



richardheinberg.com

MuseLetter #328 / June 2020 by Richard Heinberg

Greetings readers,

It seems that we're all in it for the long haul! Though the last three or four months of lockdown have been trying and nearly everyone longs for a return to "normal," in reality the global pandemic is still in its early phase. I'll continue to write about ways in which the world is shifting beneath our feet, and what we can do to keep our equilibrium.

This month's MuseLetter consists of two pieces. The first is a sad summary of my nation's past and present; the other is a somewhat more cheerful reflection on what my wife Janet and I learned in our 20-year experiment with reducing our reliance on fossil fuels.

*Please stay healthy and safe,
Richard*

United States: An Obituary

The United States of America was problematic from the start. It was founded on genocide and slavery, and, while frequently congratulating itself on the rights and freedoms it granted its citizens, never managed to confront the demons in its past. The question would arise repeatedly, generation after generation: rights and freedoms for whom?

Nevertheless, the immigrants who founded a nation on a stolen continent managed to show up in the right place at the right time. The luck of geography and history insulated them from most wars in Europe, while supplying them with vast forests, navigable rivers, rich topsoils, valuable minerals, and much of the world's most easily accessible coal, oil, and natural gas.

The result, after a century-and-a-half of wealth accumulation and industrial buildup, was global dominance. America invented and taught the world the magic formula of consumerism: cheap energy + advertising + consumer credit = ever-growing levels of commerce, employment, tax revenue, and return on investment. The transformation of nature into quantifiable wealth via energy, technology, capital investment, and labor had never before occurred so rapidly, or on so grand a scale.

The 20th century was without question the American century. After World War II, which was fought at a distance from American soil, the dollar became

the world's reserve currency, and there could be little doubt who was in charge. Even though politicians in Washington insisted that their nation led by example and shouldn't be thought of as an empire, any other nation's hesitance to adhere to US rules resulted in a CIA-engineered coup, an invasion, or economic sanctions.

At least since the start of the new century, it has been clear that America's star is waning. The first signs of trouble came in the 1960s and '70s, as the pointless Vietnam invasion divided the country, US oil production began to decline, and Richard Nixon devised the War on Drugs as a strategy to incarcerate and disempower large numbers of African Americans. Financialization started turning America into a two-tier casino in the 1980s, but the owner class never complained and the renter class had no voice. More needless, costly wars were to come under the aegis of George W. Bush, a clueless rich kid who wandered into the presidency via family connections, a winsome Texas drawl, and a little help from the Supreme Court. The end of Bush's second term happened to coincide with the peak of world conventional oil production, the bursting of a financial bubble in the housing market, and the start of the global financial crisis. But the nation dodged these deadly bullets, just barely.

Bush's successor, Barack Obama, was charged with cleaning up the mess. Obama was intelligent, articulate, and empathetic; moreover, in his speeches he appealed to values that united most Americans. However, despite hope from many progressives that his election would lead to substantive changes in economic, military, healthcare, and environmental policies, Obama was unable or unwilling to break with the status quo. Crucially, he failed to prevent Treasury and Federal Reserve officials from crafting a recovery that rewarded the investor class while further immiserating wage laborers.

Speculators, now flush with bailout cash, were eager to identify the Next Big Thing; many thought they found it in the fracking frenzy. Soon small, heavily hyped companies were producing millions of barrels of oil each day from shale formations in North Dakota, Texas, and Oklahoma, while yielding almost no profits for drillers and investors. It was a pyramid scheme, but one with a tangible product. Peak oil was postponed, and America was once again the world's top petroleum producer.

Throughout the Obama years, social media began playing an expanding role in the daily lives of most Americans. These convenient, addictive, and highly profitable digital tools facilitated fun communication while also fracturing the country's common understanding of reality. They offered users ever more fodder for whatever they already believed, even if those beliefs amounted to the looniest of conspiracy theories.

In 2008, a European acquaintance asked me how I thought the US would react to having an African-American president. I replied that, given the persistent racism rampant in my country, there would be hell to pay one way or another.

