Cute Fat Pig

Zero Waste Institute Newsletter for August 2014

Some of you may have heard of a new documentary about the history of the environmental movement called A Fierce Green Fire. It premiered on Earth Day April 22 but I watched an early viewing on Netflix. It is divided into five acts like Conservation, Pollution and Alternatives. For those young enough to only know the classic environmental movement by reading its stories and anecdotes, this will fill you in on some of its early origins, battles, successes, losses and legacy. Once again I found that just having lived through an epoch does not make me an expert. Fragility of memory steals that close, intense familiarity that was once mine and turns me into a spectator, struggling to remember what happened and how it felt. Documentation and refamiliarization are grudgingly needed to recall that sense of purpose and the sweep of events. Perhaps you will also find this video an exciting reminder of the rush, the inspiration and the tears.

I was not a member of the Sierra Club in the old days so the first act is news to me. However, when the Second Act is presented covering pollution, and Love Canal is expansively treated along with the protests, I recall many of the details that do not show up in this recent movie. Hooker Chemical had dumped 20,000 tons of various chlorinated solvent wastes into a canal serving as a waste dump in this Niagara Falls neighborhood.

For those of you too young to have lived through the battles of Love Canal (1980-83), this name came to exemplify pollution in this country. The leader/activist was Lois Gibbs who later formed the Citizens Clearinghouse for Hazardous Wastes in Virginia where she reigns today. Watching the film, you are given the impression that there was only one struggle of any significance. As soon as the federal government was pressured to buy out the houses of the residents and move them somewhere else, the battle was over and the champagne was passed around. Of course, for the residents, just getting away from the oozing chemicals had to be the primary goal but I prefer to focus on the global lessons.

What I have always seen as the most fundamental and meaningful lesson of Love Canal for the rest of us is nowhere mentioned in the film and nowhere mentioned in any of the history and so far as I know, was not appreciated by Lois Gibbs. Of course it has to do with reuse.

Those of you who read these newsletters or my website will be aware that as soon as any excess or unwanted material is designated as “waste”, the game of intelligent design is over. Calling chemicals “hazardous waste” emphasizes only their threat and neutralizes the most important question – how can they be redesigned for reuse so that they do not continue to be a threat in the future.

In this case, the chemicals dumped in Love Canal were mostly chlorinated solvents. These

are among the solvents most easily recovered by distillation. The very volatility and persistence which made them dangerous at Love Canal are the same features which make them easy to recover. Why then, would Hooker Chemical throw these mixtures in the ground rather than distilling them down into much smaller, dry residues. There is only one possible answer – money and calculated profit. Apparently, land was cheap enough so that Hooker could save a penny or two a pound by dumping them on the ground rather than tying up distillation equipment for "mere" recovery. The pollution which left the residents sick and dying was not even necessary for the industrial production. It was the taxpayers and residents who paid the price of relocation that allowed Hooker to save a few dollars.

The American rule is that an impulse toward waste, discard and destruction will always trump an argument for reuse. Anyone can insist on destruction of anything and the legal system backs him up. **In my view, the most important environmental policy change we could make would be to grant an overarching right to demand reuse wherever possible.**

The next part of the pollution section of the film deals with environmental justice and shows how this topic was years ahead of the rest of the environmental movement. However, as you listen to the struggles presented, once again you see a subsidiary goal presented as though it were the whole story. The entire tension is presented as the siting of dumpsites and incinerators *in poor or minority neighborhoods*. No preferred alternative is discussed but we are left to imagine that if dumps and incinerators could only be spread around the country so that every kind of neighborhood got a few, justice would be served. We could even have more of them, but just not concentrated in minority neighborhoods. I hope you see the problem. Maybe the "justice" part of this lament was being served but what happened to the "environmental" part? Are we to eagerly accept the discard of poorly made goods and materials and chemicals without a peep so long as everyone has to put up with it? This shows the poverty of the popular view of garbage, when the goal is not Zero Waste for everyone. Can any reader fail to see the parallel to health care under Obamacare? So long as expensive, wasteful health *insurance* companies are available to some more people, the quality of the healthcare itself is not an issue. With such diversion of attention to the *personal* issues, ignoring the global or long term solutions, the public is prevented from even recognizing larger problems of the underlying design of society.

