

CLIMATE and ECOLOGICAL

DELUSIONS and CONTRADICTIONS

That Will Rapidly End Humanity...Unless...



Climate and Ecological Delusions and Contradictions That Will Rapidly End Humanity...Unless...

Version 1.0

May 2018



Climate and Ecological Delusions and Contradictions That Will Rapidly End Humanity...Unless...

by Association for the Tree of Life

Licensed under Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International (CC-BY-NC-ND 4.0 International).

Title page design and illustration:

Jean Arnold

Illustrations by Jean Arnold are part of the CC-BY-NC-ND 4.0 license above and are only to be used as part of this e-book.



Association for the
TREE OF LIFE

Association for the Tree of Life

www.tree-of-life.works/



Climate Emergency Coalition

www.cecoalition.org/

CEC is a project of ATL.

Comments, constructive criticism and feedback are welcome at:

FighttheDragon@tree-of-life.works

Table of Contents

| | |
|------------|--|
| 3 | What Is This? |
| 8 | Introduction |
| 11 | Part 1: The Tinkerbell-Effect and Breaking the Climate |
| 19 | Interlude |
| 22 | Part 2: Combating Delusions |
| 30 | Interlude |
| 31 | Part 3: Disasters Are on the Menu: How Do We Respond? |
| 36 | Interlude |
| 37 | Part 4: Finding a Way Forward |
| 52 | Interlude |
| 54 | Part 5: Humanity's Kairos |
| 60 | Interlude |
| 63 | Part 6: Making Our Hydra-Headed Dragon Delusions VISIBLE and VISCERAL |
| 79 | Interlude |
| 82 | Part 7: Challenge, Change, and Transformation |
| 89 | Interlude: Justice, Equity, Fairness: Toward Systemic Transformation |
| 92 | Part ∞: What to Do from Here |
| 98 | Appendix I: Specific Actions Steps to Fight the Dragon and Lead to a Viable Human Future |
| 103 | Appendix II: Additional Actions to Help Our Planetary Emergency |
| 104 | Appendix III: Reflections on Scarcity vs. Abundance |
| 107 | Glossary / Abbreviations / Acronyms |
| 112 | Acknowledgements |

Climate and Ecological Delusions and Contradictions That Will Rapidly End Humanity...Unless...

What Is *This*?

We start this short book, long essay that you now have with the title first word: Delusions. It is written by, and with illustrations by the Association for the Tree of Life (ATL), primarily its editorial Board. We have other information and essays at our website: www.tree-of-life.works/. We are a non-profit organization with two-dozen years' experience—failure is the more correct term—of trying to tame the global warming beast. One, or maybe two of the Hydra-Heads of our “Delusion Dragon,” whom you have met on the title page, represents that crisis. Our failure, and the failure of our culture to address what is the verifiably the most crucial challenge facing humanity, led to this essay.

A delusion is something that a person believes and wants to be true when it is actually not true. The same can be true for a group, as was true for the nations of Europe at the time Prime Minister Neville Chamberlain returned to the United Kingdom from his meeting with Hitler in Munich, 80 years ago and declared: “I have returned from Germany with peace for our time.”¹ It is primarily remembered for its ironic value: less than a year after the agreement, Hitler's continued aggression and his invasion of Poland² was followed by declarations of war on Germany by France and the UK. We, ATL would say that Hitler deluded Chamberlain.

A delusion is a false belief held, despite strong evidence against it. Early in our story we meet the Tinkerbelle-Effect, a grand delusion held by the world, effected by world governments. This delusion is the belief that the carbon fuels' overshoot—global warming—will be fixed by virtue of a technology still in the first “idea” stages.

Part of the pervasive delusions attending to the climate wars is the belief that our actions now can be “fixed” by invention and deployment of technologies once we have blasted past the climate ceilings, the limits the world said it would not exceed. No such technology is in development that can plausibly work to “fix” the overshoot. Yet, the delusion is part of the world's agreement, put there in ATL's view, so that we can continue to do what we are doing while proposing that a phantom fix will come along later. Thus, fossil fuel demand and use are still rising.

¹ Wikipedia, “Peace for our time,” en.wikipedia.org/wiki/Peace_for_our_time.

² Wikipedia, “Invasion of Poland,” en.wikipedia.org/wiki/Invasion_of_Poland.

The economic, social, political, and moral (ESPM) systems by which industrial-consumer society operates contain similar delusions, and we focus on those where obvious overshoot predominates. The resulting verifiable measuring sticks in common use explain that disastrous episodes will result.

What is important, however, is that this essay not only diagnoses the coming disasters, but also provides disaster responses consistent with arousal of our collective fight-or-flight system. The story narrators do something quite different than what we see others do in response to these looming crises related to fossil fuel excess.

The Republican-conservative-business denial machine is the only major political party in the world that denies obvious fossil fuel excess. Everywhere else, we find differing quality of analyses of the crises we face. Rarely do any provide you, the reader with actions and responses that are consistent with the scope, scale, and urgency of the crises. ATL believes that this essay is demonstrably different in that regard. We argue that we suggest actions and responses that meet the challenge of the scope and scale of the crises—and take into account the need for immediate action and quick phase-out of fossil fuels. It will take a realization that that this time is a Kairos³ moment for humanity, however.

Many ideas suggest that if Democrats replace Republicans then the situation can be remedied, but Democrats during Obama’s Administration and previous ones as well, did not suggest policies near to the scale of the problem, much less those that could stabilize climate, or move our nation toward ecological balance. Democrats today do not propose policies remotely consistent with the global data.

Similarly, many suggest that we can substitute renewable energy for fossil energy and keep our wonder-world intact. However, there is no realistically achievable plan for that substitution; renewables comprise only a few percent of available energy; and fossil fuel use continues to rise unabated. So, even the best renewable energy plans are pie-in-the-sky given our current ESPM operating systems.⁴ This is true across the industrial world. Renewables alone will not and cannot fuel our current economic production-consumption system.

Many expect “technological breakthroughs” to relieve the situation. Three contradictions are embodied in many of these beliefs. First, there is no breakthrough system on the horizon; second, any substitute must be scalable and economic, and the larder is empty there as well. Third, even if a breakthrough technology were to come along in the next ten years or so, the deployment would not take place in time to save our economic and social systems from collapse. Working advanced nuclear plants that burn nuclear waste for energy production, touted by Bill Gates, is such an implausible example.

Our current energy system, some 80% of which is comprised of fossil fuels, drives our industrial-consumption economy. But it fails to be an enduring system in two major ways. First, it exudes extensive, ever-growing waste and toxins while it destabilizes the climate. Second, affordable supply

³ Kairos is an ancient Greek word meaning the right, critical, or opportune moment. Kairos is a fleeting moment when an opening appears, and if success is to be achieved it must be driven through decisively. For more, see Glossary and Wikipedia, “Kairos,” en.wikipedia.org/wiki/Kairos.

⁴ In this context, “operating system” refers to the overarching human-made system by which we run our world. The economic, societal, political, and moral spheres are interrelated, interacting sub-systems within the whole. For more, see Glossary.

is a temporary phenomenon that will evaporate within these next few decades. Young people will inevitably see and feel the end of the fossil fuel era.

There is a limit to the amount of burnt carbon that humans can toss into the air and still be viable. That we have enough available fossil fuels, just like we have enough nuclear war-heads to end humanity is not too difficult a concept for most people to grasp. The worlds' nations have decided, in the Paris Climate Agreement that 1.5-2° Celsius is the heat boundary that stops short of catastrophe.⁵ Most of us know that Trump decided to remove US participation in the UN effort to hold to that heat ceiling. But, there are no wealthy industrial nations—the nations causing the problem—that are taking the agreement seriously.

That means disasters and catastrophes are “in the making.” It also means that the meek efforts the US is now making to “reduce” its fossil fuel use is tiny and without substance compared to the massive reductions needed. Consider that the amount of heat accumulating in the atmosphere is measurable in terms of Hiroshima-atomic-bomb equivalents.⁶

So, how do individuals, families, and groups respond to the failure of every one of the world's industrial nations? Particularly when every corresponding political and economic system is virtually ignoring the crises, along with their obvious, verifiable, factual, and measurable correlates?

The game many of us now play with the crises goes something like this:

1. An analysis of some parts of the crises is presented.
2. In response, some dispute or distort the data and information. That could be remedied, but some parts of the political, social, and economic systems do not want to verify facts, but instead try to dispute what is confirmable. This happens for many reasons, and the interests behind the mis-information are multitudinous. This disputation stops a large number of people, and they have been fixed into belief that these crises do not matter to them personally.
3. Those who present the facts for analysis suggest some theoretical policy fix to the parts of the crises explained. However, the person reading the analysis has no realistic ways or means to respond to the need for policy, because of the blocks presented by the attendant political, economic, and social systems.
4. The individual who reads, or hears the analysis is then left with no plausible pathway to employ the “fix” mentioned. **Thus, there is no plausible agency⁷ for the caring individual.**

The individual is left with no plausible pathway to employ the “fix” mentioned. Thus, there is no plausible agency for the caring individual.

⁵ The Agreement aims to keep a global temperature rise this century well below 2°C (3.6°F) above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5°C. However, many scientists acknowledge that 2°C is dangerous. For more, see the Glossary and Wikipedia, “Paris Climate Agreement,” en.wikipedia.org/wiki/Paris_Agreement.

⁶ How calculations of heat accumulation are made can be found here, “We Are Heating The Planet With 4 Hiroshima Bombs Per Second,” www.exposingtruth.com/heating-planet-4-hiroshima-bombs-per-second/. To see the heat accumulated since 1998, go to: www.tree-of-life.works/heat_energy.

⁷ Having agency is having a means of exerting power or influence related to these pervasive crises.



Jean Arnold

The result is resignation for a large number of people, confusion for even more. Then, the truly devoted frequently work with organizations that pretend that what they are doing will matter. To do that, the scope, scale, and urgency have to be ignored, because people must believe “every little bit helps,” when in fact that is not really true. Moral exhortation substitutes for effective action to address the problem.

Examples abound, but they hold in common the delusion that individual preferences and actions can accumulate into comprehensive system change. Moral exhortations to vegetarianism, lowering carbon footprints, calling for carbon taxes, installing solar, buying offsets, driving less, divestment campaigns, fighting local fossil fuel projects, and similar “suggestions,” will not substitute for national rules and laws.

The Paris Agreement is illustrative, and its shortcomings are detailed in the essay following. “Intentions,” which are what the Agreement is comprised of, are quite different from follow-through system-changing actions.⁸ What a nation says in diplomatic terms and what it does are often quite different, as history amply demonstrates. The data, and the United Nations’ own Emissions Gap report explains this,⁹ showing the gap between national “intentions” and actions.

The *Delusions and Contradictions* story faults the world’s political systems for ignoring many of the Dragon’s Hydra-Heads. The world recognizes the Dragon’s presence, at least. For the United States, the Dragon has the present Administration in its grip. Still, it is not seen or felt. But, there is no part of any body politic anywhere that is pointing the whole in the directions needed to respond to the Dragon’s grip.

The story-tellers also fault the climate movement¹⁰ itself for its inability to reduce emissions whatsoever, failure that has been consistent for the last 2+ decades, despite its own stated goals and missions. Further, we find the current 2018 climate movement without substantive or plausible programs to deal with the scope, scale, or urgency of the crisis. Moreover, the climate movement and its allies do not respond to the other heads of the Dragon. Ecological overshoots,¹¹ the effects of some of these lethal heads will also bite-back.

⁸ For more about systems and system change, see Glossary.

⁹ The *Delusions and Contradictions* essay explains this in relevant detail in subsequent parts of the story.

¹⁰ Wikipedia, “Climate movement,” en.wikipedia.org/wiki/Climate_movement.

¹¹ When a population exceeds the environment’s carrying capacity that population is in overshoot. Global overshoot occurs when humanity’s demand on nature exceeds the biosphere’s supply, or regenerative capacity. Such overshoot leads to a depletion of Earth’s life supporting natural capital and a buildup of waste. At the global level, ecological deficit and overshoot are the same since there is no net-import of resources to the planet. Local overshoot occurs when a local ecosystem is exploited more rapidly than it can renew itself.

Faced with the near-impossible difficulty that this Dragon presents, and with humanity's comprehensive inability to respond to the Dragon's threats, the narrators of the story, just short of despair find that a new and different personae and perspective floats down from the Sistine Chapel ceiling¹² and engages them. Assisted by this intervention, the ATL story-tellers find a comprehensive pathway to address the Dragon. Moreover, this path can be followed by anyone who reads and understands the essay.

Importantly, fighting the Dragon corresponds to normal human disaster responses. This requires that once the disaster is presented, preparedness is a simultaneous process. Coming disasters must be coupled with immediate responses. Otherwise, the expected fight-or-flight arousal results in resignation, absent plausible responses.

Presenting ways and means that an individual or group can use to respond to the endemic crises, rather than simply waiting until our systems "fall-off-the-cliff," is the thrust of this story. Therefore, we believe we provide a way for an individual and for groups to have agency, i.e., having a means of exerting power or influence related to these pervasive crises, where people perceive no agency at this point.

An important part of responding to crises means that the crises are seen and felt. The delusions operating in our US nation preclude the perceiving and feeling, so crises simmer and boil. This essay eliminates those clouds layered over our crises that special interests use to hide the need for traction.

The ability to see, feel, and then respond with options related to the climate-ecological crises Americans live within is what we believe is relatively unique about this essay. ATL hopes and expects that you can be part of the seeing-feeling-responses team. We do not believe we have final answers to the crises in our story or to the inevitable disasters coming.