Eight years later, hell arrived in the person of Donald J. Trump, promoter of the discredited notion that Barack Obama was actually born in Kenya and was therefore ineligible for the presidency. Plenty has been written about Trump's psychology—his narcissism, his lack of curiosity and compassion,

and his tendency to be driven by personal grievance. Much reportage has also been devoted to his administration's alarming actions—its dismantling of environmental regulations, its crippling of constitutional checks and balances, and its dramatic undermining of America's standing worldwide. Inevitably, a growing majority of the voting public is turning against Trump; his response is not to run a competent reelection campaign (or a competent government, for that matter), but instead to divide the country further on every conceivable issue, with the evident intent of contesting the results of the November ballot, thereby throwing the nation into political turmoil of a ferocity not seen since the spate of urban uprisings and assassinations (JFK, MLK, RFK, Medgar Evers, Malcolm X) in the 1960s, and perhaps not since the Civil War.

Oh, and there's the pandemic. The emergence of something like the novel coronavirus was inevitable at some point, as public health experts had long warned, but this particular bug just happened to arrive at a moment when America was divided and distrustful. Lack of federal leadership resulted in arguably the most inept pandemic response in any industrial country, with the US leading the world in infections and deaths. While some nations were able to eliminate the virus entirely by acting early and cooperatively, America under Trump dithered and denied its way into a polarized confusion wherein even the choice of whether to wear a facemask is a tribal signal. Up to half of Americans say they won't take a vaccine when it becomes available.

Due to the pandemic, America is now mired in an economic depression, with nearly unprecedented levels of unemployment and widespread bankruptcies. Meanwhile, the stock market—once again buoyed by unimaginably generous bailouts—is riding high.

As if the nation's body politic weren't already riddled with enough mortal ills, the cancer of racism has suddenly metastasized, exemplified in yet another police killing of an unarmed African American. Decades of Jim Crow laws, lynchings, criminalization, and government-backed loan programs that gave a lift to white citizens while holding blacks down have built up an unmanageable backlog of resentments and fears. As emotions reached boiling temperature, Trump responded by pouring fuel on the flames, tweeting, "When the looting starts, the shooting starts"—a phrase used previously by Miami Police Chief Walter Headley.

However, days of massive street protests, most of them peaceful and featuring people of all ages and skin colors, have shifted the political calculus of the nation ahead of the November election. As students of the history of authoritarian regimes have frequently noted, once a slide toward dictatorship begins within a democracy, it is difficult to halt; usually, the only force powerful enough to stop it is large numbers of people in the street. The recent protests didn't specifically target Trump, but they certainly drew energy from long-simmering anger and resentment against him, and his transparent support for white nationalists and institutionalized racism in all its forms. Now military leaders are openly breaking with the president. As a result of these developments, the likelihood of Trump consolidating power over the longer term is considerably diminished.

The protests were an outpouring that a majority of the nation could be proud of. Over the short term, America seems to have dodged a couple of bullets. The possibility of a Trump dictatorship is receding; so is the immediate threat

of the pandemic—in most people’s minds, at least. Businesses are reopening, and concerts and sporting events are being rescheduled.

Nevertheless, expectations of a recovery to the status quo ante are not just premature; they’re fundamentally unrealistic. Even assuming that a new administration takes charge next year, the United States is entering a period of political, social, and economic dissolution. Its unconventional oil production rate has now peaked and is in steep decline, a debt bubble even larger than the one that existed in 2007 is ripe to pop, and COVID-19 threatens to wash back through the populace in repeated waves. Meanwhile, the specter of climate upheaval, for which the US is also entirely unprepared, lurks in the background, promising rising seas and worsening wildfires, droughts, floods, and storms.

In short, we are living through the fall of a great power. With it will go a unique way of organizing the world. The symbolism of president Trump cowering in an underground bunker beneath the White House in late May couldn’t be plainer.

It is reasonable to ask whether the United States will continue to exist as a unified nation for much longer. The federal government has become so incompetent as to be increasingly irrelevant to the solution of many pressing problems—and a new face in the White House may not change the situation decisively. Out of necessity, states are exploring strategies of regionalism, as governors in the Pacific Northwest, the Midwest, and the Northeast collaborate to respond to the pandemic. Governor Gavin Newsom has even taken to calling California a "nation state." States do not have monetary sovereignty, and therefore cannot run up huge deficits in order to cushion the impact of economic depression. State banks, which could create and lend money for such purposes, have been proposed as the next-best thing. However, devolution of power to the states may do little to address the urban-rural economic, racial, and political disparities that are ripping the nation’s social fabric.

