for some while also generating intense feelings of belonging and usefulness among the surviving combatants. Indeed, according to Peter Turchin, war has been a primary catalyst for social innovation and evolution; in the words of former *New York Times* war correspondent Chris Hedges, “[War is a force that gives us meaning.](#)”

Social scientists, including historians, have generally lacked the means to measure social cohesion directly, but there has long been a consensus among scholars that cohesion is a factor in societal success or failure. For example, Jack Goldstone, in [Revolution and Rebellion in the Early Modern World](#), describes how factional infighting among elites and their followers plays a role in many instances of societal collapse. As Benjamin Franklin reputedly said upon signing the Declaration of Independence, “We must all hang together, or we surely shall hang separately.”

The Cost of Cohesion, and the Cost of Losing It

In order to maintain cohesion, we humans engage in near-constant signaling of group membership and participation. Showing up at church on Sunday morning and flying the flag from the front porch on national holidays are only the most obvious of such signals. Choices of entertainment, clothing, and food—and, today, whether to wear a mask and get vaccinated—are all fraught with in-group, out-group symbolism. Further, the groups we align with may range from country to political party, religion, military organization, criminal organization, and corporation, all the way down to the family. Each of these groups and sub-groups has its own requirement for loyalty signaling—which can be problematic if these groups do not have aligning values or goals.

Sometimes for a whole society cohesion slips away. Such a society becomes internally divided, and individuals within it increasingly distrust authority figures. When this happens, the society loses its ability to solve problems, so that problems tend to accumulate and worsen. This is essentially what happened to the Roman Empire: at its height, it could easily have overcome invading northern tribes; but later, once its elites began being more concerned with fighting among themselves than fighting common enemies, the Goths and Vandals found easy pickings.

But, if the advantages of maintaining cohesion are so obvious, what causes it to break down? Peter Turchin has studied the problem of collapse for many years, using statistical methodology and an enormous [database](#) comprising quantifiable information about hundreds of societies throughout history. Turchin and colleagues have concluded that cohesion grows and decays in cycles. The people at the top of the social pyramid are in position to design the society’s rules, and they typically do so in ways that benefit themselves in the short term—while making society as a whole more vulnerable in the long run.

Over time, the society’s wealth is increasingly appropriated by elites. Early societies used taxes, tithes, and privatization to appropriate wealth. In modern societies, we also use interest on debt, investment returns, and government contracts to accomplish the same purpose. The resulting upward flow of wealth gradually leads to the increasing immiseration of people on the bottom rungs of the social ladder. The common people find themselves losing ground in terms of quality of life—their housing, food, education, and health care. Unable to make ends meet, they experience a greater incidence of psychological depression. Their faith in the system and in the elites falters.

Turchin and colleagues have also identified a second factor leading to loss of cohesion: [intra-elite competition](#). As more benefits accrue to social status,

more people inevitably want to ascend to the top of the social pyramid. In contemporary terms, they seek to become lawyers, politicians, CEOs, entrepreneurs, and investment managers. When this process shifts into high gear, Turchin calls it the “overproduction of elites.” Gradually, there come to be far more elite aspirants than positions available among elite ranks. Elite aspirants then tend to divide themselves into factions. Once that happens, defeating an opposing faction may become more important than actually doing useful work.

These two trends often converge. Due to immiseration, the common people may arrive at a point where they think things couldn’t possibly get any worse (they’re often wrong about that). So, they think, why not just pull the whole unfair social-governmental structure down? They start ignoring or flouting rules. Meanwhile, frustrated elite aspirants, sensing an opportunity, offer to lead disgruntled commoners in sabotaging the system and confronting opposing elites. Rebellion, insurrection, or civil war may ensue.

The United States: Fracturing and Fragmenting

This brings us to the present case. Turchin has written several [articles](#) and a book (*Ages of Discord*, 2016) warning that the historical data offer sobering insights about the US in the current decade. Over all, social power has become too concentrated, and this imbalance threatens to upend our social contract.

There are five kinds of social power in complex societies: political, economic, administrative, military, and ideological. In America, all of these have become organized along economic lines. Elites who control large amounts of wealth can effectively “buy” politicians (via campaign contributions), as well as extensive and favorable media coverage (as a way of exerting ideological power—see [PR!](#), Stewart Ewen’s account of the development of the public relations industry by the National Association of Manufacturers). Subsidized political leaders can then be counted upon to exercise administrative and military power on behalf of the commercial elites who pay for their election campaigns.

