



## Growth vs. Earth?

### **If communism failed the people, capitalism has failed the planet.**

Privately owned corporations big and small are committed to one simple obsession: maximising returns to their shareholders. They pursue this by growing revenues, cutting costs, and playing the system. There is no reward or incentive to voluntarily raise their cost base – for example, to account for the indirect costs of damage to the environment as a result of their activities – for the sake of the public good (unless customers reward them for it). That is where governments (are supposed to) step in. While businesses play their end of the game commendably well, the public sector has been woefully ineffective in its role as guardian of the environment. And is there a greater public good?

Economic growth raises all boats, is the elixir to all social ills, and must be pursued at all costs. The maxim that economic growth must be the guiding national priority is held by world leaders of every industrialised country and most all learned men of the dismal science, as we roast through Saharan summers and freeze through Arctic winters. Lower the unemployment rate? Grow the economy. Balance the budget? Grow the economy. Get re-elected? Grow the economy.

Few will argue against healthy economic growth in principal as a good thing, but what is healthy about an earth rendered barren and unfamiliar in 2-3 generations? Growth is only spurred by consumption. Consumption is enabled by

production. Production requires resources and applied power, and these require energy. Over 80% of today's global energy production comes from the burning of fossil fuels – oil, coal, and natural gas – that poison the globe with CO<sub>2</sub> emissions and other discharges. This sully of our planet blue has been accepted with little complaint through the industrial revolution – out of site, out of mind – but now things are getting weird with the weather. There is a growing tension between our genuflection to economic growth and the need for nature's ecosystem to remain vibrant. So we have a problem (that growing we who accept that the planet is warming and we-the-people are causing it.)

Should this tension between growth versus globe be a near-term concern? A December article posted in the *Huffington Post* by Dahr Jamail offers some disquieting facts about our current situation:

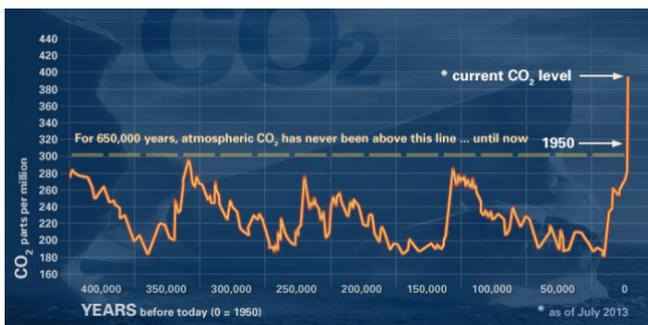
- We've never been on a planet with no arctic ice. Ice-free summers will start this decade.
- We've never been on a planet with atmospheric CO<sub>2</sub> levels above 400 ppm (considered the tipping point of no return by many climate scientists). That will also happen this decade.
- A 50-gigaton "burp" of methane from thawing arctic permafrost beneath the East Siberian sea is "highly possible at any time" according to a July 2013 article in *Nature*.

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That would be the equivalent of about 4 times the volume of CO<sub>2</sub> humanity has emitted into the atmosphere since the birth of the industrial revolution, and methane is 105 times more potent than CO<sub>2</sub> when it comes to heating the planet on a 20-year timescale.

- A fun fact about methane: the Permian mass extinction that occurred 250 million years ago, wiping out an estimated 95% of all species, is believed to be related to rapid methane releases after a 6C increase in earth's surface temperature.
- A 3.5C planet temperature increase by 2100 that would lead to the destruction of most ocean plankton and many land plants was predicted by the *U.N. Environment Program* in 2009. Humanity has never experienced an earth at 3.5C above the current baseline. In 2010 the U.N. program increased their forecast to a 5C increase by 2050. And a recent *International Energy Agency* report (November 2013) place the temperature rise at 3.5C by 2035.
- Between 150 and 200 species are going extinct daily, a pace 1,000 times greater than the "natural" extinction rate.

Let's pause here to consider a question: if you were offered a very well-paying job to taste test cigarettes, at a sampling rate considered high risk for lung cancer and other ailments, would you accept it? For readers answering yes, would you still accept it if the damage done was genetic in nature; i.e., your children and their children were almost certain to inherit your disorders and in advanced stages earlier in their lives? Okay, onward.



Back to our tension between growth and globe; two scenarios seem possible.

- Option A: Stay the course, stump for more economic growth, and continue to develop alternatives to carbon-based fuels at the margin while subsidising the fossil fuel industry to the sum of \$480 billion annually (a 2013 *IMF report* placed total subsidies to this industry at \$1.9 trillion actually when accounting for indirect subsidies; i.e., not requiring the industry to repair environmental damage from global warming

due to the burning of their products, or address adverse effects to health from pollution and other costs to society).

Unfortunately, given the minimal impact renewable energy has made to date on the swelling global demand for more energy supply Option A provides no reason to believe that the coming meltdown will be averted.

