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MuseLetter #242 / July 2012 by Richard Heinberg

Economic contraction and social claustrophobia

The social dimensions of the end of growth are coming into clearer focus with each passing month—from last year's Occupy uprisings, to the recent NATO demonstrations in Chicago, to mass demonstrations in Spain, and on and on. Also clearer is the desperate strategy of the powerful, which consists primarily of the militarization of the police and the criminalization of dissent.

Yet what else besides unrest and revolt is to be expected from soaring youth unemployment rates, falling living standards, and still-increasing levels of economic inequality?

By now it is also becoming clearer that the social impacts of contraction serve as a reinforcing feedback to the economy, worsening the debt crisis. A revealing phrase is being used to describe Europe's financial mess: "the street has taken control." As people express fears about the future of the euro by taking their money out of banks, the banks weaken and demand more backstops from governments, which have to run even bigger deficits in order to provide bailouts. Further, as people lose faith that government can address economic problems, they stop paying taxes—as is happening in Greece—thus making government even less effective.

Lack of social cohesion is itself a cost to the economy. It's hard to make a formal economy work at top speed if it is being sabotaged, or if a significant proportion of its output has to go toward keeping people from deserting it in favor of a growing informal economy of black markets, subsistence, and barter.

War is a timeworn solution to economic problems. Surplus young males are kept off the streets; idle manufacturing capacity is engaged; dissent can be ruthlessly swept aside. But in our current global circumstances war is itself becoming increasingly costly, and the US (which is typically at the center of any international conflict *du jour*) is extremely war-weary. Apart from threats and counter-threats over Iran's nuclear program, there are few signs yet that strategies of desperation are about to be deployed on a broad scale. But with economic tensions nearing the breaking point geopolitical rivalries could escalate very quickly.

The social consequences of economic contraction are discussed in more detail in my recent essay "The Fight of the Century."

The economy needs fuel . . . and more of it all the time

To most commentators, the current economic dilemma appears to have emerged solely from problems within the global financial system. But, as I argued in *The End of Growth,* there are deeper and —in the long run—much more important factors at work. The economy requires ever-widening streams of resources in order to grow, and many key resources are becoming more expensive to produce. This is particularly true with regard to energy resources, especially oil.

Amid claims from politicians and media commentators that the United States (or at least North America) will become energy independent in a decade or so, we hear from Bernstein Research that in 2011 the oil industry needed a price of $92.50 per barrel to justify finding new sources. That floor price level is expected to exceed $100 per barrel in 2012.

So are higher oil prices on the way? Not necessarily. As the economy tanks, that will cut demand for oil and the price will fall below the new-supply break-even level; when that happens, companies will cancel or delay new projects (as they did in late 2008 when the per-barrel price fell to $40). But if, for the moment, the economic news looks good, demand will grow and oil prices must inevitably return to levels that justify new supply. And those price levels are just high enough to begin undermining economic growth, as a spate of recent economic research has shown.

So whether the latest financial news is giddy or dismal, whether oil prices are up or down, in either case the game of growing the economy by increasing the production of affordable transport fuel is now officially over. Previously, we enjoyed *both* a growing economy *and* low fuel prices, with the latter feeding the former; now we see "cheap" oil only when the economy is in a tailspin of demand destruction.

Yes, "fracking" has given America temporarily inexpensive and abundant natural gas—so why not oil? In the case of natural gas, record-high prices back in 2006-2007 (due to depletion of conventional gas deposits) led to truly heroic rates of drilling and a temporary supply glut. Gas has become so cheap in fact that the shale gas industry is imploding, starting with Chesapeake Energy, the biggest fracker of them all. Producers are losing money on each well, so they're pulling back on drilling even if that hurts their company's share value (which it does). Next we'll see a consolidation of the industry, rising prices, and falling production—against nearly everyone's recent expectations. This is all clearly and persuasively explained in David Hughes's recent report for Post Carbon Institute, "Will Natural Gas Fuel America for the 21st Century?"

The media-storm touting America's energy resurgence has been truly surreal. During the past 12 months oil prices were at their highest sustained level in history, while the rate of world crude oil production has been flat-lined for seven years. Available oil exports are disappearing from world markets as exporting countries use ever more of their product domestically. The data shout "Peak Oil!" but news markets demand happy talk. And so pundits seize upon a

temporary production increase in North Dakota achieved by fracking oil-bearing shale as a "game changer." Once again we're told that *technology will save us!*

In reality, virtually all the easy, cheap oil has already been found and put into production; what's left to find and produce will be hard, nasty, and expensive. Oil-bearing shales have been known to geologists for decades, and fracking has been part of the technical arsenal of the industry since the 1980s, but the cost of development was considered too high. While the world price of oil hovered at over $100 a barrel for the past few months, the equation changed. But in shale plays production decline rates per well are very steep, so drilling rates must soar and soar again to keep extraction rates growing. The oil price must remain high for drillers to make a profit, but prices will stay aloft only if there are high levels of demand arising from generally increasing economic activity.