Humanity is not in a situation in 2018 where all disasters are avoidable. We have tolerated the conditions leading to disasters for far too long for that. But, ATL believes that humans can get through the bottleneck¹³ we have created for ourselves, and that a viable future for humanity awaits construction. Moreover, ATL is open to comments, constructive criticism and feedback. Please forward your considered responses to: FighttheDragon@tree-of-life.works.

The Association for the Tree of Life dedicates this essay and our work to Marcus, Madeline, and Calvin, and to all of the grandchildren who will want us to do everything to mitigate¹⁴ the crises we face, and their force and effect. They hope and expect that we will construct for them a future worth living in. That would be a transformation worthy of the focused effort of the "better angels of our nature."¹⁵

¹² Wikipedia, "Sistine Chapel Ceiling," en.wikipedia.org/wiki/Gallery_of_Sistine_Chapel_ceiling_-_/media/File:CAPPELLA_SISTINA_Ceiling.jpg.

¹³ A population bottleneck is a sharp reduction in the size of a population due to environmental events, including overshoot.

¹⁴ To mitigate is to lessen the severity of the climate crisis. Climate change mitigation generally involves reductions in human emissions of greenhouse gases. See Glossary for more.

¹⁵ The phrase originates in Abraham Lincoln's first inaugural address: Wikipedia, en.wikipedia.org/wiki/Abraham_Lincoln%27s_first_inaugural_address.

Introduction

We live in a world full of contradictions; we operate in systems—economic, social, political, and moral (ESPM)—that are dominated by delusions. These delusions hide slow-motion catastrophes that will define humanity’s future, if not immediately perceived and quickly responded to. Few humans notice the looming crises hidden behind collective illusions of normality. Many are completely unaware that even the wealthier industrial-capitalist world faces these crises. Facts, information, and Reality¹⁶ argue that looming catastrophes are real and present dangers.

This story illuminates the delusions we operate with and function under, while suggesting individual and collective responses. This is a tale, a true narrative, but it is a strange and curious one. Its facts are critically important to each of us but are never found in common conversation. **The truth behind the delusions will determine our future and our futures, but the truth is missing in planning, and distorted or omitted in policy. It is the most important story of our time, but it is not included in what media, social media, or journalism presents. It is the most important story not understood in all of history.** Surely, it is time to tell the story; perhaps it is time for it to be heard.

Providing Context

Underlying the delusions that cover Reality, **two interconnected and catastrophic crises relentlessly expand and grow more powerful daily.** The world argues that it is on-the-way to resolving one crisis; the other is being almost completely ignored. The first crisis is our actions that are destabilizing our climate system—an acute crisis. The second, although related, is the relentless over-extraction, over-production, over-consumption, and excessive-poisonous waste stream that characterizes our economic, social, and political systems in the developed world.

Both crises represent “overshoot.”¹⁷ One is the waste overshoot of burnt carbon tossed into the air as if it were an open sewer. Breaking the climate, or climate chaos is the path we are on in the first case. The second crisis is one of overshoot related to ecological resources. The pathway for the second crisis set means “collapse,” and specifically it means death and suffering for innumerable millions of us. Both crises predict that humanity will face catastrophes; the questions are “extent” and “degree.”

The story will be told from the “US perspective,” because the United States is the central and most important world actor in two ways. First, the US has been the prime perpetrator of these overshoot crises. Second, the US has the resources and power to be the first and best responder. Moreover, if the US fails to respond positively, there will be no future that any of us would want to live in. Therefore,

¹⁶ Reality, in this essay (capitalized), means the state of things as they actually exist, as opposed to an idealistic or notional idea of them. Reality is verifiable and confirmable; it exists outside of any belief systems or worldviews. Reality exists whether you believe in it or not.

¹⁷ When a population exceeds the environment's carrying capacity, that population is in overshoot. Global overshoot occurs when humanity's demand on nature exceeds the biosphere's supply, or regenerative capacity. Such overshoot leads to a depletion of Earth's life supporting natural capital and a buildup of waste. At the global level, ecological deficit and overshoot are the same since there is no net-import of resources to the planet. Local overshoot occurs when a local ecosystem is exploited more rapidly than it can renew itself.

concerned individuals and groups in the US have critical roles to play. This story is told to galvanize them.

In fact, this story will explain that if the USA cannot be brought out of its dance with delusions then the catastrophes may well end humankind's experiments with progress and with civilization.

Of course, questions arise, such as: "What does an individual who understands these crises and is compelled to act actually do?" Another is: "With the power to respond largely in the hands of vast corporate wealth and a captive political system, how can anyone make any difference in this overwhelming situation?" These two questions will be addressed and active responses proposed.

The two crisis areas are massive, complex, and multifaceted. This essay examines them from an earth system science perspective, i.e., the interrelationship between the Earth's important "spheres"—like the biosphere, atmosphere, and geosphere.¹⁸ While the complexity of the situations can be somewhat difficult to grasp, there is good news related to understanding the extent and degree of the attendant problems.

First, the concepts related to greenhouse gas science¹⁹ are simple enough that a middle-school student can readily understand them. The more oxidized carbon we all dump into the air, the more heat the carbon will reflect back to the Earth's surface. It is a simple blanket concept: the more carbon, the thicker the heat blanket. As it is, the natural carbon in the air, measured in parts-per-million, keeps the planet livable. Without any greenhouse gases, Earth's surface would average about 0°F/-18°C (that is, 59°F colder) and could not support Life.²⁰



Jean Arnold

Second, the concepts and corresponding data related to how much resources humanity takes from the Earth in order to support its lifestyles—its extraction-production-consumption-waste economies—are relatively easy to measure and explain. **A gold standard summarizes this data by nation: the Ecological Footprint Analysis.²¹ It is used in this story to elucidate the challenges related to getting into balance, rather than exhausting Earth's Life-Support Systems.²²**

¹⁸ For more about Earth system science, see Glossary and Wikipedia "Earth system science," en.wikipedia.org/wiki/Earth_system_science.

¹⁹ Greenhouse gases are the gases that absorb the Sun's energy and trap heat in Earth's atmosphere. For more, see: Wikipedia, "Greenhouse effect," en.wikipedia.org/wiki/Greenhouse_effect.

²⁰ Energy Education, "Earth Temperature without GHGs," energyeducation.ca/encyclopedia/Earth_Temperature_without_GHGs.

²¹ The ecological footprint measures human impact on Earth's ecosystem, i.e., the quantity of nature it takes to support the human economy. For more, see Part 6, the Glossary, and Wikipedia, "Ecological footprint," en.wikipedia.org/wiki/Ecological_footprint.

²² The distinction between living world and Life-Support Systems is this: the living world is that which is alive, while the Life-Support Systems are that which support Life, for example: water, land, air, and a livable climate. For more, see Glossary.

Day-to-day life for Americans does not consider, reflect, or explain these crises, their real “scope, scale, and urgency,”²³ nor the acute nature of the climate crisis. A natural question therefore is: “How can it be that the wealthiest nation on Earth is not discussing questions that severely threaten both it and all of humanity?”

How can it be that the wealthiest nation on Earth is not discussing questions that severely threaten both it and all of humanity?

Delusion is the term for this neglect. Complete contradiction is therefore embodied in our lives and lifestyles. This story will cover many aspects of this situation and provide options for action.

The 20th century, in particular, suggests ways that humankind can confront these two slow-motion catastrophes. These suggestions derive from the numerous times that social movements were considered “impractical,” yet transformed society.²⁴ Moreover, political scientist Erica Chenoweth’s²⁵ research shows that successful movements only require 3.5% of active grassroots support from the population.²⁶

The challenge and the crises must first be accurately and viscerally perceived and accurately diagnosed. That is where we will begin. First, we must be able to see the delusions and contradictions.

²³ In this context, scope means the extent or range of an operation. Here, scale refers to the ability to ramp up operations to the level or size necessary for the situation. Urgency points to the need for immediate action. Used together in this way—scope, scale, and urgency point to a comprehensive understanding of all the dimensions of what is needed to confront these crises.

²⁴ Mark Engler and Paul Engler, “Three Times When ‘Impractical’ Movements Led to Real Change,” *The Nation*, March 7, 2016, www.thenation.com/article/three-times-when-impractical-movements-led-to-real-change/.

²⁵ Wikipedia, “Erica Chenoweth,” en.wikipedia.org/wiki/Erica_Chenoweth.

²⁶ Erica Chenoweth, “My Talk at TEDxBoulder: Civil Resistance and the 3.5% Rule,” *Rational Insurgent*, November 4, 2013, rationalinsurgent.com/2013/11/04/my-talk-at-tedx-boulder-civil-resistance-and-the-3-5-rule/.

Part One

The Tinkerbell-Effect and Breaking the Climate

The story about our collective Delusions and Contradictions picks up speed with a stunning revelation!

It goes like this: With the UN 2015 Paris Climate Agreement, all of the world's leadership and nations have promised to hold-the-line on warming the planet and to stabilize our climate system at no more than 2° Celsius (3.6° Fahrenheit) above pre-industrial temperatures.²⁷ Yet, the way they have chosen to do this is to blast past that 2°C heat limit with hundreds of billions of tons of excess pollution, and then later to magically suck the polluting CO2 that causes a cooked and broken climate—out of the air. If you do not know this (perhaps because the world leaders are hiding behind what might be called the “Tinkerbell-Effect”) then you have not yet heard how the world's leadership plans to actually implement this magical technology.

Wow! How wonderful it is that we can all continue our fossil fuel world with minor changes and enjoy our cars, planes, and consumption now—and then suck the poisonous pollution from our air sometime (far) down the road! Repeatedly, leaders have said that they will stabilize our climate, yet we can still have our fossil fuel-driven world (about 80% of world energy comes from oil, coal, and methane),²⁸ and “oh so slowly” change toward clean energy. But, no hurry!

How can this be?

Reality Intrudes

Many would say that the Trumps of the world are “out-to-lunch” on the climate issue, what about the rest of the world's political leadership?

Perhaps the most poignant delusion and one that impacts all of humankind is what might be called the Tinkerbell-Effect (TE).²⁹ Hiding behind this delusion means that the world will slide past the climate stabilization boundaries and do what it promised it would **not** do—that is, the world will be responsible for breaking the climate system. And it is because most of us, particularly here in the US where the Tinkerbell-Effect is most pandemic, have been fooling ourselves.

The climate movement³⁰ emphasizes that fossil fuel interests have obscured facts and science while filling the political system with money to block the Climate Agreement. But, keeping a climate system that can support civilization and a healthy future for the next generations (of both humans and

²⁷ The UN Paris Climate Agreement deals with greenhouse gas emissions mitigation, adaptation, and finance. All nations have signed on—the exception is the United States, as President Trump pulled the US out of the agreement in June 2016. For more about the agreement, see Glossary and Wikipedia, “Paris Agreement,” en.wikipedia.org/wiki/Paris_Agreement.

²⁸ US Energy Information Administration, “Fossil fuels have made up at least 80% of U.S. fuel mix since 1900,” www.eia.gov/todayinenergy/detail.php?id=21912, and The World Bank, “Fossil fuel energy consumption (% of total),” data.worldbank.org/indicator/EG.USE.COMM.FO.ZS.

²⁹ Wikipedia, “Tinkerbell effect,” en.wikipedia.org/wiki/Tinkerbell_effect.

³⁰ Wikipedia, “Climate movement,” en.wikipedia.org/wiki/Climate_movement.

animals) requires that here in the US and across the world, those working to stabilize the climate must free themselves from a major roadblock to a stabilized climate—and that is the Tinkerbell-Effect. All of the world’s nations, except the US, have promised to stabilize the climate at no more than a 2°C increase compared to the pre-industrial temperatures. **However, the actual terms of the Agreement—which allow a decades-long emissions phase-out—mean that all of these nations and their UN players are captives of that Tinkerbell-Effect.**



So, what is the Tinkerbell-Effect and why has it taken over those working to stabilize the climate system? People demonstrate the effect when they operate as if something is real, because they enthusiastically want to believe what is being discussed or suggested is actually real. Whether or not there is any factual- or reality-based corroboration or confirmation for the enthusiastic belief, does not affect the TE. It is the measure of wanting or needing to believe, despite any confirmation in Reality, which characterizes the TE.

The TE can be readily illustrated in real life. Audiences enact the Tinkerbell Effect in every live dramatic production of *Peter Pan*, reviving the dying Tinkerbell when Peter Pan asks them to clap if they believe in fairies. A 90-second video³¹ demonstrates the TE.

The TE describes things that are believed to exist **only** because people believe in them. Once Tinkerbell is revived, she then uses her powerful pixie dust so that the Pirate Ship can fly back to London. Because the audience enthusiastically **believes** in her.

That is the Tinkerbell Effect: Unbelievable things happen because entire audiences believe in the impossible. Then, everyone goes home happy because of the agreed-upon delusion. The delusion is beautiful (see Jolly Roger flying, right).



The Pirate Ship, the Jolly Roger flying because of Tinkerbell’s pixie dust.

Images: *Pirate Fairy Movie*, Walt Disney Studios, 2014.

Tinkerbell (above left): *Peter Pan*, Walt Disney Company, 1953.

³¹ katebaruthathesis, “Clap If You Believe,” YouTube, November 28, 2009, www.youtube.com/watch?v=A6IKaLF4Fgc.

Wishful Thinking

The Paris Accord is a classic case of the world falling victim to the TE.