During its 246 years of existence, the US has seen periods of greater and lesser economic inequality. As Walter Scheidel shows in his historical study *The Great Leveler*, greater equality has typically resulted from war or financial collapse rather than political reform. Americans do sometimes try—using progressive taxation and social safety nets—to rein in inequality; but, during long periods of relative peace and prosperity, the chasm between rich and poor tends to deepen. That has been the case especially since the 1980s. Measured in terms of purchasing power, the income of the American lower and middle classes has stagnated or fallen during the past four decades.

At the same time, our production of elites and elite aspirants has bounded ahead. Turchin has documented a rapid increase in the number of law and business degrees earned, on a per capita basis, in the past 20 years, despite the fact that the cost of advanced degrees has skyrocketed. At the same time, the number of multimillionaires and billionaires has exploded, and the very richest Americans have seen their personal net worth soar by billions of dollars per year. The number of people wanting to influence public policy has increased, as reflected in the steeply rising cost of election campaigns. And

the numbers of political consultants and media “influencers” have also burgeoned.

Political scientists have found a way (outlined in papers by Poole and Rosenthal in 1984 and 1997) to measure American elite fragmentation, based on the [voting records](#) of members of the US House of Representatives. Turchin’s application of this methodology shows US political polarization reaching a peak around the start of the First World War, then declining dramatically for the next few decades. Since the 1990s, however, polarization has grown rapidly and is currently at record levels.

Polarization, fragmentation, and power imbalance are exacerbated by unfortunate aspects of the original design of US government. Some other countries have tried to model themselves on the US—a presidential republic with three co-equal branches and a federation of states—and haven’t always fared well. Current presidential republics include countries ranging from Afghanistan and Argentina to Zambia and Zimbabwe. A common problem in such countries is that the president ends up seizing outsized powers, while checks and balances between branches of government fail.

Further, due to the fact that two US Senate seats are apportioned to each state regardless of population, voters in sparsely populated states (e.g., Wyoming) end up having up to 70 times the power to influence federal policy as voters in heavily populated states (such as California). This results in some Americans feeling systematically disempowered, while others feel their “legitimate” power threatened by a decades-long recent demographic shift to coastal urban centers.

Add the facts that Americans of European ancestry will be in the minority by the 2040s, if current demographic trends continue, and that the proportion of Americans identifying as Christian is waning. This demographic-political-religious shift feeds “white replacement theory”—the notion among many Trump voters that Democrats have been deliberately using lax immigration policy to build an undefeatable multi-racial demographic base of support for their party (in fact, prior to 2016, immigration policy was largely bipartisan). Many Trump followers like to think of America as a white, Christian country, so multiculturalism, secularism, and demographic changes can provoke an almost existential fear; as a result, these voters see democracy as a threat rather than an ideal to be upheld. Democrats, for their part, often view Republicans as proto-fascists whose flaunted patriotism is entirely conditional on whether elections favor their candidates.

On top of all this, the social media revolution has contributed its own impetus toward fragmentation. There has been widespread public discussion about how news algorithms in Facebook and similar platforms have helped stoke conspiracy theories and extremist views via the “echo-chamber effect.” However, as Elizabeth Kolbert points out in an excellent [article](#) in the January 10 *New Yorker*, attempted reforms by social media giants have actually made a bad situation much worse. The newer algorithms, which boost content that elicits more emotional reactions, just result in the most outrageous posts getting the most views.

New York Times contributor Thomas B. Edsall, in a December 15, 2021 [op-ed](#), surveys the analysis and opinions of five political scientists with relevant

expertise; their consensus: America is approaching a tipping point, since “there is nothing in the system ‘pulling things back to the middle’ or disrupting lines of division. This situation is truly novel for the United States (although there are some parallels to the 1850s, when politics became nationalized around a single-issue divide). It is in a very real sense a new and quite different political system.”

Meanwhile, of course, crumbling cohesion is [hardly the only challenge](#) facing the US, or humanity as a whole. We face a series of converging crises: resource depletion, pollution (including climate change), overpopulation, an enormous buildup of unrepayable debt, and a lingering pandemic. Our inability to solve these problems is partly due to declining social cohesion. But, as these problems fester, there are more causes for blame, and even more issues for diverging factions to fight over. Politics becomes a self-reinforcing feedback loop of failure, recrimination, and dehumanizing caricature.

Where Are We Headed?