Over the short term we may see more boomtowns in North Dakota and hear more ridiculous claims about US energy independence, but in the end the fracking craze will be a financial and environmental nightmare.

Meanwhile, despite its "miraculous" growth in domestic oil production, the United States saw its trade deficit in oil increase to $327 billion in 2011, accounting for 58 percent of the total trade deficit, the highest-ever annual share.

The price of oil has been headed steeply downward in recent days, a trend that may well continue and accelerate. If that's the case, this tells us more about the condition of the global economy than it does about the ability of the petroleum industry to supply its products at an affordable price.

Historically, cheap transport fuel was a key factor enabling economic growth in the US and the rest of the world. Happy talk is likely to prove a poor substitute.

Blowing in the wind

In *The End of Growth* I argued that the direct financial costs of environmental disasters (principally, droughts and floods, together with large-scale industrial accidents) are rising to the point where they will soon overwhelm economies and make growth impossible. I cited the Haitian earthquake, the Deepwater Horizon catastrophe in the Gulf of Mexico, extensive wildfires in Russia, and deadly floods in Pakistan, all occurring in 2010; the monetary costs to the global economy that year (as figured by the insurance industry) totaled $250 billion. The 2011 total was undoubtedly much higher due to the Japanese earthquake, tsunami, and nuclear meltdowns, which by themselves caused roughly $1 trillion in damage (I have yet to see a final figure that takes into account other catastrophic events last year).

So far, 2012 has not seen a spectacular industrial accident on the scale of Deepwater Horizon, or a weather event on the scale of the Pakistan floods. But costs are accumulating in any case. Just one example: drought conditions were prevalent across 56 percent of the lower 48 US states as of May 8, almost twice the area affected last

year at that time, according to data from the U.S. Drought Monitor. In early July, more all-time heat records have been set in the United States than at any time since the Great Depression. As of July 2, millions of Americans in the Mid-Atlantic states are without power as a result of storms, and the region swelters in a record-breaking heat wave.

While episodic catastrophes get people's attention, slower, deeper, and more pervasive environmental changes are far more costly over the long run. We are disturbing deep, immense systems—the global ocean and the global climate. Just this past month came two especially worrisome studies about the ocean.

In the first, research by teams of Australian and US scientists showed there has been a massive reduction in the amount of Antarctic Bottom Water off the coast of Antarctica. This is the densest water in the world ocean, and it is gradually disappearing and being replaced by less dense water. The sinking of dense water around Antarctica plays an important role in the global pattern of ocean currents, which in turn has a strong influence on climate. Moreover, the Southern Ocean stores more heat and carbon dioxide produced by human activities than any other oceanic region, helping slow the rate of climate change. As the Antarctic Bottom Water disappears, with it goes one of Earth's primary climate buffers.

The second, by Australian scientists from the Commonwealth Scientific and Industrial Research Organization (CSIRO) and Lawrence Livermore National Laboratory, showed a clear change in salinity in the world's oceans, signaling acceleration in the global rainfall and evaporation cycle. The authors of the study determined that the water cycle strengthened by four per cent between 1950 and 2000, twice the response projected by current-generation global climate models. The upshot: "arid regions have become drier and high rainfall regions have become wetter in response to observed global warming," and we can expect much more of the same.

Recently I happened to be in southwestern Colorado, where I witnessed the persistent high winds and pervasive dust that increasingly plague the region. That put me in a particularly receptive mood to read an article in *Nature* by Joseph Romm just released for general circulation, titled "The Next Dust Bowl." Romm cites evidence gathered by Jonathan Overpeck of the University of Arizona in Tucson showing that average temperature and annual precipitation are heading in opposite directions over large swaths of the American West, as well as parts of Africa and Asia, raising the possibility that we are at the "dawn of the super-interglacial drought." Romm writes: "Human adaptation to prolonged, extreme drought is difficult or impossible. Historically, the primary adaptation to dust-bowlification has been abandonment; the very word 'desert' comes from the Latin *desertum* for 'an abandoned place.' During the relatively short-lived US Dust-Bowl era, hundreds of thousands of families fled the region. We need to plan how the world will deal with drought-spurred migrations and steadily growing areas of non-arable land in the heart of densely populated countries and global bread-baskets. Feeding some 9 billion people by mid-century in the face of a rapidly worsening climate may well be the greatest challenge the human race has ever faced."