The world agreed to stabilize the climate system at a 2°C heat limit. Everyone went home after Paris happy even though the plan to achieve the stabilization rests on Negative Emissions Technologies (NETs)—magical technologies that are not even mentioned in the Agreement! So, all the players in the IPCC³² dramatic production of the 2015 Agreement went home believing the world could blast through the 2°C heat limit, go far past the stabilization agreed to, and then later suck massive amounts of carbon dioxide (CO₂) from the air—for decades and decades. Then, when the captured carbon is “in-hand” it is to be buried somewhere and somehow, so that the 2°C heat ceiling could be regained. This theoretical Negative Emissions Technology is called BECCS (Bio-Energy-Carbon-Capture-and-Storage). The key players in Paris, without anything but a vague idea, assumed that the world would somehow get this core premise of the Agreement to work sometime in the near future.

Now, it would be nice if the world had a working example of this mysterious and magical technology, but it is only a concept on a drawing board. The world has seen other technological concepts put forward before, such as fusion energy that was supposed to be available decades ago, but it is still a concept with no operating model.

Besides an operating model (a working example to demonstrate), the technology would need to operate at massive scale to stabilize climate. Of course, there is no working model for operating at scale, either. But, this is the technique that the world is betting the climate system on. It’s required because the non-binding national pledges in place actually allow the world to burn 1,000,000,000,000,000 tonnes³³ more than the 2°C heat ceiling could handle. There are two overwhelming problems with the technique and the bet. First, is the technique itself.

What is BECCS?

The explanation of BECCS that the Association for the Tree of Life (ATL) likes best is the one supplied by Kevin Anderson, world-renowned climate scientist and engineer.³⁴ Kevin had agreed in 2016 to participate in a Climate Summit conference here in the US that would have described what BECCS means to the Paris Agreement. Because of Donald Trump’s election as US President; that planned Climate Summit did not occur.³⁵

Today, Kevin holds the Zennström Visiting Professorship³⁶ at Uppsala University and is chair of Energy and Climate Change at the School of Mechanical, Aerospace and Civil Engineering (MACE) at the University of Manchester. He was formerly Director of the Tyndall Centre for Climate Change Research.³⁷

³² The Intergovernmental Panel on Climate Change is a scientific and intergovernmental body under the auspices of the United Nations. For more, see Glossary and Wikipedia, “Intergovernmental Panel on Climate Change,” en.wikipedia.org/wiki/Intergovernmental_Panel_on_Climate_Change.

³³ A tonne (also known as metric ton) is a unit of mass equal to 1000 kilograms, equal to approximately 2204.6 pounds.

³⁴ Wikipedia, “Kevin Anderson (scientist),” [en.wikipedia.org/wiki/Kevin_Anderson_\(scientist\)](https://en.wikipedia.org/wiki/Kevin_Anderson_(scientist)).

³⁵ The US political system is dominated by the only leader and political party in the world who believe global warming is a hoax.

³⁶ Climate Change Leadership, csduppsala.se/ccleadership/.

³⁷ Tyndall Centre for Climate Change Research, www.tyndall.ac.uk/.

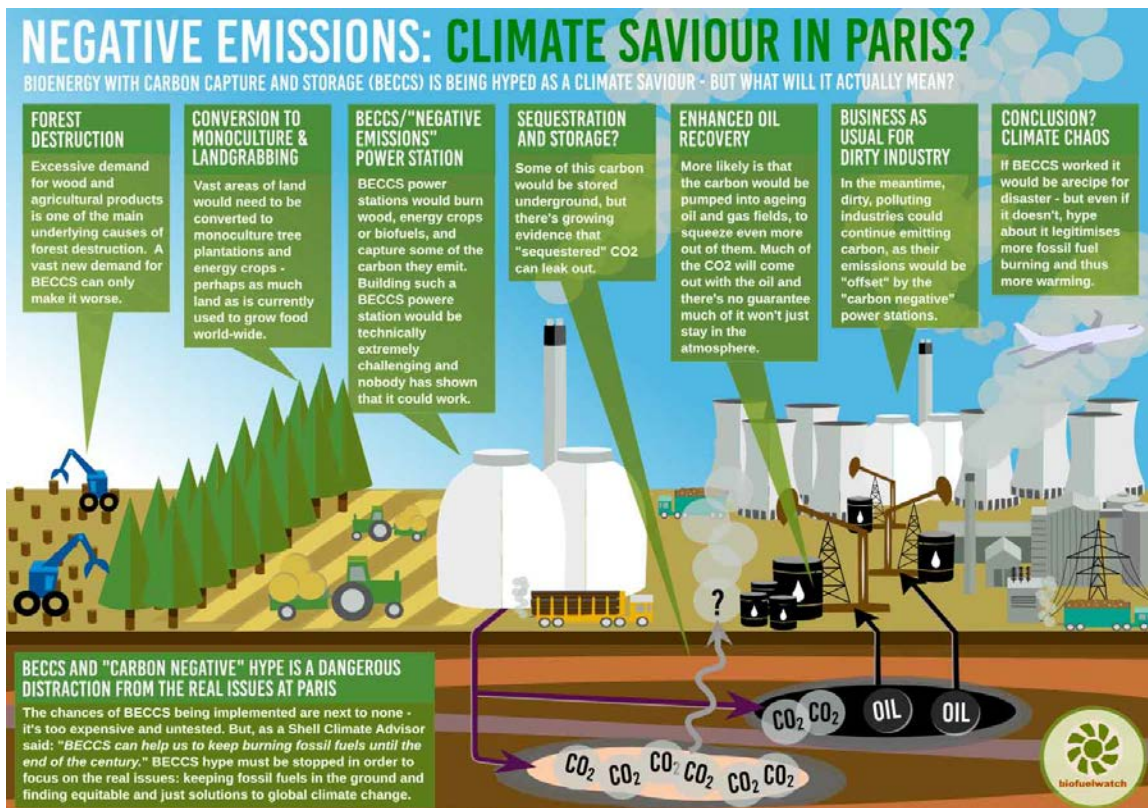
ATL believes Anderson provides the best analysis on the NETs. Two short articles, two pages each, published by Kevin explain the BECCS assumptions and beliefs built into the Paris Agreement.

The first is: “The hidden agenda: how veiled techno-utopias shore up the Paris Agreement,”³⁸ in which Kevin explains BECCS:

So what exactly does BECCS entail? Apportioning huge swathes of the planet’s landmass to the growing of bioenergy crops (from trees to tall grasses)—which, as they grow, absorb carbon dioxide through photosynthesis. Periodically these crops are harvested; processed for worldwide travel; shipped all around the globe and finally combusted in thermal power stations. The carbon dioxide is then stripped from the waste gases; compressed (almost to a liquid); pumped through large pipes over potentially very long distances; and finally stored deep underground in various geological formations (from exhausted oil and gas reservoirs through to saline aquifers) for a millennium or so.

The unquestioned reliance on negative emission technologies to deliver on the Paris goals is the greatest threat to the Agreement.

Biofuelwatch provides an infographic on the insanity of the proposed process:



³⁸ Kevin Anderson, “The hidden agenda: how veiled techno-utopias shore up the Paris Agreement,” pre-edited for Nature’s World View, December 2015, kevinanderson.info/blog/wp-content/uploads/2016/01/Paris-Summary-2015.pdf.

Box 1: Biofuelwatch's Analysis of BECCS

Policy makers are being misled about the 'potential' for using bioenergy to scrub CO₂ from the atmosphere—and thus into believing that we can continue to burn fossil fuels, continue to achieve economic growth and yet still avoid the worst impacts of climate change. [p. 52]

...Claims about BECCS—like other 'negative emissions technologies' are based on pseudo-science, coupled with corporate lobbying. Even if BECCS may never become a reality, the claims about it are highly dangerous: Whether before or after the Climate Conference in Paris, we can ill afford false assurances about ways of removing carbon from the atmosphere... [p. 52]

The only proven ways of removing carbon from the atmosphere involve working with nature, i.e. agro-ecology and the regeneration of natural ecosystems. [p. 4]

Source: Biofuelwatch, "Last-ditch climate option, or wishful thinking?"³⁹

Summarizing the credible BECCS analyses in simple terms: **BECCS not only has never been demonstrated to be viable either technologically or economically, it is a combination of delusion, wishful thinking, and absolutely needing to believe that BECCS will save us.**

Importantly, that belief comes into play because the world has refused the "non-NETs" option, i.e., a rapid reduction in carbon emissions. Therefore, in November 2017 when the world was meeting in Bonn to implement the particulars of the Paris Agreement, several researchers explained that NETs will not work—all the more when considering issues of equity. From their report, "What if negative emission technologies fail at scale?":

... the on-going failure of any 'big emitter' to begin a comprehensive and rapid transition of its energy systems, suggests that constraining emissions to a carbon budget with a greater than 66% chance of avoiding 2°C, if applying even weak equity criteria, is now infeasible.⁴⁰

It may now be apparent that the policy makers and political leaders who have been tasked with implementing climate stabilization rules and regulations, i.e., emission reduction policies, that are necessary to limit global warming's catastrophic effects have been misled. Perhaps they have allowed themselves to be misled because they did not see the ability to continue in office and simultaneously break free of the TE?

Climate activists worldwide have been hoodwinked, swindled, and duped into believing the criteria in the Paris Agreement. As a result, those who are trying to help stabilize the climate have been fooling themselves, working on the wrong assumptions (for example, mild emissions reductions starting too late to hold to the 2°C ceiling).

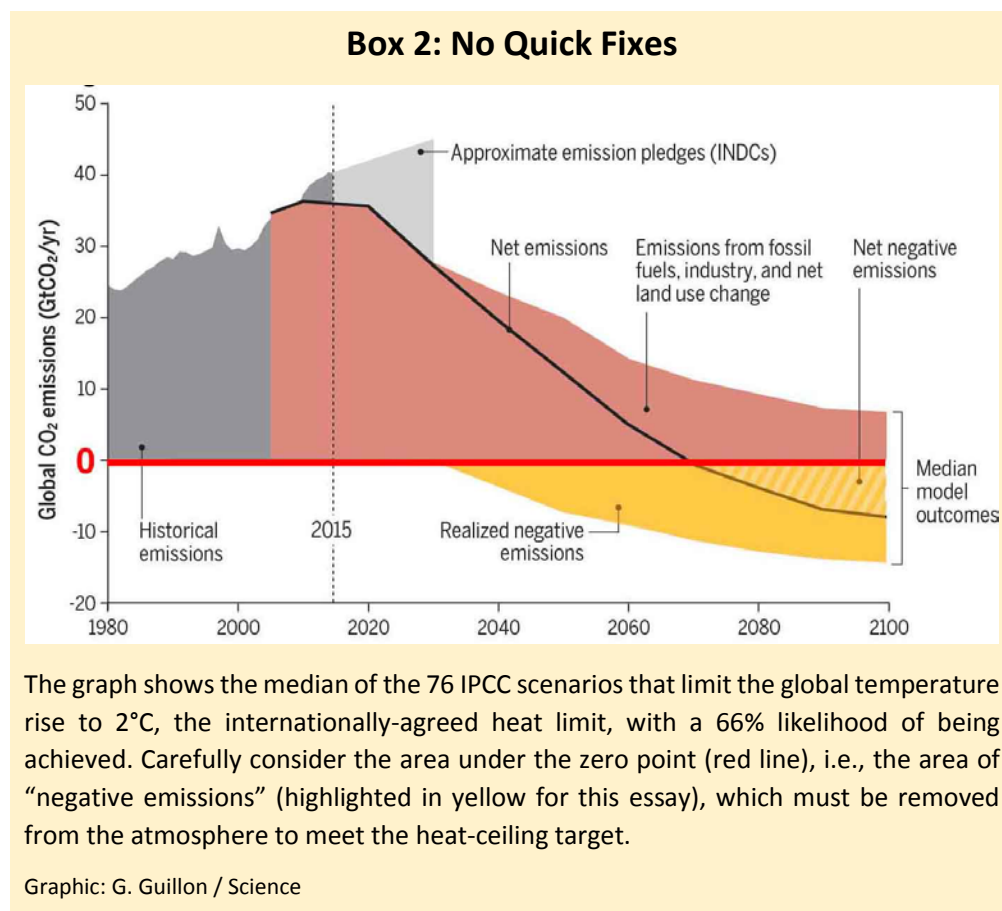
³⁹ Almuth Ernsting and Oliver Munnion, "Last-ditch climate option, or wishful thinking?," BiofuelWatch, November 2015, www.biofuelwatch.org.uk/wp-content/uploads/BECCS-report-web.pdf.

⁴⁰ Alice Larkin, et al, "What if negative emission technologies fail at scale? Implications of the Paris Agreement for big emitting nations," Conclusion, p. 18, kevinanderson.info/blog/wp-content/uploads/2017/08/pdf-Pre-edit-of-What-if-NETs-fail-at-scale.pdf.

Even if NETs could work, the existing national intentions for mitigation, i.e., reducing carbon fuel burning would only get the world to 3-4°C, far into catastrophic warming. Baking ourselves and our Life-Support Systems in the process.

The Bet: From Techno-Utopia to Trouble with NETs

The second piece from Kevin Anderson, “The Trouble with Negative Emissions,”⁴¹ explains “the bet,” that is, the amazing amount of carbon that will be needed to be sucked out of the atmosphere, supposedly by the Negative Emissions Technologies, in order to stabilize the climate at 2°C warming, after decades of foolishly prolonged carbon burning, saying, “In many [mitigation] scenarios, the level of negative emissions is comparable in size with the remaining carbon budget.” The graph from the article illustrates that massive carbon sucking needed.



As the Box 2 above shows, from about year 2030 to 2100, it would be necessary for the world to somehow miraculously suck out of the air and bury forever some 1,000 gigatons of CO₂ to meet the heat limit criteria.