In an op-ed titled “[I Fear for Our Democracy](#),” published in the *New York Times* on January 5, former President Jimmy Carter writes, “I have . . . seen how . . . democratic systems . . . can fall to military juntas or power-hungry despots.” He urges Americans to respect free and fair elections, refuse violence, pass election reforms that would make it easier to vote, and ignore disinformation. But what if the steps he advises aren’t immediately taken? “Without immediate action,” he writes, “we are at genuine risk of civil conflict and losing our precious democracy.”

In his widely cited book [The Next Civil War: Dispatches from the American Future](#), Canadian novelist and essayist Stephen Marche attempts to game out the likely eventual consequences of waning US social cohesion. Like many other commentators, he sees a rerun of the 1860s Civil War as unlikely. But the five scenarios he thinks are more plausible are still bracingly stark. They include the assassination of a president, the destruction of the Capitol by a dirty bomb, and a deadly standoff between a militia and the Army.

One likely possibility discussed by Marche, and also by Zack Beauchamp in an essay titled “[How Does This End?](#)”, is for the emergence of a kind of faux democracy similar to what we see today in Hungary. “The change [in Hungary] was subtle and slow,” writes Beauchamp, “a gradual hollowing out of democracy rather than its extirpation.” Some right-wing US leaders, including Tucker Carlson and former President Trump, explicitly view the Hungarian experience as a model for the future of American governance.

Another likely outcome, modeled by Marche in several of his scenarios, is what might be called “civil war lite”—a long period of sporadic violence, possibly including kidnappings or assassinations of public figures at all levels, riots, bombings, brutal suppression of street protests, and takeovers of government buildings.

The just-published [How Civil Wars Start: And How to Stop Them](#), by University of California, San Diego political scientist Barbara F. Walter, points out that, over the last two decades, the number of active civil wars around the world has almost doubled. Walter investigates the causes and processes of internal national conflict, and how some countries manage to

pull back from the brink. Drawing on lessons from over twenty countries, Walter identifies risk factors including democratic backsliding, factionalization, and the politics of resentment. She points out (as so many others have) that all these risk factors are present in the US today, and also that modern civil war often doesn't look much like America in the 1860s, Russia in the 1920s, or Spain in the 1930s. Civil war “may begin with sporadic acts of violence and terror, accelerated by social media. It will sneak up on us and leave us wondering how we could have been so blind.”

Thomas Homer-Dixon, who for nearly two decades led a center on peace and conflict studies at the University of Toronto, in an essay titled “[The American Polity is Cracked and Might Collapse. Canada Must Prepare](#),” draws parallels between Trump and his followers on one hand, and those who subverted the Weimar Republic in Germany in the 1920s and early '30s on the other. He suggests several pathways by which the US could descend into a dictatorship that's obsessed with violently purging dissidents and scapegoated communities.

Some analysts believe that, ultimately, the splitting of the country is possible. Ecofeminist writer Starhawk envisioned this eventuality in her novel *The Fifth Sacred Thing* (1993), long before the advent of social media or the Trump presidency. Marche similarly suggests the US could cleave into four countries: the Northeast, the West Coast, the Midwest plus the Southeast, and Texas. It's arguable that a national divorce could have benefits, if it proceeded from [bioregionalist](#) and localist motives; but under circumstances of “civil war lite” it would almost certainly involve horrific casualties and widespread misery.

If America is to avert a violent, fractured future, it appears there is little time, and much to be done.

Can We Change Course?

Based on Turchin's analysis, a reversal of the current trend in the US toward polarization and dissolution would seem to require leaders to address the sources of immiseration and elite overproduction (Turchin himself makes an appeal along these lines [here](#)). That would mean taking substantive steps to reduce extreme inequality. As Senator Bernie Sanders reminds us, no individual really needs anything close to a billion dollars in order to live well. At least some Democrats have been trying to redistribute national wealth—yet under the Clinton and Obama regimes inequality soared. Democrats need to acknowledge that legacy and do much better. Republicans need to own their share of the problem, too, and it's arguably proportionately larger.

How might we reduce elite overproduction and infighting? No imaginable solution could be implemented overnight, but it's worth having a public conversation. How many lawyers do we really need? Political consultants? The de-financialization of the economy would reduce the number of hedge fund managers and venture capitalists, but nuanced strategies would be required to winnow out elite aspirants without treading on careers, civil liberties, and economic aspirations.