Whether or not they ultimately remain legally united, the country’s inhabitants and their descendants will probably still identify themselves as "Americans" of one subgroup or another. Out of necessity, they will find ways to adapt to a less consumptive, more localized way of life. For many—especially for those who take proactive steps to build personal, household, and community resilience—there could be some advantages to living in the wake of empire. But all will have some rough seas to navigate before there is much to cheer about.

Greed, consumerism, racism, and imperial ambition sealed our nation’s fate. If, as people, we wish to move forward, we must revert to the best of our early unifying values: hard work, thrift, generosity, fairness, honesty, ingenuity, and mutual respect. We’ll need to embody these values increasingly in local institutions, businesses, and other social arrangements of every conceivable kind if we are to minimize the human cost of national failure. It’s not too soon to start.

Originally published by [Common Dreams](#)

If My House Were the World: The Renewable Energy Transition Via Chickens and Solar Cookers

For the past two decades, my wife Janet and I have been trying to transition our home to a post-fossil-fuel future. I say “trying,” because the experiment is incomplete and only somewhat successful. It doesn’t offer an exact model for how the rest of the world might make the shift to renewable energy; nevertheless, there’s quite a bit that we’ve learned that could be illuminating for others as they contemplate what it will take to minimize climate change by replacing coal, oil, and gas with cleaner energy sources.

We started with a rather trashy 1950s suburban house on a quarter-acre lot. We didn’t design a solar-optimal house from scratch the way [Amory Lovins](#) did (we thought about it, but we just didn’t have the time or money). We did what we could afford to do, when we could afford to do it.

Our first step was to insulate our exterior walls, ceiling, and floors. That was probably our best investment overall: it saved energy, and it made the house quieter and more pleasant to live in. Then we installed a small (1.2 kw) photovoltaic system, and planted a garden and fruit-and-nut orchard. Gradually, over the years, we added battery backup for our PV system, a solar hot water heater, a solar food dryer, chickens, solar cookers, energy-efficient appliances (including a mini-split electric HVAC system), and an electric car.

Here are ten things we learned along the way.

1. **It’s expensive.** Altogether, we’ve spent tens of thousands of dollars on our quest for personal sustainability. And we’re definitely not big spenders. We economized at every stage, and occasionally benefitted from free labor and materials (our solar hot water panels, for example, were donated, and we built our food dryer from scrap). Still, once every few years we made a significant outlay for some new piece of electricity-generating or energy-saving technology. True, solar panels have gotten cheaper in the intervening years. On the other hand, there are things we still haven’t gotten to: we continue to rely on an old natural gas-fired kitchen cooking stove, which really should be replaced with an induction range if we hope to be all-solar-electric.
2. **Some things didn’t work.** Early on, we planned and built a glassed-in extension on the south side of our house. Our idea was that it would capture sunlight in the winter and reduce our heating bills. As it turned out, we didn’t get the window and roof angles right, and so we receive relatively little heating benefit from this add-on. Instead we use it as a garden room for starting seedlings in the early spring. I suspect the global renewable energy transition will similarly see a lot of good ideas go awry, and false starts repurposed.
3. **Some things worked well.** Twenty years after purchase, we have an antique PV system, with museum-quality Siemens panels still spitting out electrons. We made a big investment up-front, and got free electricity for two decades. This is a very different economic bargain from the familiar one with fossil fuels, which is pay-as-you-go. Similarly, making a rapid global energy transition, though offering some economic benefits in the long run, will require an enormous up-front expenditure. We learned that solar cookers are extremely cheap

and pleasing to work with—in the summer months. Finally, we learned that keeping chickens is an economical source of eggs, though hens are less cost-effective from a food-production standpoint if you choose to treat them well (and continue caring for them after their egg laying subsidies), as we did. There can be valuable side benefits: one hen, who's been with us for nearly 10 years, has become an emotional support animal who supplants our need for more costly sources of psychological aid. I could say much more about her—but that's for another occasion. Our chickens also provide manure and eggshells that enrich our soil. We compost some of our greenwaste and keep a worm bin, thus reducing energy usage by diverting some of our waste that would otherwise go to a landfill; we seasonally dry some produce in our solar dehydrator; and we can some of our fruit. These activities require little financial investment, but need a noticeable ongoing investment of effort.

