The Tipping Point - A Global Death & Rebirth Story

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For anyone who has any grasp of the multiple global trends accelerating toward crisis points it is not difficult to imagine end-of-the-world scenarios, indeed the problem is to imagine a plausible scenario in which humanity ultimately arrives at a positive outcome. This is an attempt. I view this very much as an act of creative intention rather than prediction.

It felt like the end of the world at the time. Only looking back on it now do we see it as the birth of the new world. The climate had spiraled out of control much faster than predicted. The Arctic ice was already gone in the summer when a huge Antarctic ice sheet collapsed into the ocean sending off a tidal wave that flooded DC and left the ocean level six inches higher overnight. Any lingering denial flipped to panic; the US government led the new global agreement to take greenhouse gas emissions to zero in ten years or less. The sense of shared global crisis triggered a mobilization that can only be compared to WWII. Draconian carbon taxes were immediately imposed and CO_2 rationing rapidly implemented as the world scrambled to come to grips with the magnitude of the emergency.

People rallied around the climate struggle like a new form of global patriotism. Everyone pushed to exceed their own goals. Increases in electricity and fuel costs from carbon prices that had once seemed impossible were suddenly discounted as inevitable. The first 25% gain in efficiency paid for itself even at the old prices, while the new carbon prices made the technologies needed for the next 25% efficiency gain highly profitable. Capture and storage of CO_2 accelerated under a crash program. But instead of even burning coal, CO_2 prices made it cheaper to simply heat coal in massive ovens and burn the hydrogen rich gas that came off in a combined cycle power plant, leaving almost all of the carbon as solid coke. Global capital chased the cheapest coal around the world making money on the carbon credits and building materials that resulted from retrofitting coal plants to do this, but making less energy per ton of coal as a result.

In the midst of that turmoil it is impossible to know for certain how much was due to pressure on energy prices caused by the climate crisis, or whether it really was structural peak oil, or just price manipulation, or the terrorist attack on the major shipping terminal in the gulf, but when oil prices doubled -- again, first the Dollar and then the Euro collapsed, taking the Chinese currency and the Asian banking system out with them as well.

While many, including the US government and central banks, were still jockeying to reassert their power in the face of the global depression, the shared global purpose that arose in response to the climate emergency had forged a new outlet for social organization. In some cases the response to the climate emergency was led by elements of the military supported by governments, but more often the leadership came from NGO's and local grassroots community organizing efforts which suddenly transcended old political and even economic divides. Just as following 9-11 when people had forgotten about shopping in favor of a deeper spiritual connection with their family and community, the new crisis necessitated that return to deeper meaning. While the climate catastrophe brought a shared sense of global panic, the more immediate need for local solutions to water, food and energy also demanded local community organizing as a matter of survival.

A local currency movement drawing on best practices and software posted on the Internet allowed communities to establish new kinds of currencies, based on the mutual exchange of value, or simply time, while avoiding the mismanagement fraud that had occurred with the currencies in Argentina.

Using software that had been evolved by a diffuse global movement working under the radar, cell phone-enabled computerized trade credit systems rapidly spread. When Google recognized that trade credits were just information and enabled global clearing online, *The Google* became the standard international unit for mutual credit exchange among individuals and small businesses. By clearing transactions created by the mutual extension of credit among small independent parties, Google avoided creating an actual currency itself and therefore the central banks were able to save face and agree that it was not inflationary and therefore not a threat to the banking system. In reality, *The Google* was already too strong and with confidence in the money system in shambles governments could not afford to destroy the one working trade system for individuals and small businesses.

At the same time, faced with a loss of any secure instrument for international commerce, corporations looked to the *counter trade* mechanism that they had previously used to barter with each other in unstable regions of the world. A previously vetted computer modeling study showed that they could continue to safely transact global trade if they simply rationalized their counter trade activities into a single commodity backed trade credit, called the *Terra*. A new trade credit based on the Terra concept was implemented literally overnight in response to the crisis using existing commodity markets. The only trouble with the Terra was that, while it was a virtually perfect *measure of value*, and an essentially inflation proof *means of exchange*, unlike the previous debt-based fiat money, it was by itself a terrible *store of value*. This was due to the fact that all of the underlying commodities backing the Terra had storage costs and thus Terra's lost value over time if one held on to them.

