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*MuseLetter #253 / June 2013 by Richard Heinberg*

*The text of this month's Museletter is an interview I gave to the French newspaper La Décroissance. I've also included a link to my recent keynote speech at the Business of Clean Energy in Alaska conference in May, where I spoke about the shale boom, before answering audience questions.*

### **La Décroissance Interview**

**Is the commencement of "collapse" proceeding as you imagined it? Do you think that, rather than a short-term crisis, we are at a breaking point, and that industrial civilization is ending?**

We are almost certainly in the early stages of one of history's great turnings. For the European nations, an expansionary phase started 500 years ago, based on extraction of wealth at first from the Americas and then from the rest of the world. That immense project might have reached a point of diminishing returns in the 19<sup>th</sup> century, as Malthus famously forecast. Instead, history's biggest prize happened to pop into view—tens of millions of years' worth of stored sunlight, just waiting to be harnessed to do all sorts of economically useful work, including the work of industrial agriculture and the transport of goods over long distances. Fossil fuels drove the following growth surge, which proved to be by far the most potent in human history, dwarfing what had been accomplished (from Europeans' perspective) by colonialism.

Now fuel-fed industrialism is reaching its own point of diminishing returns. The effort required to extract oil and gas is now soaring. Meanwhile the side effects from burning fossil fuels are starting to catch up with us, in the forms of devastating droughts, floods, and heat waves.

In the face of diminishing returns from fuel-fed manufacturing, "advanced" societies maintained growth during the last couple of decades mostly by borrowing and investing. Economies became "financialized." Households went into unsustainable debt to pay for increasing rates of consumption, while governments—with no apparent recognition of the irony—borrowed more in order to fight their own burgeoning debt crises. All financial bubbles eventually burst, and the current one started doing so in 2007, though it has yet to thoroughly deflate.

As these over-arching trends play out, the next few decades will

inevitably be experienced as a period of economic contraction. Society will return to a size and level of complexity that can be sustained with available energy and capital. It is unclear what that level will ultimately be, but we should assume that the binge is over. We should prepare for a future in which we are less mobile, one in which more people engage in basic productive activities like farming, and one in which far fewer people are employed in secondary or tertiary activities like advertising, sales, and marketing.

**How do you link the economic crisis with the Oil Peak? In France, most economists don't speak about declining energy when they analyze the debt situation. Can you explain how energy influences economic growth?**

All economic activity requires energy. As I've already indicated, it was the cheap, concentrated energy of fossil fuels that enabled the boom of the 20<sup>th</sup> century. But oil from the supergiant fields discovered in the 1950s through the '70s is dwindling. Unconventional fuels such as tar sands and shale gas are now coming on line, but at a higher capital and energy cost. Their production will at best make up for declining quantities of conventional fuels for a few years; after that, we will see a decline in total energy as measured in terms of tons of oil or cubic meters of gas. But, taking energy **quality** into account, world energy is already contracting.

Economist James Hamilton of the University of California, San Diego, has shown how energy consumption and economic growth are closely linked. And ecologist Cutler Cleveland of Boston University has documented how the "decoupling" of energy consumption from growth that many economists cite as an encouraging trend is largely illusory, resulting from outsourcing production (globalization) and fuel switching.

Thus, as world energy supplies become tighter, growth rates will stall. And that is exactly what we are seeing: world crude oil production has stopped increasing and oil prices have risen dramatically; meanwhile many industrialized nations are at zero or negative growth, while others are maintaining the appearance of expansion by borrowing and deficit spending. The main countries that are still growing rapidly are the energy exporting nations, or nations that burn enormous amounts of coal—which is, for the time being, still fairly cheap. But warning signs are flashing even for the economies of China, India, and the oil exporters.

**Are there ways of softening the crash?**

Many people assume that there must be a technological fix to our problems. That seems unlikely to me: we cheated Malthus once, with fossil fuels, but today there is no miracle energy source on the horizon. Meanwhile, we have grown human population to perilous levels and the climate is becoming destabilized, putting agriculture in peril. Renewable energy will help us adapt, but it won't be able to fuel economic growth, or feed population growth, such as we saw during the 20<sup>th</sup> century.

Our primary hope lies in changing our behavior and expectations. We

must learn to live with less. Plan for economic stagnation or contraction. Share more. Create community. Policy makers should aim to shrink the financial industry, reduce economic inequality, stabilize and reduce population levels through family planning, decentralize food and energy systems, and build resilience throughout society.

Replacing GDP with an economic indicator that measures quality of life and environmental integrity would also be a very useful tactic, as it would help policy makers shift their efforts to areas where social progress is still possible. Consuming more doesn't necessarily make people happy, but beautiful neighborhoods where people know and trust one another, and communities where individuals have greater control over the circumstances of their lives, foster a sense of satisfaction that money alone can't buy.

### **What do you make of the particularities of Europe and France?**

The global energy crisis will be masked at first by economic turmoil: it will seem that energy demand is falling, whereas in fact declining energy quality will be driving continued economic weakness. For Europe, financial and currency woes will capture everyone's attention, making it difficult for governments to address underlying ecological problems.

The euro experiment was an exercise in centralization that seemed to make sense for a brief historic moment, but that moment has passed. The breakup of the eurozone will be messy and most Europeans will suffer economically in the years ahead while governments and banks sort out the issues.

By about 2020, energy and climate issues will become so acute that they can no longer be ignored.

France's dependence on nuclear power may be problematic over the long run, because the nation's ability to maintain the robust, complex societal infrastructure necessary to support and maintain this technology cannot be taken for granted. Nuclear power requires oil, trucks, manufacturing of replacement parts, and water management. We have seen in Japan what happens to nuclear plants when society loses elements of complex infrastructure for days or weeks at a time. France would be wise to invest now in distributed solar power, and to retire as many nuclear stations as possible. When the grid goes down or water supplies are interrupted, solar panels pose no threat to anyone.

### **Video: Richard Heinberg's 2013 BCEA Keynote Speech**

[View the video.](#)