⁴¹ Kevin Anderson and Glen Peters, “The trouble with negative emissions,” *Geoengineering Monitor*, October 14, 2016, www.geoengineeringmonitor.org/2016/10/the-trouble-with-negative-emissions/

Understand what 1,000 gigatons of CO₂ means in real world terms. One gigaton of weight is 1,000,000,000 X 2,204.6 pounds. This is 2,204,600,000,000 pounds, or over two trillion pounds. Converting to elephants, it is over 200,000,000 African elephants in weight. Now, there are not nearly that many elephants alive, so one must imagine taking more elephants of CO₂ from the atmosphere than actually exist.

That means in order to meet the reductions so that the world does not blast past 2°C, it would be necessary to capture and bury more than 3 million “elephants of CO₂” each and every year from 2030 to 2100—about ten times the weight of all elephants alive today. All that weight would need to be securely buried every year in the last two-thirds of this century. The burial would need to continue well beyond the entire 21st century, but those calculations depend on the world successfully burying the amounts listed here first.

Painful but Obvious Conclusion

The two parts of this story, one a delusion, and the other an impossible but necessary accomplishment, comprise the two sides of the Tinkerbell-Effect. Like one coin with two sides. On one side are the necessary beliefs: (a) in sucking-carbon-from-the-air-technologies that do not exist in reality but must exist or catastrophe reigns; and (b) that this fantasy technology can remove the weight of ~ infinite elephants from the air with the sucking technology. On the other side is the enthusiastic reliance upon these beliefs, so enthusiastic that the world’s nations actually plugged in to their models, plans, and pledges that both of these delusions would actually happen.

Note that at the end of the Paris Conference there was wild and sustained applause so that the conferees would really believe that the agreement does what it said would be done. Thus, the world, and those who are supposedly on the side of the Climate Movement and Climate Activists world-wide, fell for the TE.

Although much more could be added, the world-wide spell of the Tinkerbell-Effect is necessary to maintain the illusion that the Paris Agreement could actually stabilize the climate after far too much carbon fuels are used. But even if the wished-for miracle of NETs could work, other delusions rear their heads:

- The intentions that nations have offered as part of the Agreement for reducing fossil fuels use would result in climate warming of at least 3-4°C, not the agreed 2°C ceiling. Moreover, few nations are even meeting their own targets (see Box 3: Key Points from the UN 2017 Emissions Gap Report).
- Catastrophic self-reinforcing climate tipping points⁴² and disastrous runaway climate warming increase in likelihood above 2°C temperature increases. And blasting past 2°C now seems inevitable (see Box 6: Global Warming Tipping Points).

⁴² Environmental Defense Fund, “Everything you need to know about climate tipping points,” November 1, 2017, blogs.edf.org/climate411/2017/11/01/everything-you-need-to-know-about-climate-tipping-points/.

- The UN itself, in its 2017 Emissions Gap Report explains several more delusions (see Box 3: Key Points from the UN 2017 Emissions Gap Report).

We do have a choice, but do we perceive its necessity?

We can put in place reality-based mechanisms to dramatically reduce our fossil fuel developments and uses, to provide some small chance to hold the line on temperature increases, so that some parts of humanity can survive. But, it seems all but completely delusional to believe we won't meet global disaster when it comes to climate warming. It seems to be only when, and not if. Unfortunately, the extent and degree of the disaster is being determined now, by every usage of fossil fuels—the CO2 increases in our air as a result.

To salvage any livable future, we must begin by radically reducing fossil fuels development and use—starting now, literally. Particularly in the US, because the US has been the main perpetrator of the looming catastrophe. Further, we must keep the vast majority of fossil fuel reserves in the ground. By these actions and more, we may avoid the worst consequences of what we all have said we would avoid, i.e., catastrophic climate chaos.

It's a stark choice. Either we continue the consummate Tinkerbell delusion or we radically alter the social, political, economic, and moral systems by which all of us in the US and the entire world operate. Of course, we know human history and how humans previously have responded, as illustrated below:



In this case, with these stark choices, can we together discuss the adult responsibilities necessary to continue the human experiment, or will we decide to hold fast to the TE delusion and all go off the cliff together?

Finally, who will be the heroes and heroines who explain that: “We do have a choice. We can grow up and leave the illusory Neverland behind.”

Interlude

Kevin Anderson followed the November 2017 COP23 meeting⁴³ in Bonn, Germany with a postscript to the Tinkerbell-Effect, “Personal reflections on the 23rd COP in Bonn-Fiji – Nov. 2017.” Here is an excerpt:

Certainly the modellers can turn the ‘NET’ dial still further to the right—reconciling their Wonderland with our Paris Commitments. But away from the Mad Hatter’s tea party holding to 2°C is now much more of a profound challenge than we appear able to accept. Whether the latest depressing data signals that humanity was only ever set to be a destructive aberration is still not clear. Indeed we may yet discover the moral fortitude to wrestle a decarbonised phoenix from the fossil-fuelled flames. **But delivering such a fundamental transformation demands we reject rhetoric, dishonesty and fear and embrace the challenges and opportunities posed by clear thinking, integrity and courage.**⁴⁴

⁴³ COP23 refers to the 23rd Annual Conference of the Parties to the 1992 United Nations Framework Convention on Climate Change. For more on COP, see Glossary.

⁴⁴ Kevin Anderson, “Personal reflections on the 23rd COP in Bonn-Fiji–Nov. 2017,” blog, November 2017, kevinanderson.info/blog/personal-reflections-on-the-23rd-cop-in-bonn-fiji-nov-2017/.

Box 3: Key Points from the UN 2017 Emissions Gap Report

Many delusions related to the world climate have been substantiated in the UN Environmental Programme's Emissions Gap Report 2017.⁴⁵

- Emissions worldwide are still increasing; **the current gap between nations' pledges⁴⁶ versus reductions necessary by 2030 to meet the 2°C heat ceiling⁴⁷ is 13.5 gigatons of CO₂e.**⁴⁸ To be on target, we now need to be emitting nearly 2 tonnes less (about 4300 pounds) for each human alive today! So, we are really headed to between 3-4°C. (Importantly, even to hold to 3-4°C, it is assumed that the massive BECCS program,⁴⁹ the Tinkerbell delusion will be implemented full stop!)
- **The “alarmingly high” gap is growing and we are falling further behind.**⁵⁰ And today's existing pledges cover only one-third of what is needed.⁵¹ The report warns that if we cannot get our act together by 2020 with higher pledges, it will be impossible to close the 2030 gap.⁵²
- In spite of this, less than a handful of the G20 nations are on track to achieve their targeted reductions.⁵³ Policies needed to reduce emissions enough are largely absent.⁵⁴
- **The report questions whether BECCS can ever be scalable for a number of reasons, concluding: “Mitigation action in other sectors should therefore not be delayed.”**⁵⁵
- The Report discusses the sub-national and non-state actions, like those being led by Michael Bloomberg and California Governor Jerry Brown. While these measures are good and necessary, altogether **non-state actions will make a trivial difference of “a few GtCO₂e⁵⁶ over and above the NDCs.”**⁵⁷ So, while US stateside happy talk from Brown and Bloomberg insinuate that Trump can be neutralized and that we can meet the US's pledges without the US federal government involvement in the UN IPCC process—the actual data does not begin to match the wishful thinking.
- A Green Climate Fund⁵⁸ provided by wealthy nations will provide support to developing nations so that they can leapfrog beyond fossil fuel development. However, only a fraction of its goal of \$100 Billion by 2020 is in the fund. The Report says in a dramatic understatement that the wealthier part of the world will have to do what it has never done before: **“...it will be important to ensure that international technical and financial support is available to facilitate action in developing countries.”**⁵⁹

⁴⁵ UN Environment Programme, “The Emissions Gap Report 2017: A UN Environment Synthesis Report,” November 2017, wedocs.unep.org/bitstream/handle/20.500.11822/22070/EGR_2017.pdf.

⁴⁶ Nations' Nationally Determined Contributions, or NDCs. For more, see Glossary.

⁴⁷ For a 66% probability of 2°C.

⁴⁸ Page xvii. For a definition of CO₂e (carbon dioxide equivalent), see Glossary.

⁴⁹ Bioenergy with Carbon Capture and Storage—a form of Negative Emissions Technology (NET).

⁵⁰ Page xvi.

⁵¹ Page xiv.

⁵² Page xv.

⁵³ Brazil, China, India, and Russia are roughly on track to achieve their 2030 targets with current policies.

⁵⁴ Page xviii.

⁵⁵ Page xxiii, and Chapter 7.

⁵⁶ GtCO₂e is one gigaton of carbon dioxide equivalent, one billion metric tonnes.

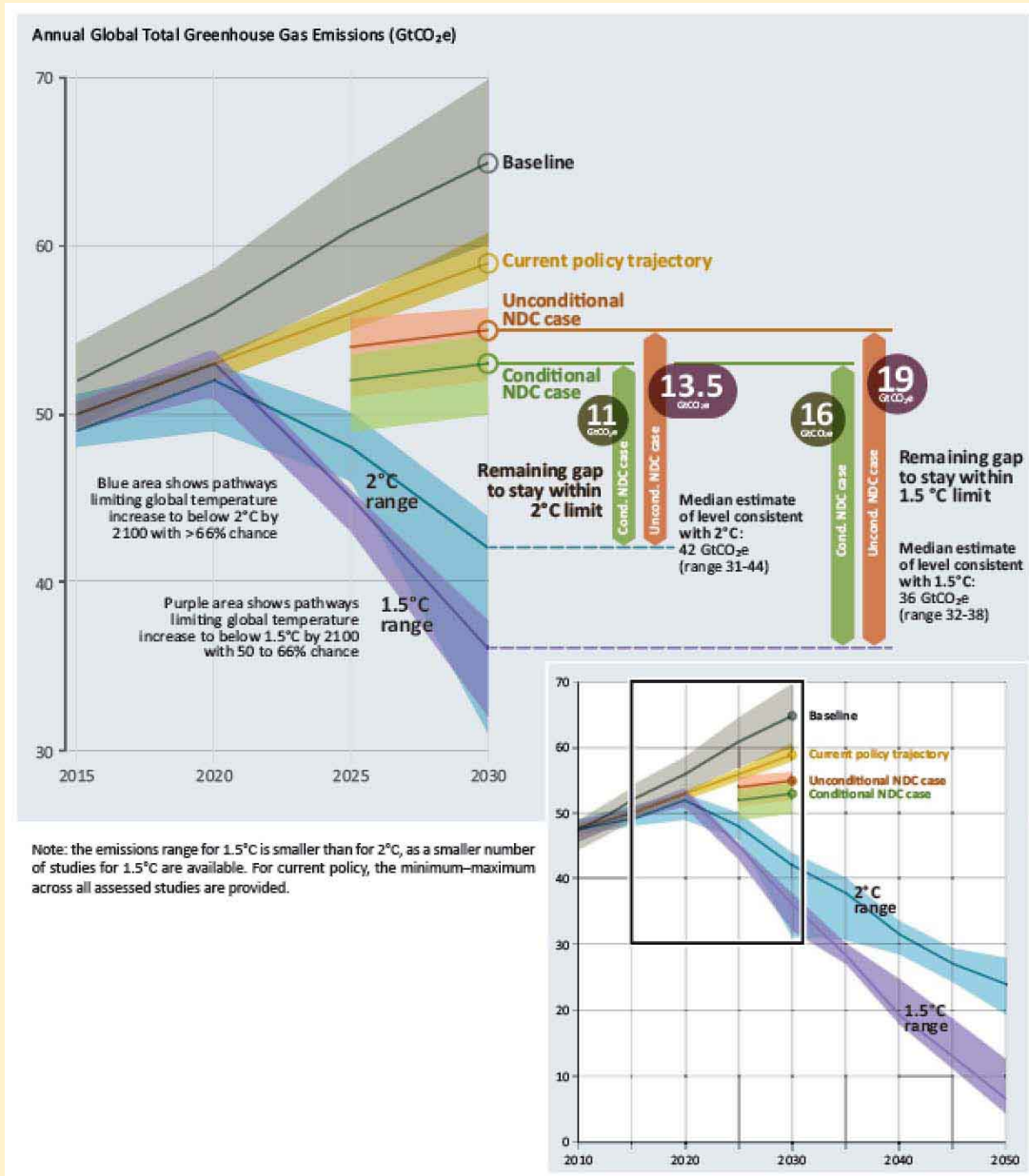
⁵⁷ Page xviii.

⁵⁸ Wikipedia, “Green Climate Fund,” en.wikipedia.org/wiki/Green_Climate_Fund.

⁵⁹ Page xix.

- **To close the gap, we must phase out existing coal (responsible for 46% of global fossil fuel emissions),⁶⁰ and build no new coal fire plants.** Governments need to remove coal subsidies, price carbon,⁶¹ and to implement policies for transitioning. Coal’s annual damage to society and the climate amounts to an implicit global subsidy of \$3.1 trillion⁶² (\$16 billion per nation). Despite all this, coal emissions are still rising. The report notes that developing countries “will likely need support from the international community.”⁶³

Image: UNEP



⁶⁰ Page xxi.

⁶¹ Page 41.

⁶² Page 42.

⁶³ Page 47.

Part Two

Combating Delusions

“Speaking the Truth in times of universal deceit is a revolutionary act.”

– George Orwell

Part 1 of this story explained the massive delusion the world is operating under, with the wrong playbook related to the climate crisis. We are planning to blast past the agreed-upon 2°C heat ceiling, and then to magically suck unbelievable amounts of carbon dioxide from our air to meet the Paris Agreement’s goal down the road, using Negative Emissions Technologies.