Structural changes might be required to the US form of government: eliminate the filibuster, restrict executive powers, ban partisan

gerrymandering and partisan takeovers of vote-counting, and apportion Senate seats by population. Some political scientists call for the end of the two-party system, which generates all-or-nothing contests that don't really reflect the will of the electorate. Systems with more parties require coalition and compromise. Ranked-choice voting and multi-member congressional districts (larger districts, with the number of representatives from each party in each district reflecting vote proportions for those parties) could help enormously. The trouble is, big structural changes like these would require a national political consensus that doesn't currently exist.

Historian Maurizio Valsanio, basing his [analysis](#) on the political turbulence of the 1790s, has more suggestions. Three tactics used by American politicians then, he argues, could help now. First, leaders strived to build a federal administration that could deliver personal and material benefits to its citizens. They funded infrastructure, including roads and canals, and tried to levy taxes equitably. Second, they created shared cultural symbols and practices, including flags, songs, and parades, that made citizens feel they had a common history and tradition worthy of pride. Finally, they sought to increase participation in elections, so that the people felt more connected with, and responsible for, their governance.

Of course, life today is a lot different from how it was in the 1790s. For one thing, our communication takes place less by way of handwritten letters and printed pamphlets, and more through the internet and social media. If we're to avert increasing polarization, these platforms will require an overhaul, and digital technology companies are not likely to undertake the process on their own. Government reform of these public utilities is required.

Barbara F. Walter points to South Africa in the 1980s and early '90s for signs of hope: most experts on violent conflict then expected the nation to descend into civil war—but it didn't. Instead, business elites stopped backing the white regime that was enforcing its apartheid policies with increasing violence. A new white president, Frederik de Klerk, negotiated an end to apartheid and the transfer of political power to the Black majority. Walter's point: in order to avoid civil war, a powerful group must be courageously willing to give up some of its advantages and to renounce extreme partisanship and violence. In the US today, that might entail, for example, the Republican leadership turning against Trump's "Big Lie" that the 2020 election was somehow fraudulent. Unfortunately, however, the opposite appears to be happening.

These remedies all require action by elites. But, as already noted, that's hard to organize under current circumstances. What can we, the people do? One thing would be to discuss and loudly advocate needed reforms, so that both parties are forced to take them seriously. But we as individuals could also reach out to people of differing political views, and create spaces for dialogue. The [Braver Angels](#) project tries to help, offering skills-sharpening workshops and online training, as well as weekly civil debates. It hopes to build left/center-right alliances at the grassroots level across the country.

The key is for more Americans to identify with something bigger than their political tribe. Sebastian Junger writes in his marvelous book [Tribe: On Homecoming and Belonging](#),

“If you want to make a society work, then you don’t keep underscoring the places where you’re different—you underscore your shared humanity.”

As Jimmy Carter implored in his recent editorial,

“We must focus on a few core truths: that we are all human, we are all Americans and we have common hopes for our communities and our country to thrive. We must find ways to re-engage across the divide, respectfully and constructively by holding civil conversations with family, friends and co-workers and standing up collectively to the forces dividing us.”

As with climate change, inequality, and our other collective problems, solutions will entail confronting and reining in power—whether the power of wealth, of outsized political representation, or of social media companies. But finding a peaceful way through will also require humility and efforts toward healing.

Do Americans have sufficient courage and goodwill? If not, it may soon become nearly impossible to avoid choosing sides.

How Are the US and Other Countries Doing on Fighting Climate Change?

On December 8, President Joe Biden signed an [executive order](#) to spearhead his administration’s efforts to combat climate change. What does this order actually promise to accomplish? How does that compare with what other nations are doing? Is any of it enough to avert global calamity?

The Biden executive order “will reduce emissions across federal operations, invest in American clean energy industries and manufacturing, and create clean, healthy, and resilient communities.” However, lofty verbiage aside, this is mostly about government operations (e.g., purchases of vehicles and standards for federal buildings) and not the entire economy.

Most countries (124 out of 137 signatories to COP 26, including the US) have set aspirational nationwide net neutrality goals for 2050. Suriname and Bhutan claim already to be net neutral, while other nations, including Uruguay and Sweden, are aiming for sooner, and a few, like China and Singapore, are targeting later dates. Very few countries have binding domestic legislation to meet those goals, or sound, detailed technical plans that will enable a full energy transition. (I’m not going to discuss here whether a full transition to renewable energy sources at scale is actually feasible; that’s covered in long form [here](#), and in short form [here](#).) So, the US is not doing as much as some countries, but more, at least on paper, than some others.