4. **Energy storage is especially expensive.** Our solar panels have lasted a long time, but our battery backup system didn't. It now provides only about 20 minutes of power. True, our battery system is far from being state-of-the-art (it consists of five high-capacity lead-acid cells). Nevertheless, this proved to be the least-durable, least cost-effective aspect of our whole effort. The truth is, on both a diurnal and a seasonal basis, we rely almost entirely on the grid for energy storage and for matching electricity supply with demand. The lesson for our global energy transition: even though batteries are getting cheaper, energy storage will still be a costly engineering challenge.
5. **Reduce energy usage before you transition.** Because renewable energy generation requires a lot of up-front investment, and because energy storage is also costly, it makes sense to minimize energy demand. For a household, that's not problematic: we were quite happy shrinking our energy usage to roughly a quarter of the California average. But for society as a whole, this has huge implications. It's possible to reduce demand somewhat through energy-efficiency measures, but serious reduction will have economic repercussions. We have built our national and global economic systems on the expectation of always using *more*. A successful energy transition will necessarily entail moving away from a growth-based consumer economy to an entirely different way of organizing investment, production, consumption, and employment.
6. **Our house is not an industrial manufacturing site.** We don't make our own cement or glass. If we had tried, it would have been a more interesting experiment, but much harder. We were undertaking the easy aspects of energy transition. The really difficult bits include things like aviation and high-heat industrial processes.
7. **Adding personal transportation to our renewable energy regime shifted us into energy deficit mode.** We like our electric car, but charging it takes a lot of electricity (the energy needed to manufacture the car is another story altogether). Once we bought the car, we realized we need a larger PV system (that's on our to-do list). For society as a whole, this suggests that transitioning the transportation sector will require sacrifice (see number 5, above). A renewable future will likely be less mobile and more local, and will feature more bikes and ebikes than cars. We should start shortening supply chains immediately.
8. **True sustainability and self-sufficiency would have required a lot**

more money, a lot more work, adaptation to a lot less consumption—or all three. Our experiment was informal; we didn't keep track of every way in which we were using energy directly or indirectly (for example, via the embodied energy in the products we purchased). We continue to depend on flows of energy and money, and stocks of resources, in the world at large. We don't generate the energy needed to mine minerals, or to manufacture cars, solar panels, or other stuff we have bought, such as clothes, a TV, computers, and books. The same holds for food self-sufficiency: we get a lot of fruit, nuts, eggs, and veggies from our backyard with minimal fossil energy inputs, but we buy the rest of what we eat from a local organic market. The world as a whole doesn't have the luxury of going elsewhere to get what it needs; the transition will have to be comprehensive.

9. **You can't expect someone else to do it all for you.** Many people assume that the cost of the energy transition will somehow be paid by society as a whole—primarily, by big utility companies acting under government regulations and incentives. But households like yours and mine will have to bear a lot of the expense, and businesses will have to do even more of the heavy lifting. If households can't afford to buy new equipment, or businesses can't do so profitably, that will make the transition that much harder and slower. If we make the transition more through energy demand reduction rather than new technology, that will require massive shifts in people's (read: your and my) expectations and behavior.
10. **We're glad we did what we did.** Our experiment has been instructive and rewarding. As a result of it, we have a much better appreciation for where our energy and manufactured products come from, and how much they impact the environment. We are more keenly aware of what we formerly took for granted and how cluelessly privileged our nation has been in its reliance on cheap fossil fuels. Our quality of life has improved as our consumption declined.

We would do most of it all over again (though I'd put more effort into designing the solarium that now serves as our garden room). I would have thought, at the outset, that after 20 years we'd be more sustainable and self-sufficient than we actually are. My take-away: the energy transition is an enormous job, and people who look at it just in terms of politics and policy have little understanding of what is actually required.