The net result is that we are likely in for 3-4° C, with tipping points not considered by the UN IPCC Report process—tipping points that intensify beyond that heat level and accelerate our Earth’s uninhabitability. And actually, the IPCC’s exclusion of certain tipping points only adds to the delusions!⁶⁴ Therefore, it is time to consider “what to do,” as climate catastrophe is not a matter of “if,” but much more likely a matter of “when.” Consequences cannot be escaped by most of us alive now—it’s simply a matter of extent and degree.

Additionally, **climate catastrophe is not the only catastrophe on the menu.** Part 2 outlines the other looming planetary crises-set; it begins to explore what can be done; which, in turn reveals the monster obscuring our view of Reality.

Reality Bites Twice

Unfortunately, a related set of crises—over-determined like the climate crisis—are emerging. In November 2017, 15,000 of our world’s scientists, from 184 nations warned us again⁶⁵ that we are on a pathway to perdition, a trajectory for failure. “World Scientists’ Warning to Humanity: A Second Notice”⁶⁶ comes twenty-five years after the first warning, and with ten times as many scientists now in the chorus. The entire world has been warned again about “the worsening problems of freshwater availability, marine fishery collapses, ocean dead zones, forest loss, biodiversity destruction, climate change, and continued human population growth.” Only one area is not severely worse in the last twenty-five years, the ozone hole: it’s improving, albeit very slowly.⁶⁷

⁶⁴ For more on problems with the IPCC reports, see: Job One For Humanity, “35 Years of Global Warming Reduction Failure,” www.joboneforhumanity.org/why_35_years_of_reduction_failure.

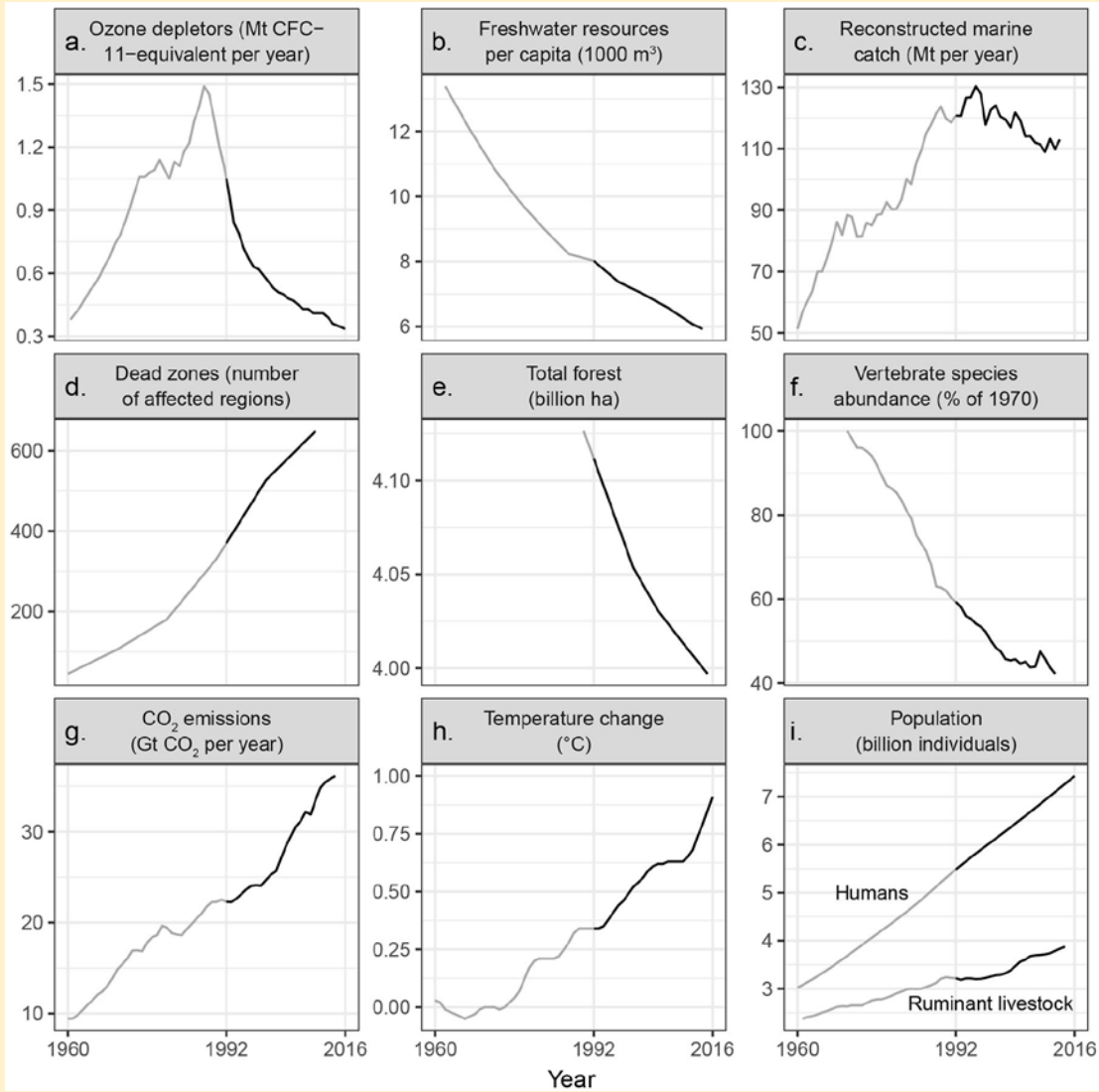
⁶⁵ Joe Romm, “15,000 scientists warn it will soon be too late to avoid climate catastrophe,” ThinkProgress, November 14, 2017, thinkprogress.org/15000-scientists-warn-humanity-479e950ff929/.

⁶⁶ William J. Ripple, et. al., “World Scientists’ Warning to Humanity: A Second Notice,” *Bioscience*, Volume 67, Issue 12, December 1, 2017, pp. 1026–1028, doi.org/10.1093/biosci/bix125.

⁶⁷ Fred Pearce, “Thirty Years After Montreal Pact, Solving the Ozone Problem Remains Elusive,” *Yale Environment 360*, August 14, 2017, e360.yale.edu/features/thirty-years-after-the-montreal-protocol-solving-the-ozone-problem-remains-elusive.

The charts from the latest scientific warning tells the bleak tale:

Box 4: World Scientists' Warning to Humanity: A Second Notice



Trends over time for environmental issues identified in the 1992 scientists' warning to humanity. The years before and after the 1992 scientists' warning are shown as gray and black lines, respectively. Note that all trends are worsening, with the exception of ozone depletors.

Charts: World Scientists' Warning to Humanity: A Second Notice

Similar bleak graphic tales can be told by consulting the "Great Acceleration."⁶⁸

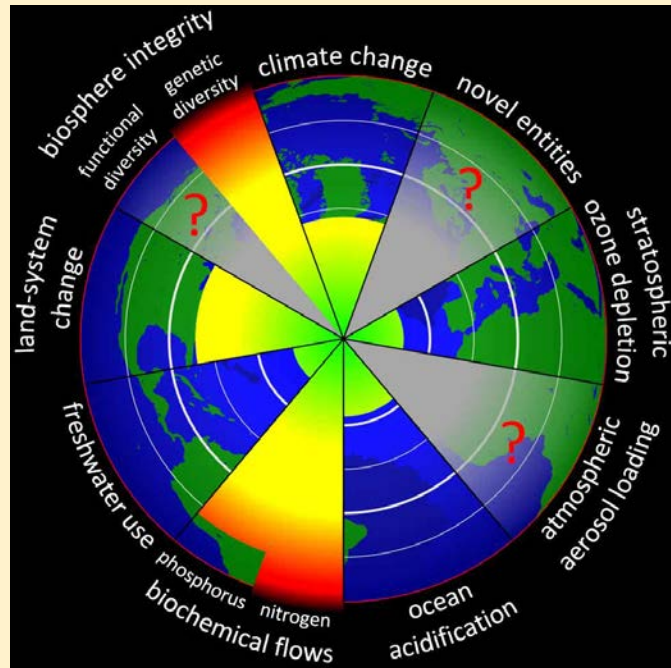
⁶⁸ International Geosphere-Biosphere Programme, "Great Acceleration," www.igbp.net/globalchange/greatacceleration.4.1b8ae20512db692f2a680001630.html. For more on the Great Acceleration, see Part 6 and the Glossary.

Simply put, the developed industrial world has produced ecological overshoot and has over-saturated several pollution sinks.⁶⁹ “Planetary Boundaries”⁷⁰ details boundaries crashed-through (see Box 5: Planetary Boundaries). During the last 20 years have we developed reliable and valid⁷¹ tools to measure and describe how and why our collective economic, social, political, and moral (ESPM) systems have pushed us to crash through these boundaries. Simultaneously, our ESPM systems have thrown massive monkey wrenches into the gears of our Earth systems, our Earth’s Life-Support Systems.

These graphics and the simple facts they express provide what constitutes the “second-bite” of Reality. So, the climate crisis is multiplied by the crises in ecological overuse and pollution saturation.

This delusion set that “we can continue to do what we are doing, grow the economy, and stick to the relentless assembly line of extraction-production-consumption-toss the waste” obscures the facts, the information, and the data related to Reality. Here too, the question is not “if” the house-of-cards will collapse, but “when,” and “how bad it will be.” Reality is guaranteed to bite-back. We are wrecking our Earth’s Life-Support Systems and crashing through boundaries that limit living organisms—even those as clever and intelligent as the human ones.

Box 5: Planetary Boundaries



Planetary Boundaries presents several Earth system processes—key thresholds humankind should not cross. Crossing boundaries risks abrupt and irreversible systemic change for the whole of Earth-Life. Humanity has already crossed four of the nine boundaries listed. See Glossary for more.

Image: Stockholm Resilience Center / Ninjatacoshell

⁶⁹ A pollution sink is a natural reservoir that absorbs human-made pollution as part of its normal cycle. See Glossary for more information. Also see: The Environmental Literacy Council, “Sources and Sinks,” enviroliteracy.org/air-climate-weather/climate/sources-sinks/.

⁷⁰ For more about Planetary Boundaries, see the Glossary and Stockholm Resilience Centre, “Planetary Boundaries,” www.stockholmresilience.org/research/planetary-boundaries/planetary-boundaries/about-the-research/the-nine-planetary-boundaries.html.

⁷¹ Reliability and validity are closely related. Reliability means consistency in results, while validity means accuracy of results. For more see: Understanding Assessment, “Reliability and Validity,” www.cal.org/flad/tutorial/reliability/3andvalidity.html.

Multiplying Delusions

This story exposes the delusions we operate under—in considerable parts of our ESPM systems—and that pervade our cultural world-view in the USA. **The concerned observer sees that the US believes we operate in a world with infinite resources to exploit, and with infinite waste sinks to use.** Therefore, we can continue to look to unconstrained economic growth and unlimited dumping of the resulting waste. All the while considering that these systems, representing the epitome of human Progress, can continue unabated into the distant future.

These delusions are pervasive and they have captured our collective society. An even more exaggerated delusion set was behind the election of President Trump. Bringing back the American Dream⁷² and American Greatness,⁷³ as Trump has promised, means accelerating the extraction-production-consumption-waste exploitations that brought us these crises.

The extensive delusions that control our cultural operating systems obscure the facts, Realities, and laws corresponding to biology and physics—laws that determine how the Earth “operates and responds,” (humans, too). These delusions hide the facts, even those that are indisputable, like the fact that we are biological organisms completely dependent on our Mother Earth for every aspect of our existence.⁷⁴

The consequences of these delusions need to be perceived *and* felt; an intellectual understanding will not do.

Later parts of this story will further illuminate additional delusions and contradictions that define modern life and obscure the Reality that actually determines both our collective fate and our collective future.

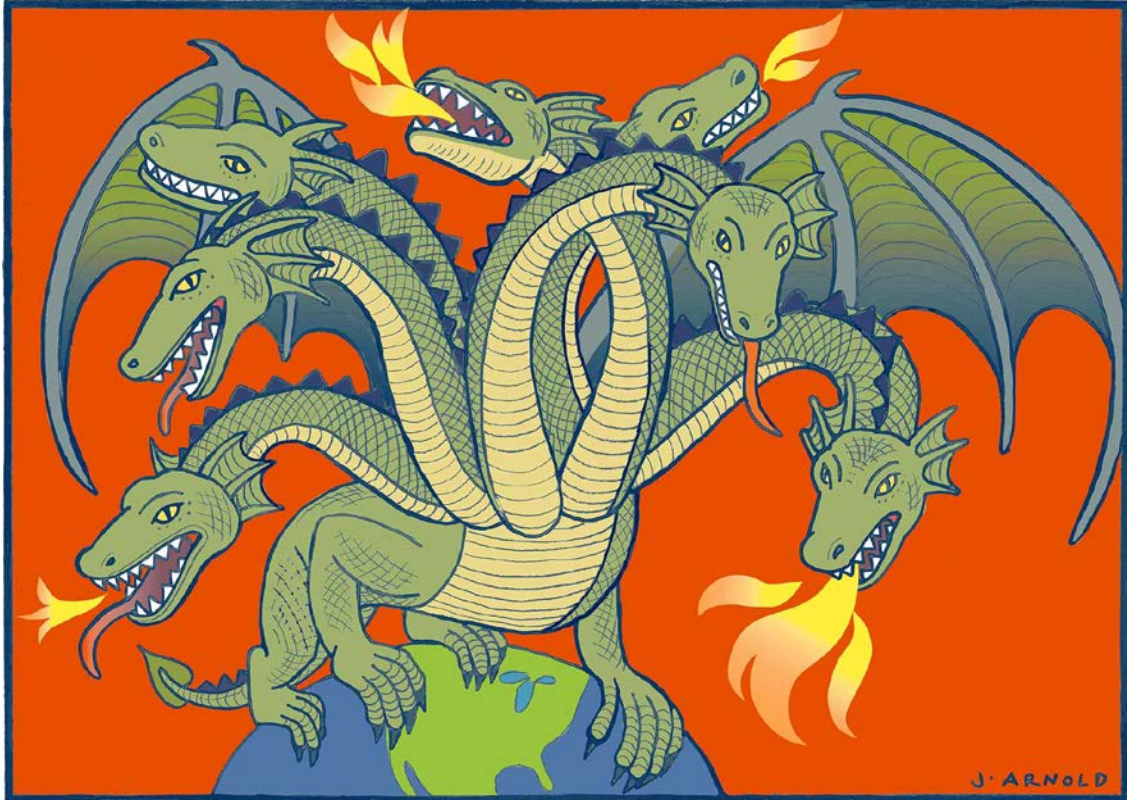
The consequences of these delusions need to be perceived *and* felt; an intellectual understanding will not do. There must be a visceral understanding so that the delusions can be seen, and then responded to. Beginning the elucidation, a pictorial representation of the delusions will initiate this process of exposure.