The Dust Bowl of the 1930s substantially worsened the impact of the Great Depression. As we head into what might soon be the Greater Depression, it is likely that we will be contending with similar, but perhaps far larger ecological challenges that also make economic matters much worse than they would otherwise be.

And now the good news
Readers are to be congratulated for having braved paragraph after paragraph of unrelentingly dreary information in these two installments of the Update. But of course there are also things happening that are worth celebrating.

The last chapter of *The End of Growth* recommends community resilience as a primary goal in responding to converging economic and environmental crises. Working at the community level makes sense, as most national political and economic managerial systems are sclerotic and slow to change. Resilience, the ability to absorb shocks and continue functioning, will be an essential quality to foster as ever more economic and environmental shocks line up on the conveyor belt of time headed our way.

The past few months have seen a significant upwelling of interest in resilience, as exemplified in the appearance of new websites:

- Post Carbon Institute's highly successful site www.energybulletin.net is about to be expanded and rebranded as resilience.org, featuring separate pages on energy, economy, environment, food & water, and society. This promises to become the most useful go-to site on the web for anyone interested in news and resources for responding to the converging crises of the 21st century.
- John Robb, a former "tier 1 special operator" and astronautical engineer, who has written some excellent pieces on peak oil and the global security situation, has recently developed a community resilience website.
- The Rand Corporation, one of the world's oldest, most influential, and most secretive think tanks, now appears to be conducting research into community resilience.
- The Community and Regional Resilience Institute has developed a Community Resilience System (CRS), a practical, web-enabled process that helps communities to assess, measure, and improve their resilience to a variety of threats and disruptions of all kinds.
- Bay Localize has developed a Community Resilience Toolkit designed for groups, particularly those in the San Francisco Bay Area, to enable them to prepare their communities to weather tough times.
- The Huxley College of the Environment has created a Resilience Institute, which facilitates scholarship, education, and practice on reducing social and physical vulnerability to natural hazards through sustainable community development, particularly in Washington State.
- The Resilience Alliance has for years engaged in research on resilience in social-ecological systems (this organization is the granddaddy of resilience thinking). While this isn't a new site,

omitting it from the list would be a disservice.
- Finally, the Transition Network has increasingly been using resilience as an organizing principle in its expanding grassroots work at building post-carbon communities.

Meanwhile, there is also an upwelling of interest among economists and community activists in identifying and fostering the elements of a New Economy (co-ops, alternative currencies, no-interest banks, etc.), as Gar Alperovitz recently chronicled in this excellent article.

More than four pages of Chapter 6 of *The End of Growth* are devoted to a discussion of the shortcomings of GDP and to an exploration of alternative measures of societal progress. One of the more promising alternatives is Gross National Happiness (GNH), pioneered by the Himalayan nation of Bhutan. That country recently convened a high-level meeting at the United Nations to initiate a formal global discussion about indicators and goals. I was fortunate to be at that meeting and reported on it in this article.

Now of course talking about resilience, or a new economy, or a new economic indicator is not the same as actually bringing it into existence. But proactive systemic change has to start with talk, and with small-scale demonstration projects. So it's important to nurture the discussions and the projects wherever they appear.

Most of our adaptation to the new economic reality of sustained contraction will be driven simply by necessity. So it's encouraging to see, for example, that high gasoline prices are curtailing Americans' driving habits, that public transit ridership is increasing rapidly, that families are cutting back on spending and living in smaller spaces, and that ever more households are putting in food gardens.

One sees this adaptation-by-necessity especially in young people, whose expectations for the future are being shaped by the converging specters of ballooning student-loan debt and a shrinking job market. For men and women in their 20s, car ownership is no longer an inevitable badge of adulthood, and material accumulation is no longer seen as a worthwhile or realistic goal in life. For the first time in decades, the number of young American farmers is increasing.

There is no hope in hell that Transition initiatives, co-ops, and alternative currencies will spring up fast enough and on a sufficient scale to as to avert general economic misery. But that doesn't mean efforts along these lines are pointless; the more we do, and the sooner we do it, the better our prospects of weathering the inevitable storm.

If an essay such as this has any usefulness, it lies in motivating readers *not* to spend ever more time sitting glued to a computer screen watching currency values fluctuate and political leaders pontificate, but to go outside, tend the garden, and talk to neighbors.

Is economic growth ending? Yes. Is it the end of the world? No. It's just the beginning of the end for a utopian project that started as the dream of miners, manufacturers, bankers, advertisers, salesmen,

investors, and inventors, and that has turned to a nightmare for just about everyone else. Trends reach their culmination and wane, and new trends arise. Nature adapts, sometimes with slow and incremental change, sometimes in fury and destruction, and life goes on.

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