THE DELUSION OF NATURAL CAPACITY

A recent article in the San Francisco Chronicle reminded me of a reigning delusion in the environmental movement that has held sway for a hundred years and should have long ago been laid to rest. I refer to the delusion that the natural repository of all unwanted excesses (known colloquially as "wastes") is the natural world. In this view, there is nothing wrong with throwing "mining wastes" into the streams of North Carolina. In fact, this is the inescapable way to get rid of unwanted fly ash, unless of course it is just spread on some land that no one is monitoring at the moment. The question is not *should this be done* but only *how much can the land or water accept*, *treat or convert* and not be destroyed. In other words, what is the *carrying capacity* of the natural world to step in and cure the stupidity of our manufacturing designs. It is this term, ***carrying capacity***, which is called on to do the dirty work of spreading the pernicious concept that pollution is natural and acceptable.

What is the modern, scientific or more responsible way to handle industrial excesses. Very simple! The same industry that believes it must produce an unwanted byproduct needs to design its operations so that there is no such byproduct after all. This resolution is bitterly resisted, since, on some level, in the engineering design department, it is possible to design a first draft in which excesses are shoved out the door, or the effluent pipe, onto the shoulders of an unknowing public, an uncomplaining planet. In this view, profits are greater because a portion of what should be necessary (but not profitable) design is externalized. How many factories can choose this route simultaneously? Our experience tells us that no factory should ever be allowed this kind of irresponsibility. Instead, any manufacturing operation that seems to need to shove its problems onto a passive Nature, should be prohibited. **Yes, prohibited from existing!** Other manufacturing designs, that do not produce byproducts to be absorbed externally should be the ones allowed to exist. In capitalistic theory, this used to be called competition but any observer knows that competition is just for others. In fact, the elites believe that they should be free to harm the planet or its population in the service of profit, any way they wish.

Be sure not to confuse a scientific design for industry with one that produces abundant waste products and then *treats* them afterward. This end-of-pipe approach may be the reigning theory of the regulators but it insures pollution just as much because it embraces irresponsibility of the primary producer, while attempting a low grade end run around pollution. So long as the dominant philosophy is one that passes through irresponsible externalization, some way will be found to hand the problems over to Nature, or to the public. If an additional industrial operation is needed to avoid creating a byproduct that is to be discharged to Nature, then let that be an integral part of the entire design. For example, had Hooker Chemical included an extra distillation step in its process, Love Canal need not ever have existed.

Where is the theory of *carrying capacity* encountered? William Catton, a twentieth century sociologist, wrote a book called Overshoot which introduced the concept of the earth being able to support or sustain only a certain amount of the human burden. When the earth (or a given ecology) could no longer support the stress put upon it by humans, he said the humans had overshot the carrying capacity of the ecology. This has become non-controversial in environmental theory and it is hard to argue with the notion as far as it goes. It leads directly to the idea of sustainability, in that a human society which puts more demands on its supportive ecology than it can meet is going to destroy or diminish the ecology and eventually destroy its ability to support the human society. This concept of demand on a carrying capacity is general; not a theory of how much pollution humans can put into the ecology. In fact, Catton seems to have thought primarily in terms of humans demanding inputs and raw materials beyond what his surroundings can provide.

Others who followed Catton seem to have slid over into a different interpretation, one more conducive to a theory of irresponsibility. Herman Daly was an early proponent for discharging pollution and excesses into the surroundings. In 2013 he was still able to write: “To be good includes keeping the economy from overwhelming the containing ecosystem with massive … pollution. The way to do that is to ... keep a large part of the earth ecosystem in natura — as a future … sink for high-entropy waste.

Zero Waste approaches demand that the entire notion of carrying capacity be thrown

overboard and replaced with responsible design for total reuse. Nature is not our garbage can, not even a little.

CHEMICAL INDUSTRY

I often read industrial news in Chemical & Engineering News and never fail to see nonsensical thinking masquerading as common sense.

In these newsletters, I have written often about the problem with rare earths. China has much of the world's supply of these critical elements and understandably wants to keep them for building its own products. The rest of the world salivates to get hold of more of China's resource. You might think that the industrial world would want to build its products so that these vital elements could be maximally captured and reused. No such luck! Even when critical components are involved, the rule is to use it all up, throw it away and demand more.

Just one example: the strongest magnets are made with neodymium, a rare earth. It would be fairly simple to standardize magnet designs and collect 100% of them for reuse. Don't hold your breath!