The following illustration represents the delusions that obscure Reality and separate most all of us from our vital connection to the Earth and her sustaining Life-Support Systems. Meet the Hydra-Headed Delusion Dragon:

⁷² Wikipedia, “American Dream,” en.wikipedia.org/wiki/American_Dream.

⁷³ From the American Greatness website: “... there’s little humans can do to interfere with planetary processes, most of which are beyond our ken. Never mind that we flatter ourselves if we think so. Never mind that to characterize carbon dioxide—which we exhale so that the Amazon rain forest and those West African moringa plants might inhale—as a dangerous “greenhouse gas” is profoundly anti-human,” Michael Walsh, “The Suicidal Narrative of the Modern Environmental Left,” November 16, 2017, amgreatness.com/2017/11/16/the-suicidal-narrative-of-the-modern-environmental-left/.

⁷⁴ It is obvious that a human fetus in the womb is completely dependent on its mother for all of its sustenance, and also its waste removal. This is no less true after a human is born: she is totally dependent on Mother Earth for all sustenance, and all waste removal from the human environs.



Jean Arnold

The Hydra illustrates the delusion system that has captured our world. These delusions are interconnected, like the Dragon's hydra-heads. Moreover, if we combat one delusion, others pop-up in its place. This story emphasizes that delusions are plentiful and pervasive—operating not only among climate denialists, but even among climate-ecology advocates and organizations.

Therefore, before discussing constructive responses, three more delusions operating on the advocacy side must be exploded. These must also become part of any national conversation on climate and energy:

Delusion 1. *We can simply replace fossil fuels with renewable energy and still have a world similar to the one we have now with abundance and modern consumption intact.*

Delusion 1 response: If humanity is to have any viable future, it will be based on the energy of the sun without fossil fuels, but that energy system cannot and will not support anything like the current world economic, consumption, and political systems. Just because the major US environmental organizations have maintained this delusion for the last 25 years, and some still do, that does not mean that it will be possible.

First, realize that solar and wind still comprise a miniscule portion of total energy both globally and in the US—we are not leaving fossil fuels anytime soon, and the energy agencies, like our EIA, (Energy Information Agency), and IEA (International Energy Agency) do not predict the US or the world will

leave fossil fuels at all. Additionally, it normally takes several decades to build new infrastructure for a different energy system.

Second, if anyone wants to really look at the possibility of a “Renewable Energy World,” and how far from it we are at this late point, even if we make drastic changes in consumption and efficiencies, see Richard Heinberg and David Fridley’s great book, “Our Renewable Future,” available for free.⁷⁵ Crucially, the book discusses six reasons why a renewable world will be fundamentally limited compared with a fossil fuel world: (1) intermittency, (2) the liquid fuels problem, (3) other uses of fossil fuels, (4) area density of energy collection activities, (5) location, and (6) energy quantity.⁷⁶ Also keep in mind that rapid deployment of solar and wind energy will be accomplished by using fossil fuels in their construction. Lots of fossil fuels.

So there is no scenario in which we can continue our consumptive ESPM systems we have now—certainly not with “green” or clean energy. Moreover, the fossil fuels required to construct the renewable world require dramatic cutbacks in consumption now. This is not even being considered or discussed.

Delusion 2. Technological breakthroughs will somehow save us.

Delusion 2 response: The world’s leading philanthropist, Bill Gates is certainly committed to helping humankind on many fronts. In his 2010 TED presentation, “Innovating to Zero,”⁷⁷ he has been calling for “energy miracles,” that is, cheap zero carbon energy to power the world, including poor nations: “So this is a ... very concrete wish that we invent this technology ... this thing that's half the cost with no CO2 gets invented—this is the [one] wish I would pick.”⁷⁸

Bill has continued calling for “energy miracles” ever since, yet there are no zero-carbon miracles on the horizon to save us.⁷⁹ He has personally invested over a billion dollars in advanced nuclear, Terra Power.⁸⁰ The project is still a decade or more from even being demonstrated, and decades more from deployment. That will be far too late. Gates is working to relieve poverty through the Gates Foundation,⁸¹ but he is fooling himself when it comes to energy miracles. Unfortunately, working on the symptoms of poverty without resolving the ravages of climate chaos is like working on fatal cancer by changing diet.

The bottom line: We must drastically reduce fossil fuels now, not waiting decades for a miracle energy cure—or we cook ourselves into oblivion.

⁷⁵ Richard Heinberg and David Fridley, “Our Renewable Future: Laying the Path for One Hundred Percent Clean Energy,” Post Carbon Institute and Island Press, Washington, DC, 2016, ourrenewablefuture.org/-the-book. The link provides the free book.

⁷⁶ See: “Introduction: Why a Renewable World Will Be Different,” pp. 7-9.

⁷⁷ Bill Gates, “Innovating to Zero,” TED Talk, February, 2010, www.ted.com/talks/bill_gates.

⁷⁸ See the transcript, minute 17:13: www.ted.com/talks/bill_gates/transcript.

⁷⁹ See blog post: Michael Mielke, “Bill Gates Is Betting Our Future on Miracles,” Association for the Tree of Life, November 12, 2015, www.tree-of-life.works/gates_miracles.

⁸⁰ Terra Power, terrapower.com/.

⁸¹ The Gates Foundation, www.gatesfoundation.org/.

Delusion 3. *We can work at the city and state levels with climate stabilizing measures that can make President Trump unimportant to the world stabilization goals, or even more than make up for his turning his back on the world Paris Climate Agreement.*

Delusion 3 response: This is a US delusion, shared by the Climate Movement and their philanthropies. Michael Bloomberg is getting cities to make climate pledges; Governor Jerry Brown is leading the pack on “states,” i.e., subregions of nations like California. Both are traveling the world gathering cities and regions into emissions-reducing promises. Jerry Brown is even planning a big Global Climate Action Summit in San Francisco, September 2018.⁸² The UN 2017 Emissions Gap Report does not have them helping more than one-seventh of the gap itself. Quoting from page 25 of the Report:

In line with previous Emissions Gap Reports, this report finds that subnational and non-state actions could possibly make a significant contribution to narrowing the gap (figure 3.4). The aggregate impact of the initiatives could be in the order of a few GtCO₂e in 2030 beyond the current NDCs, if the initiatives reach their stated goals and if these reductions do not displace actions elsewhere.⁸³

It is important to note that these total reductions, at best, are small because they do not have national policy leverage. No matter how loudly advocates scream about how they can overcome Trump.

Sad to say, to think that Brown and Bloomberg’s city-state initiatives can make up for Trump is part of the delusions system, by the UN’s own admission.

Thus, three more ugly Hydra-Heads are revealed. **Multiple delusions—even beyond Tinkerbell—are lulling many people into a false hope that “things are being handled” and are negating any sense of urgency about the need for immediate, dramatic reductions in fossil fuels and transformation of our ESPM systems.**

How Do We Begin to Respond?

So, the question now posed is: “How can we organize effective responses to the climate and ecology crises and the delusions that underpin them?” To begin with, individuals must first find support systems in order to delve into these crises. The challenges are overwhelming, and the existential situation is not one that can be solved or resolved without disaster and loss. The US is far too enveloped in delusions in order to recover fast enough to prevent disasters. Now, that does not mean that we can back-off from demanding fossil-fuel emissions reductions and living as simply as possible. But, conditions at the beginning of 2018 are not conducive to quickly eliminating fossil fuels from common use, nor does our economic system support radical simplicity.

⁸² Global Climate Action Summit, globalclimateactionsummit.org/.

⁸³ United Nations, “The Emissions Gap Report 2017,” wedocs.unep.org/bitstream/handle/20.500.11822/22070/EGR_2017.pdf?sequence=1&isAllowed=y.

First, we need to deal constructively with the information, facts and reality. It is not only the Republican Party that is in denial about the wrenching changes to come, but our entire “virtual reality” culture across the political spectrum. Grappling with the information will not be easy and support—emotional, psychological, spiritual, etc.—is necessary. **Encounter with the information will involve the death of former “world-views,”** many of which are bound up with ideas of continuous Progress and the availability of endless, abundant consumption.

It is not only the Republican Party that is in denial about the wrenching changes to come, but our entire “virtual reality” culture across the political spectrum.

Here Part 2 has concentrated on outlining numerous delusions that dominate our economic, social, political and moral systems, pictorially represented by the Hydra-Headed Delusion Dragon. The labor, the struggles, the painstaking efforts required to slay the Dragon and reconnect with Reality as primary process, while we move into balanced relationship with the Earth and her Life-Support Systems is the task before us all.

Join in this battle-royal; it is the adventure of our time. It is the major challenge for the best of us, and we will need lots of help from those who do not yet know about the bases of these challenges. We can say a few things at this point about what must be done:

- We must clearly and factually know the Hydra-Headed Delusion Dragon, and we must be able to explain the operating delusions to ourselves and to others.
- We must be able to reveal the delusions convincingly; the Dragon must be made visible.
- The Hydra-Headed Delusion Dragon is an interconnected and many-faceted monster; it must be dealt with systematically. To slay the Dragon means system change;⁸⁴ the US ESPM system will need to be dramatically reconstituted.
- The Delusion Dragon is powerful; an army of forces must be arrayed against it with many skilled warriors as part of our team. Those who can see beyond the Dragon must collaborate, cooperate, and congeal against the fires that the Dragon will use to defend itself.

The following parts of this story will make the battle and the battle plans clear. Join the adventure; it’s the battle of our lifetime. The battles of the 20th century were formidable, but now the fate of humanity and our Life-Support Systems are at stake. It is life or death—a viable future for our descendants or the end of everything we care about. So, follow the story and see where you can become part of the biggest challenge we humans have yet had to face. The Hydra-Headed Delusion Dragon awaits our call to combat!



Let us not disappoint the Dragon..... So, **game-on** Dragon!

⁸⁴ For more about systems and system change, see the Glossary.

Interlude

The story of Contradictions and Delusions to this point has opened the door to the two interconnected crises of climate and ecological overshoot, crises that will determine our futures. The prediction that these will be significant crises for the next generation or for those further into the future no longer holds, because now, millions of people and hundreds of societies around the world are feeling the effects.



But, the crises are not perceived in the foreground of the visual field for most people. Particularly in the wealthy industrialized nations. That is why the pictorial representation of these crises is the beast with many heads, the Hydra-Headed Delusion Dragon introduced in Part 2. This story's authors could continue to elaborate the story of these two converging and overdetermined crises for an entire "One Thousand and One

Nights."⁸⁵ The multiple aspects, the many heads of the Hydra Dragon are that numerous.

But delay in finding the heroes and heroines who will work to slay the dragon would mean that everyone would be on-track to experience the climax of climate breakdown and ecological collapse. **Time is not on humanity's side. The climate system will go haywire, so how does humankind respond quickly and effectively? Can we?** These are the questions that this next part of the story begins to address.



Millions of people and hundreds of societies around the world are now feeling the effects of global warming and ecological overshoot.

Men and children withdrawing water for irrigation in the Dogon plateau, Mali during a sandstorm day, 2011.

Photo: Velio Coviello, CC-by-SA-3.0.

⁸⁵ Wikipedia, "One Thousand and One Nights," en.wikipedia.org/wiki/One_Thousand_and_One_Nights-Synopsis

Part 3

Disasters Are on the Menu: How Do We Respond?

As the Dragon's fire-breath continues and his claws ravage the Earth and our Life-Support Systems, this story must shift. Heretofore, the climate crisis was portrayed as something for the next generations to deal with and ecological overshoot as something to handle by lifestyle modification. Neither portrayal establishes the urgency of the crises; how the Hydra-Dragon is literally breathing down the neck of humanity.



While the US under Trump has the world's only climate-denying leadership, it is not alone in failing to take emissions seriously—few nations are mitigating sufficiently to even meet their own weak targets. There are still no real mechanisms in the Agreement to hold nations to their word. All of the wealthier developed world's governments and political systems are simply lying to their citizens, trying to maintain the illusion that they are working to stabilize climate. As climate writer David Roberts says:⁸⁶

In the event that massive carbon sequestration proves infeasible, avoiding dangerous climate change will require an immediate and precipitous decline in global carbon emissions over a decade or two. Given that most present-day economic activity is driven by fossil fuels, it would mean, at least temporarily, a net decline in economic activity. No one wants to discuss this.

The fig leaf of being able to continue with our current ESPM systems—while developed nations are merely tweaking around the edges—is part of the Hydra-Headed Delusion Dragon. And it is systemic.⁸⁷

Now, is the time for our nation and our culture to talk about Realities we have not been facing and about “what to do.” Global warming tipping points are poised to strike and to interact with human system tipping points, as Job One For Humanity⁸⁸ illustrates (see Box 6: Global Warming Tipping Points). The interactive, synergistic effects of mounting disasters show that we have no time to lose. We must make an immediate and drastic course correction. This must become part of the national conversation.