In response, and with the loss of reliable interest bearing hard currency instruments that had paid a return on renting out money, corporate and financial managers instead now sought real *stores of value* that paid a more modest but truly positive rate of return. The supply of those turned out to be limited. Land itself did not lose value, but it did not necessarily grow in value either. All of the real sources of growth in value harvested or transformed energy from sunlight in one form or another. These included sustainable agricultural production and forests, but also solar panels, windmills, biomass conversion, energy efficiency, green buildings and other renewable energy technologies, which paid real returns, but as these were all in comparatively short supply, the underlying renewable energy technologies and the capacity to manufacture more of those technologies also paid real returns.

Thus, there was a flight of remaining capital into truly renewable energy, efficiency, agriculture and forests. Another consequence of widespread trading in *Terras* was that, just as the debt-based monetary system had demanded accelerating growth and effectively forced managers into the short-term time frame epitomized by the quarterly report, the new system drove managers to seek genuine long-term stores of value and thus tended to push corporate and financial managers toward long-term timeframes. As soon as this began to happen all of the social and environmental costs that had been considered economic externalities, and effectively prohibited from consideration under accelerating economic growth, were suddenly a part of the long-term cost structure that now had to be considered.

This trend also boosted the previous green building boom to a new level as new zero-energy buildings became the standard and longevity became the differentiating factor. Once a building had no energy input cost over its lifespan, the next question in determining how good it would be as a store of value was how long it would last. Designing buildings to last for 1000 years has become the standard.

Even as some global commerce and many corporations did manage to make the transition and continue, global economic growth as it had previously been understood was over. With no confidence in global credit the old system of debt-based consumption of consumer goods manufactured in China was gone -- overnight. In its place was a global scramble to grow enough food locally and regionally and to provide enough renewable energy to do this and meet basic human needs.

Much of the previously projected need for energy had been based on an extrapolation of the assumptions required to maintain the global economic growth based model of society. Once that was swept away the real facts on the ground proved to be much more modest, but still challenging. In the US, people stopped getting into an SUV to drive to an office in an air-conditioned high-rise to sit in a cubicle and shuffle paper to make the payments on their debt, but were instead suddenly faced with how to produce enough food, water and heat.

Yet it was not just survival, many people found a new sense of meaning and identity spending time planting and growing food with their families and communities. Industrial agriculture itself had been as big a contributor to greenhouse gases as fossil energy, so as the price of fossil fuel based chemical fertilizer and pesticides, as well as nitrous oxide and carbon dioxide emissions, all skyrocketed, that system collapsed. The shift to more locally distributed, labor intensive and essentially organic agriculture was thus a huge source of reduced net emissions, as well as increased economic stability. The unexpected benefit of US suburbs was that they provided enough space to grow food, especially after narrowing the streets and by using tree crops, fishponds and other permaculture techniques. The suburbs were also transformed by co-housing infill adding a commons space to sets of four houses.

The economic collapse/transformation by itself drastically reduced global greenhouse emissions, but nowhere near enough to counteract the rapidly unraveling climate catastrophe. The CO_2 level and temperatures were already accelerating out of control driven by the dynamics of self-perpetuating feedback loops involving the loss of Arctic sea ice, forest fires and increased methane emissions.

Here large scale centralized mobilization was key. Swiss Re and other reinsurance companies had already been funding studies of a variety of geo-engineering approaches for averting irreversible climate catastrophe. Seeding the upper atmosphere with sulfur had been considered, but with the acidity of the ocean already so high from elevated CO_2 levels that the shells of the diatoms forming the basis of the food web in the ocean were dissolving, the resulting sulfuric acid was too dangerous. Indeed most of the proposed projects reduced CO_2 at the cost of increasing ocean acidity, and with all of the major fisheries in collapse and the US Navy already deployed to prevent any further large scale deep ocean fishing, these approaches were all ruled too dangerous. But by seeding low clouds over the major oceans, and especially over the Arctic, with a fine mist of seawater we were able to safely cool the Earth enough to buy the time needed for the transition from fossil to renewable energy.