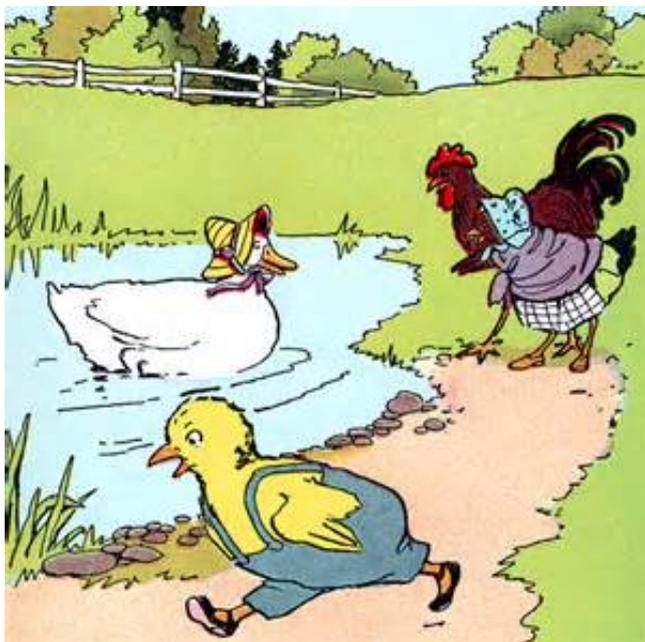
- Option B: Revolution. These are rarely pretty, but can be anticipated when food and water run short, lives are disrupted (or lost) and the masses get angry. Ambrose Bierce submitted over 100 years ago that "Revolution is an abrupt change in the form of misgovernment." Is there something seriously misguided in our governments today.

Those who manage our options – politicians and the corporate bosses with whom they sip whisky and play golf – are incentivised to Option A. Ribbon cutting ceremonies at new solar farms make for great photo-ops and keep the hounds at bay. And the likes of Exxon Mobil, whose 2012 profit was the second largest in U.S. history (surpassed only by its own 2008 record) shouldn't be expected to do anything radical that would threaten returns to its shareholders (see paragraph 1). Politicians' re-election campaigns depend on the patronage of big business, and anyhow no one gets elected being the bearers of bad news like *the sky is falling*. I mean it's sad about those Tuvaluans and their submerged island, but they aren't part of my electorate, and we can engineer a sea wall around Lower Manhattan, right? All is good, steady as she goes, stay the course.

Those who bear the brunt of option selections – the collection of humanity on all points of the globe (for global warming and its impact is just that) – may at differing time points decide that their politicians promoting Option A must go. Such invitations to leave are best achieved through orderly electoral processes. This takes time however, and some of us (depending on geographic location) are on a tight schedule. When Spain's productive orchards wilt and fail and aquifers in the North China Plain go dry don't be surprised when buildings start to burn. Elections be damned. Thank Napoleon Bonaparte for this one: "Revolution is an idea which has found its bayonets."

From the perspective of a flu-ridden planet swinging from sweats to chills, capitalism and the free market economy is badly in need of overhaul. It is creating immense wealth for a shrinking affluent class, but doing little to address the looming climate disaster. The billions invested into cleantech by the venture capital community has failed to produce a cost-competitive and massively scalable energy

alternative to fossil fuels. How do tiny start-ups with novel but expensive innovations compete with an entrenched industry built on mature technologies and subsidised by hundreds of billions of taxpayer dollars? Fracking has lowered Americans anxiety over exposure to Middle East oil. And Obama is likely to approve the Keystone XL pipeline, which he identifies as essential to support our economic growth. It doesn't sound like anyone is concerned about a falling sky. For every dollar the U.S. government hands to the renewable energy industry in direct subsidies (to great fanfare and flourish), it discretely hands another \$5.75 to the oil industry, which as noted above needs little help. Can real change be expected when less than half the members of the Republican party in the U.S. believe that the earth is warming, according to a 2013 *Pew Research Poll*?



On an optimistic note, more than a few Chicken Littles have started a dialog on economic alternatives, should anyone care. On the academic scene economists are talking about *natural capital*, which brings the value of natural resources such as topsoil, water, and genetic diversity into the economic equation. And various governments across the globe, including numerous U.S. states, China and the UK, have begun including natural capital into their assessments of progress and policy making.

Herman Daly, a University of Maryland Professor and former World Bank economist proposes a “steady state” economy for countries that have achieved material affluence. “Using tools such as carbon taxes on fossil fuels, the economy’s material production and consumption would be capped at the Earth’s capacity to cleanse and replenish itself. Higher consumption would be replaced by higher quality of life.”

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Finally, there is an emerging interest, particularly by the young who stand to lose the most from a warming planet, in a “sharing economy.” This lifestyle lowers the consumption compulsion and is best exemplified in the growing trend of car sharing, which in theory could be extended to many other tools and appliances that sit on our garage shelves unused most of the time. Why does every household need one?

Any other bright ideas? Ready to join the revolution?

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