⁸⁶ David Roberts, “No country on Earth is taking the 2 degree climate target seriously,” Vox, April 29, 2017, www.vox.com/2016/10/4/13118594/2-degrees-no-more-fossil-fuels.

⁸⁷ Systemic refers to something that is spread throughout, system-wide, affecting a group or system, such as a body, economy, market or society as a whole.

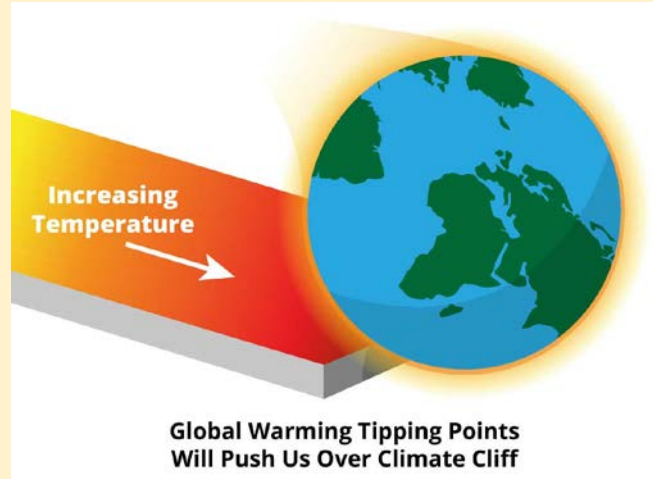
⁸⁸ Job One For Humanity, www.joboneforhumanity.org/.

Box 6: Global Warming Tipping Points

Tipping Points occur when a process or stimulus at a certain point triggers a sudden, significant change in the status of the ongoing process or system, causing it to jump from one stable state to a new, significantly different state. Climate tipping point risks increase with rising temperatures. Tipping points are often also irreversible. For example, the West Antarctic ice shelf appears to have passed its tipping point and is now in an irreversible melting process.

With rising temperatures, chances increase that other global warming tipping points will be triggered, for example:

- Ice-free summers in the Arctic Ocean
- Melting of Greenland Ice Sheet
- Collapse of coral reefs
- Changing ocean currents
- Dieback of Amazon rainforest and boreal forests



For more, see: “What is a global warming tipping point?”⁸⁹

The Synergistic Effect of Multiple Tipping Points

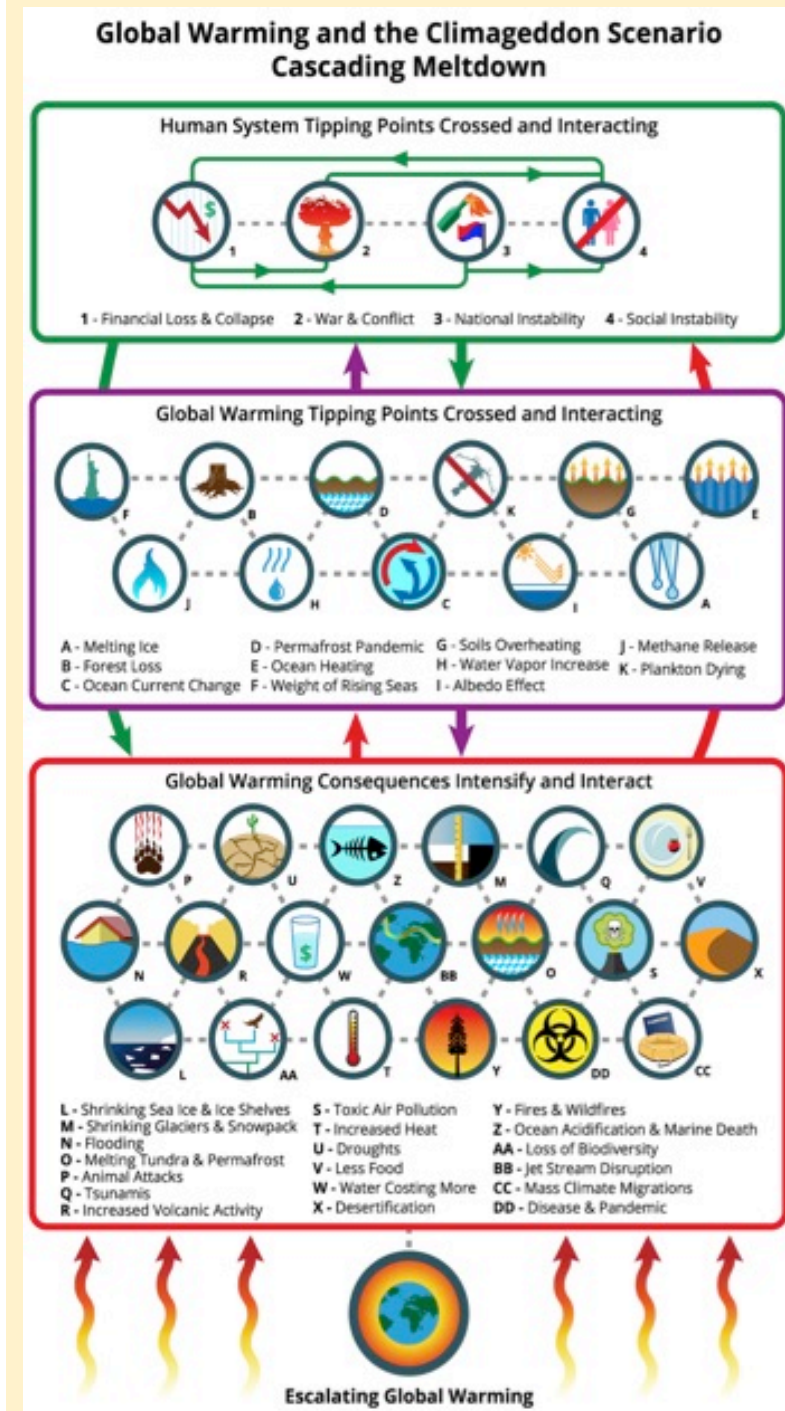
In this illustration below, tipping points of several systems—human, biological, geological, and climate—are depicted. This visual shows how they do not operate separately from each other. Moreover, they can also interact in deadly positive feedback loops—literally ensuring that many more tipping points will be crossed!

Unless we make radical changes immediately, the perfect storm of global warming consequences and tipping points interacting on all three levels will create a cascading collective meltdown of continuous catastrophes, which will eventually crash economic markets, collapse governments, and end civilization.

(continued)

⁸⁹ Job One For Humanity, “What is a global warming tipping point?” www.joboneforhumanity.org/climate_tipping_points.

Box 6: Global Warming Tipping Points (continued)



Upper section: Key human system tipping points will be dramatically affected as more global warming tipping points are crossed and consequences intensify.

Middle section: Key biological, geological, and climate tipping points are listed and shown as interacting with one another.

Bottom section: This is an overview of the key consequences of escalating, intensifying global warming. Importantly, these consequences interact! When one escalates, it can trigger other consequences to do the same. Eventually so many of them will be interacting in a positive feedback loop that we will be facing ecological and climate chaos.

The total synergetic effect—far more than the sum of tipping point component parts—creates cascading consequences and multiplies the risk levels to such a point that once understood, no rational person would ever allow this “Climageddon Scenario” to unfold past early stages.

Source: What is the Climageddon Scenario of Global Warming?⁹⁰

⁹⁰ Job One For Humanity, “What is the Climageddon Scenario of Global Warming?” www.joboneforhumanity.org/climageddon_scenario.

In a World Full of Delusions, What Does an Individual Who Sees Them Do?

A change in perspective must first be realized and included in the “what to do” conversation. The Reality to swallow is that we will not save everyone and the massive problems will not be “solved.” Humankind has predicaments to be endured. We are no longer in the period of “solving the problems.” It is far too late for that. It is now a matter of enduring and responding to the predicaments.⁹¹

We will not save everyone and the massive problems will not be “solved.” We are no longer in the period of “solving the problems.” It is far too late for that. It is now a matter of enduring and responding to the predicaments.

Please carefully understand the difference. The situation we now are in collectively is to do what we can to salvage some type of viable future for some people, for our Life-Supports and for Life itself. To think that this wonderful Earth can support 10 billion humans in 2050,⁹² as the UN projects, is part of the delusion system. We have degraded her too much for that to be realistic. **Our collective task is triage,**⁹³ so that we can increase the number of survivors into the second half of this 21st century.

Triage and salvage are the necessary responses to this climate crisis and the ecological crisis that accompanies it. Climate is the most urgent, so it is front page. For both crises, we must have an honest and effective package of triage and salvage response

options. Our task is to salvage some future for humanity and consciousness and to begin the sorting necessary for the best triaged result. To that effort, the most important effort in our future, is where this story will turn to next.

In this triage and salvage process, humans will need considerable wisdom and insight. We will need to perceive clearly and deeply the implications of this complex systemic situation, and to apprehend its true nature. It will be necessary for us to call on qualities beyond wisdom, to tap Sapience.

Sapience is closely related to the term “Sophia.” It is “transcendent wisdom,” and perceiving “ultimate reality,” or the ultimate truth of things. Going beyond mere practical wisdom, it includes self-knowledge, interconnectedness, and deeper understandings of subjective experience. Sapience can lead to appropriate judgment, a broad understanding of situations, and greater compassion for living beings.⁹⁴

To capture both Wisdom and Sapience, it would be necessary to consistently summon the “better angels of our nature,” and to remember that we were named as wisdom’s creature,

⁹¹ A predicament is an unpleasantly difficult, perplexing, or dangerous situation.

⁹² United Nations Department of Economic and Social Affairs, “World population projected to reach 9.7 billion by 2050,” July 29, 2015, www.un.org/en/development/desa/news/population/2015-report.html.

⁹³ Triage is the determination of priorities for action. It often refers to the process of sorting victims, as of a battle or disaster, to determine medical priority in order to increase the number of survivors.

⁹⁴ From Wikipedia, “Wisdom: Sapience,” en.wikipedia.org/wiki/Wisdom_-_Sapience. For more on Wisdom, see Glossary.

homo sapiens. If one would suggest that this type of “better nature” is not possible because human nature is so mixed with better angels and darker angels, it is important to realize that **in times of stark need, when it is a matter of life and death, when everything one cares about is at stake—when crisis beckons, Life responds.** Life responds to necessity and the necessity is crisp, focused, and complete.

To Wisdom and Sapience/Sophia is where this story now turns. The next parts of the story focus on Wisdom Sophia and we will personify her and let her tell her story, the story of responding to the ultimate crisis and bringing Reality and Truth into sharp relief.



Jean Arnold

Interlude

In order for many of us to survive into the future, accepting difficult challenges will have to become accepted parts of Life. This, for a culture and a people full of entitlement. So, the first order of business is for the Reality of our crises to be communicated. Important in that communication is the reminder that pain is an energizing force of Life and necessary for rapid development.

Importantly, in this pain-averse society, it is essential to point out that pain and sacrifice, along with the individual and collective pleasures that we experience are necessary for our development, our transformation, our evolution.

Box 7: Pain Is Necessary for Survival and Development

Holmes Rolston's book *Three Big Bangs*⁹⁵ explains pain as a developmental and positive aspect of successful evolution:

Further, pain is an energizing force. Suffering not only goes back-to-back with caring sentience but also drives life toward pleasurable fulfillment. The good presupposes concomitant evil, but the evil is enlisted in the service of the good. Individually, the organism seeks to be rid of pain, and yet pain's threat is self-organizing. It forces alarm, action, rest, withdrawal. It immobilizes for healing. The organism is quickened to its needs. The body can better defend itself by evolving a neural alarm system. The experiences of need, want, calamity, and fulfillment have driven the natural and cultural evolution of abilities to know, and in due course abilities to think. Where pain fits into evolutionary theory, it must have ... high survival value, with this selected for, and with a selecting against counterproductive pain. In this sense pain is a prolife force.

... Seen more systemically, the context of creativity logically and empirically requires this context of conflict and resolution. An environment entirely hostile would slay life; life could never have appeared within it. Oppositional nature is the first half of the truth; the second is that none of life's explosive advance is possible without this dialectical stress. Muscles, teeth, eyes, ears, noses, fins, legs, wings, scales, hair, hands, neurons, brains — all of these and almost everything else comes out of the need to make a way through a world that mixes environmental resistance with environmental conductance."

... The evolutionary story could be titled, 'The Evolution of Caring,' positively the capacity to enjoy pleasures. Or, perversely if one prefers, 'The Evolution of Suffering'. Each seeming advance ... steps up the pain.

⁹⁵ Holmes Rolston III, *Three Big Bangs: Matter-Energy, Life, Mind*. New York: Columbia University Press, 2010, pp. 69-70. Google Book view, p. 69: tinyurl.com/ThreeBBp69.

Part 4

Finding a Way Forward

“In a dark time, the eye begins to see.”

– Theodore Roethke

Confronted with the tightening vise between accelerating climate breakdown and accelerating resource depletion, the vast majority of people in the industrial world insist that they can **have** their consumable parts of our Earth **and eat** them too. The unstated but firm belief nonetheless is that “someone” will figure out something that will continue to fill civilization’s rapidly emptying fuel tanks—despite the fact that the energy driving developed world economies has been 80% composed of fossil fuels for decades. Now the pushers of these fuels have turned to sludge like tar sands and massive underground explosions (fracking) to continue the addiction, further accelerating carbon pollution and the race to the bottom of the barrel.⁹⁶

What can people do in this situation, when disasters proliferate and the urgent nature of the global warming crisis continues unmitigated? Can we even imagine a plausible scenario where we might be able to make a difference?