Once carbon emissions finally began to be brought under control and temperatures were temporarily stabilized and reduced with low clouds, it became increasingly obvious that previous climate modeling claims asserting that an atmospheric CO_2 level over 400 ppm could be viable had been unduly influenced by politicians and by a false pragmatism about what could be possible in a world still dominated by fossil fuels. A new scientific consensus emerged that a CO_2 level slightly higher than the previous interglacial maximum of 280 ppm would be required to prevent the Earth from sliding into the glaciation that had been accidentally headed off by carbon emissions from coal beginning in the 1800's, but for humanity to maintain the Earth's temperature in the range required for civilization the most likely optimum CO_2 level would probably be somewhere between 300 and 350 ppm. This meant not just stopping carbon emissions, but actively removing at least 100 billion tons of carbon from the atmosphere, while also reducing the acidity of the oceans.

With the low cloud shields stabilized over the oceans to prevent run-away warming, and over the Arctic to try to hold the global weather circulation pattern as close to the prewarming condition as possible, a crash program of agricultural charcoal production was launched to remove net carbon from the atmosphere, while also improving soil fertility and the water holding capacity of soils.

This was done in concert with the global water catchments and retention system wherein two billion people were put to work in an all out effort to build small earthworks and swales to capture, slow down and soak water into the soils. This program was like a massive distributed global WPA project to stop soil erosion, capture water from torrential rains and store it in the soil for droughts. The soil charcoal also helped. A global soils assessment mapped where the soil charcoal was most beneficial and concentrated global efforts there, although the distributed electricity generation and liquid fuels production that also came from the gasifiers used to make the charcoal made small gasifiers a viral phenomenon that rapidly grew by itself.

Large gasifier arrays in shipping containers, manufactured in former automobile and truck factories, could make enough electricity, diesel and biochar fertilizer from agricultural waste materials to support the agricultural production and processing of the food crops that the waste came from. By combining the biochar with manure a new, totally self-supporting, agricultural system was deployed that improved soils while gradually restoring the CO_2 level in the atmosphere. Using forest slash removed to reduce fire dangers, as well as un-irrigated energy crops like hemp, poplar and fast growing grasses, the same gasifiers could also generate surplus electricity and fuel while removing over half a ton of net CO_2 from the air for every ton of biomass processed. At the same time, small gasifiers that could make enough electricity and charcoal for a cluster of suburban houses, or a small village, were built all over the world using oil drums and engines stripped out of derelict SUV's, trucks and cars that had been abandoned when fossil fuels became scarce and expensive. The global carbon credit system made burying charcoal a source of a new kind of hard currency carbon credit that could be traded, while the soil fertility value and drought resistance made it attractive to use the charcoal in gardens to support local food and water production even before the credits.

Yet long before we began to emerge from the crisis, for each person there was a period that felt like a terrifying freefall into the abyss. It lasted for anywhere from days to months, and for many it was a literal death or near death, as famine and plague swept the world. Some retreated deeper into various millennial religious fundamentalist beliefs. But for most it was a deeply transformative experience. Out of those myriad personal psychic near death experiences a new redemptive story took hold, one that at once embraced all of the various prophetic traditions, but gave them a new inflection to go forward beyond the prophesized cataclysmic event; for once it had happened, and the adherent had not suddenly ascended, the power of that prediction lost its allure. Deep down in the bottom of their heart everyone wished for the wellbeing of their children and all of their descendents on Earth. We came to realize that had the debt-based consumer driven economic growth machine been permitted to continue for even another few years much of life on Earth would have been driven to extinction. But had the system not continued as long as it did many key efficiency and renewable energy technologies would not have been mature enough to be ready for the transition.

A new mythos suddenly emerged that at once embraced the cataclysmic events, but transformed the frame put on them by traditional and even reactionary religious groups. These new stories created a context and container that allowed people to see the possibility of imagining the situation differently, of recognizing that there was something deeply transformative and redemptive that they could choose to co-create out of the apparently destructive events all around them. Eventually, that story unfolded into one of not only survival, but of the birth of a new world; one greater than they had dared imagine could be possible, one where everything that everyone had previously done was at once validated as part of the inevitable unfolding of the divine plan, and yet once that new creative potential had been glimpsed it was now the responsibility of each individual, as the living incarnation of that divine intention, to dedicate themselves to bringing that greater vision to fruition. In this way each person was at once infused with a deep sense of meaning and purpose in service to the world they most desired for their own children, and the children of all beings, and challenged to imagine how they might themselves be the instrument of helping to bring that world into being.