In the August 18, 2014 issue of C&EN (p. 21) I read that the U.S., Europe and Japan are attempting to use the World Trade Organization, a legal trade agreement, as a bludgeon against China's desire to keep its own rare earths for itself. The plaintiffs want to force China to sell them its precious earths so that they can compete with China's products more easily. The thought of trying to extend the useful lifetimes of those rare earths that already circulate into the distant future is nowhere in the minds of industrial designers. Just waste, waste and waste again.

On the same page, there is a story about a study done of “landfill leachate” i.e. dump runoff, to find out what chemicals are found in the water that comes from dumps either because wet garbage is discarded or because rain or underground streams add water to the dumps. The study was looking for household or commercial chemicals that could be identified. They found up to 82 of such chemicals in various quantities. Those included bisphenol A, a known estrogen mimic; a metabolite of nicotine, presumably from tobacco and nicotinoid pesticides; DEET, a common mosquito repellent and many others. Those dumps with the most rain had the most chemicals leaking out.

We have seen the same scenario played out in many forms over the years. About ten thousand studies of the composition of collected and discarded garbage have been done. Cities and dump operators never tire of doing one more and one more. They may cost in the neighborhood of $100,000 but the money is always found, even though there is never any surprise coming out of the composition study. The funds are completely wasted though the reports are eagerly reported as though they contained information worth knowing. No important or valuable use is ever made of the results. But they keep coming.

This study of the chemicals in runoff is just a new wrinkle in the game of endless studies of garbage. Next you will surely hear decades of handwringing over the escape of these toxic chemicals. We will be treated to endless, expensive and post facto schemes for removing or destroying these chemicals and the liquid in which they are found. There will be oxidizers, algae, engineered bacteria, fountains, electrical discharges and underground injection. Nowhere will you find any hint that the sources of these chemicals should be found and new

ways to package, sell and reuse these chemicals should be put into place. No! Discard into the garbage can (or the toilet) remains the natural and unchallengeable fate of the chemicals. The real reasons for these studies will never be heard. One, to cement the notions of garbage into our brains, since we are now spending more money to study it and two, to create new industries to apply end-of-pipe fixes to a newly discovered problem. And perhaps a third reason – to make sure that no money is left over for actually intelligent studies which might challenge the dominance and profits of the garbage industry.

A third article in that same issue, (A New Plan For Algae) is about the creation of new companies studying algae growing for fuel generation. While the goal of using algae to replace fossil fuels is put off for the future now as being too hard, the goal is not questioned. Every source of an alternative fuel is given the same task, namely, to replace our wasteful use of fossil fuels with a new wasteful use of new fuels so that we can continue to squander energy as we have become used to doing. Thoughtful analysts have pointed out that conservation and redesign of energy usage will have manyfold more benefits than the brute force introduction of new fuels (see e.g. Green Illusions by Ozzie Zehner) but greed and profit rule the roost.

One of the obvious drawbacks of the reliance on algae is immediately evident from the article in this quote: “to keep costs down, algae farmers will most likely rely on low-cost open ponds covering hundreds of thousands of acres.” Can anyone imagine that a single pond will serve the nation? Not only will millions of acres be needed, but the ground will need to be treated (clays, plastic sheets?) to prevent water absorption. And billions of gallons of scarce freshwater will be diverted from drinking and agriculture so that we can continue to drive four tons of steel to pick up a one pound pizza.

Until conservation and intelligent planning of our social and industrial lives becomes the norm, no new fuels will solve anything. Not even solar energy, I am sorry to say. Intelligence is the most scarce commodity in our industrial/social/consumer horizon. We must remove individual profit as a motivator and substitute social planning as the only way to solve our problems.

1-William Catton, http://dieoff.org/page15.htm**,** an excerpt.
2- Herman Daly, 2013, http://www.countercurrents.org/daly011013.htm, an article.
3-Wenjun Jiao The Waste Absorption Footprint (WAF): A methodological note on footprint calculations, http://www.sciencedirect.com/science/article/pii/S1470160X1300229X?np=y#
a contemporary abstract of an article showing the low level of thinking that continues to permeate academic theory in this field.
4-http://1800recycling.com/green-glossary/biocapacity
biological capacity, is the capacity of ecosystems to … absorb waste generated by human manufacturing.