Countries that have become carbon neutral, or are aiming to do so soon, are in two categories: small nations with very low per capita energy usage (Bhutan, Suriname, and Uruguay), or European nations with roughly half the per capita energy usage of the US, and much stronger popular commitment to

tackling climate change (e.g., Germany, which has subsidized wind and solar for the last couple of decades). Iceland, which is aiming for 2040, has an unusually robust domestic renewable energy resource (geothermal) that is already highly developed. The United States is in a more difficult position, with very high per capita and total energy usage, and an economy that's historically closely tied to the fossil fuel industry.

Europe is reliant on fossil fuel imports (largely from Russia), so that group of countries has an extra incentive to reduce its carbon dependency—and that partly explains the higher energy efficiency standards that have been adopted by many European nations.

China uses an extraordinary amount of coal—over half the world's annual supply. (By the way, two-thirds of the commercially available solar panels are made with electricity generated from Chinese coal.) China will face mammoth technical challenges in replacing coal, and the nation's leaders know it. Even though they're installing solar at a record pace, that's still a small contributor to the Chinese economy. Globally, solar and wind together produce 3.3 percent of all energy; for China, these sources produce about 4 percent—about the same as the US. However, while wind and solar are growing fast, so is China's total energy usage. China is targeting 2060 for net-zero carbon emissions, which is later than most nations, but even that goal seems unrealistic and aspirational at this point.

In addition to his executive order, Biden has backed infrastructure spending that would incentivize industry to produce more electric vehicles and other technologies that could eventually lower emissions. This is important because solar, wind, hydro, and nuclear all produce electricity, but only about 20 percent of energy is currently used in the form of electricity. So, the energy transition will require vast spending to directly or indirectly electrify industries like aviation, shipping, trucking, the heating and cooling of buildings, and high-heat industrial processes like cement making. What Biden is proposing, both in the executive order and the infrastructure bill, is a start—but only that.

Not much in the Biden executive order is surprising for those who have been following US and global climate policy. The energy transition will be extraordinarily challenging and expensive (again, see links above regarding feasibility), so of course all governments are going after the low-hanging fruit first. Government operations and electric cars are the lowest fruit on the lowest branch. If Biden had, for example, proposed a plan to gradually but systematically reduce fossil fuel production and consumption throughout the US economy, that would have been remarkable and courageous. The best way forward for this or any other country would be a program for rationing our remaining fossil fuels, with an annually declining cap on production. That would aid planning at all levels, from households to industry to government. But political support for such a measure is unlikely to coalesce until circumstances (i.e., consequences of climate change and fossil fuel depletion) grow more obvious and dire.

Another helpful line of attack would be to replace GDP in government operations and planning with quality-of-life and health-of-environment measures (as Rep. Omar has [proposed](#)). The demand for GDP growth locks us all into the requirement for ever more energy and materials usage. That

path leads straight to a cliff, which we are fast approaching.

Meanwhile, the national and global climate discussion remains mired in energy misconceptions and ecological ignorance. Net neutrality is a technical goal, based on a technical reading of the climate problem. We're polluting the atmosphere with carbon dioxide, so (it is assumed) we just need to change our energy sources and remove some carbon from the atmosphere.

Meanwhile, however, the very basis of our industrial economy (energy and resources in, waste out) is inherently unsustainable. Policymakers are using climate change as a flag to rally the public in the general direction of efforts that would eventually result in better practices. But we could accomplish a lot more, and faster, if only the public—and policymakers themselves!—understood the simple math of exponential growth, and the near-lockstep correlation between global GDP growth on one hand, and the increase in energy and materials usage and waste (including CO₂) production on the other. Then perhaps we could get down to the task that will really matter in the long run—learning to live happily within Earth's limits.

How impactful is the Biden executive order—will it make a difference? Of course, everything makes *some* difference. US federal government energy usage is not trivial, especially if the military is included—a little less than a tenth of the total national energy budget. So, the order could be regarded as a down payment toward real action.

The Biden administration is doing what is politically possible. As we've seen, other nations (including European allies) are doing more, or have a somewhat easier technical pathway to net neutrality, so Biden wants to at least look like a leader in the fight against climate change, and his proposals provide some virtue signaling in that regard.

Is this all too little and too late? Well, it's certainly too little, and it's too late to avert significant impacts to nature and humanity. But it's not too late to wise up to natural limits and start planning for low-energy life after fossil fuels. If we adopt a cynical attitude and do nothing, we guarantee the worst possible outcome for future generations.