In This Intractable Situation, Can We Even Conceptualize Effective Responses?

How do we get to effective responses given the crises we live within?

First, it is necessary to understand that a “solution,” or even a combination of solutions to the climate and ecology crises is not what is being sought at this point in the story. No, it is crucial to understand that we are not in a situation where clean and clear solutions are what is lacking. Instead it might be better to start from the proposition that humanity is in a triage and salvage situation. The questions are: Can we salvage a livable future for significant future portions of humanity, Life, and critical Life-Support Systems? Can major parts of humanity have viable futures? Humanity on its current course is simply not viable; can we change course and create livable futures?

In the deep well of human possibility does there exist some opportunity for humanity to turn toward viability and respond to the dire emergencies we find ourselves in? That question is the prayer from those who see the Tree of Life smoldering, from those who feel Earth’s Life-Supports suffocating, and from those who turn away because they are unable to see how overwhelming threats can be addressed.

⁹⁶ Tar sands and fracked oil and gas are unconventional hydrocarbons and are even more carbon-intensive than traditionally extracted oil and gas. Those traditional sources are quickly depleting, which is why tar sands and fracking are increasingly relied upon.

Profound Wisdom Located

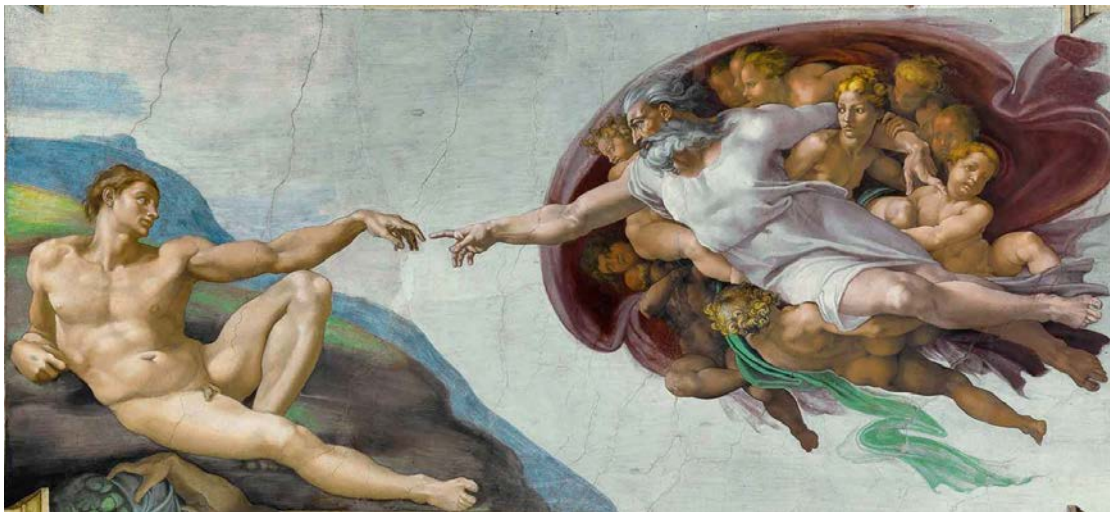
At a loss in the face of this question and needing the kinds of guidance that exceeds normal experience and simple daily events, the storytellers went looking for the extraordinary and the unexpected. “Sapience” is required; that is, a transcendent wisdom that could illuminate ultimate Reality and the ultimate Truth of things. Humanity has been caught in delusions and contradictions, particularly when it comes to Life and Life-Support Systems for itself and for all sentience.

After protracted periods of contemplation, prayer, and meditation, from deep within Life’s mystery there came a still small voice, almost a whisper. The humble appeal had been to understand how to awaken humanity to its immanent crises. Was this nearly inaudible whisper only the reflection of the better angels of our own natures?

Hearing faint murmurings, the storytellers gathered together and beseeched the presence to appear in a form that they could recognize. Slowly taking shape, like a thin gossamer image, there came a visage, an ethereal Being.

This apparition knew that the storytellers’ plaintive request was for the relief of their own pain, as much as it was to serve humankind. Knowing the depth of the delusions afoot, the storytellers had found themselves nearing despair. **They wondered if anyone or anything could ease the suffering in store for humanity? How to free humans from the Dragon, and from the grip of its Hydra-Headed delusions? How to awaken humanity to its destruction of Life-Support Systems, and Life’s richness?**

Wisdom’s essence answered. An ethereal pneuma,⁹⁷ Wisdom understood that humans need to “see” or personify the sublime. For the benefit of all, Wisdom-Sophia projected her favorite personification:



In Michelangelo's famous Sistine Chapel painting, Wisdom (Sophia) nestles in the crook of God's left arm.

Image: Michelangelo di Lodovico Buonarroti Simoni, Sistine Chapel, 1508-12.

⁹⁷ Dictionary.com, “Pneuma,” www.dictionary.com/browse/pneuma.

She appeared and suggested that she be called Sophia W.

To begin, Sophia W. reflected that: **“Deep within the potentials of Life and of humans, there exists the ability to access the Wisdom of Life and Life’s processes.** By doing so, humans could come back into balance with their mothers, both Life and Earth. Wisdom is firmly embedded in both Life and in Life’s processes. Apprehending Wisdom could possibly show the way to becoming a genial part of Life, rather than what humans are demonstrating now—a sinister relationship to Life’s gifts.



“It is not in the nature of Life, nor is it intrinsic to human nature to be hostile to Life itself. A communion with wisdom could relieve humanity of its perniciousness. Humans have lost their way when it comes to gratitude for the gift of Life and for Life’s bounty.

“The essential duty of those humans in tune with the factual and observable prospects for humanity and Life’s supports is to do everything possible to awaken slumbering humans. For those whose gnosis⁹⁸ includes understanding beyond the personal, that is, the enabling of organic life’s flourishing, and the awareness of the comprehensive menace humans are unfolding—now is the time to act and to answer.

“The message is clear: Breath deep and cry out, rouse the slumbering, speak the largest Truth. Life now says that humanity is stealing and wrecking its developmental processes, shredding its natural selection, slashing its diversity, and hacking at the roots of the Tree of Life.⁹⁹ This plunder will rebound upon human heads.”¹⁰⁰

So began the jarring encounter with this astonishing and intimate spirit presence.



Sophia W. continued: “The Dragon you have depicted has humanity in its grip, although humanity’s disconnection from Life is its own doing. Those who understand the depths of the peril must ring the alarm, awaken humanity, and demand that the Dragon be addressed, then answered. I say again, it is the time to act and to answer. You did not make the crises, but that is no matter. **Either you alarm your fellows and engender the wherewithal to act vigorously in this time, or the non-viability of your species will be your end.**

“Evolution is biological Life’s development. That is the human word for how Life develops and adapts over time. Now, humanity has overtaken evolution, and that is extremely dangerous. Natural selection has been superseded by human selection. **Life is no longer in charge of its own development, humanity is.** And humanity does not now know how to respond positively with that responsibility.”

The narrators and the Tree of Life team were filled with questions on top of their astonishment, marveling at the opportunity to speak with Wisdom personified.

⁹⁸ Gnosis is a feminine Greek noun, which means “knowledge.” Wikipedia, “Gnosis,” en.wikipedia.org/wiki/Gnosis_-_Etymology.

⁹⁹ Wikipedia, “Tree of life (biology),” [en.wikipedia.org/wiki/Tree_of_life_\(biology\)](https://en.wikipedia.org/wiki/Tree_of_life_(biology)).

¹⁰⁰ Sophia W.’s comments are indented.

Since the narrators and their Association for the Tree of Life have been focused most particularly on the climate crisis, these questions began the interaction with Sophia. The questions spilled out:

“How do we awaken the US to the depth and urgency of the climate crisis? How do we get an alarm sounded and then heard related to climate destabilization and the risks of runaway climate breakdown? Since corporations and fossil fuel interests hold the government captive and since government intervention is necessary to leverage enough emissions reductions, how do we get the government and voters to pay attention to the facts and the Reality related to climate chaos?”

“STOP, STOP, STOP,” said Sophia W.

And the narrators went silent. So, she continued, “Let us have a conversation and let it be centered on climate and global warming. Let us begin with considering some major factors related to climate and the chances for effective responses to unfolding facts. To begin, what are the most important facts and factors related to the climate crisis, and what do climate advocates do about them?”

The storytellers¹⁰¹ shared with Sophia that they believe what is most critical about looming climate chaos is that the world has concluded an agreement that expresses their commitments to hold the temperature increases to a 2°C heat ceiling. However, the emissions reductions promised are only non-binding intentions, and emissions are increasing despite needing dramatic reduction that equity calls now calls for. Twenty-five years after a world treaty, the UN Framework Convention on Climate Change (UNFCCC),¹⁰² when reductions should have happened for decades, emissions have been consistently rising. So, there is almost no chance whatsoever, no chance if negative emissions are discounted, to hold to anything close to 2°C. So, the climate, along with global ocean levels, will spin out of human control, without dramatic and immediate reductions. We have but a few years left with any chance to hold temperatures to livable levels, and then only with reductions no one is contemplating in the US, i.e., greater than 10% per year.

“Well, that is what you mean, in significant part about your species being non-viable. Do I understand that correctly?” So asked Sophia. “Together then, let us take a look at these factors and determine if there are effective actions that could lead to holding to the heat ceiling and what happens if these effective actions are not forthcoming.”

Narrators responded in a number of ways, and the summary of those responses follows:

“Nations are not even intending to hold to anything close to 2°C. Even there, the ideas controlling the Agreement are that nations can continue business as usual with tweaks, jump way past the 2°C ceiling in burnt carbon pollution, then start gradual reductions down the line, like in 2030 and ‘save the day’ with sucking carbon out of the atmosphere. The problems with that are numerous and complex, and

¹⁰¹ Including the narrators and the Association for the Tree of Life team.

¹⁰² For more on the UNFCCC, see the Glossary, and Wikipedia, “United Nations Framework Convention on Climate Change,” en.wikipedia.org/wiki/United_Nations_Framework_Convention_on_Climate_Change.

the drawing board models that make this seem feasible include ‘plugging into the models miracle carbon sucking technologies’ that make the models look feasible if and only if the miracles work.

“Since the negative emissions technologies that nations are counting on to stabilize climate are virtually guaranteed to “not work,” the real rate of temperature increase is about 3-4° Celsius, or 6-7° Fahrenheit. That does not include self-reinforcing feedbacks and amplifications, so stabilization below 4°C is unrealistic with the added risks of sea-level rise, ice-melt/albedo¹⁰³ decrease, ocean acidification,¹⁰⁴ and additional heat-reinforcing feedbacks.

“Moreover, the US promised role related to emissions is to dramatically decrease our own emissions and also to help less wealthy nations to develop without having to concentrate on fossil fuels. To do that they need financial resources and technology. These equity responses to the undeveloped nations are included in the Paris Agreement.

Now however, Trump’s administration is doing neither to help poorer nations, while continuing to accelerate US fossil fuel development, extraction and emissions’ productions. The Republican Party is the only major party in the world that denies that global warming is real and that it is happening. US subsidies and current administrative promotion of fossil production and consumption, domestically and internationally, are lethal to heat ceiling limits. Since the temperature increases are tied to cumulative emissions, once the fossils are developed and consumed, future administrations cannot remedy the results by future reductions because once the emissions are in the air, they remain for centuries.

“And because Trump holds the national levers with control of the national administration, US environmental and climate stabilizing organizations are focused on state and local actions. But the UN Emissions Gap report shows clearly that the groups in the US promoting city-state efforts to reduce emissions have failed to reduce emissions and cannot neutralize Trump, nor can they make Trump irrelevant to the process as claimed, nor can they ‘overcome’ his withdrawal from the Paris Agreement. Their “resistance” is having no effect on policy. Instead, policy to **increase** emissions—what Trump’s minions promote—rules the day.

“Considering both sides of the issue: On the one hand, denying obvious climate warming is real and an existential threat, and, on the other, working on issues that do not match the scale and urgency of the crisis, means that **both** sides are completely ineffective related to the challenge posed by our polluting emissions that continue unabated.”

“Enough for now,” asserted Sophia. “Regarding nations and their neglect, it is plain that nations are not taking seriously the temperature limits they have agreed to hold to as a temperature ceiling. Depending on negative emissions technologies is an agreement by all developed wealthy countries to try to build castles in the air, while foolishly admiring each other’s castle design plans. It is a disguised effort to continue business as normal, business as

¹⁰³ Albedo the measure of how much a surface reflects the Sun’s energy. For example, warmer temperatures melt snow and ice, creating a darker surface that lowers the albedo effect.

¹⁰⁴ Ocean acidification is the result of increased CO₂ in the ocean, causing it to become more acidic. For more, see: Association for the Tree of Life, “Ocean Acidification,” www.tree-of-life.works/ocean_acidification.

usual while pretending to do substantial emissions reductions. It is a collective mirage, you have called it a delusion, and named it the Tinkerbell-Effect and that is apt. Can any of you suggest positive responses to the nations' collective delusions?"

None of the narrators had a better suggestion than to continue to try to call the worlds' nations bluffs and pointing out that relying on "miracle" reductions of atmospheric greenhouse gasses by removing them is not any more likely than producing abundant useful energy to run industrialized economies by using nuclear fusion.¹⁰⁵

Sophia then continued: "It is very likely, is it not, that most of your people would believe that the world's nations will find some other way to continue reliance on fossil energy, even if you could point out the fallacy of relying on this current negative emissions technology. For example, wouldn't most people believe something similar to what you have explained Bill Gates believes, i.e., that someone will invent a zero-carbon energy source or something close to it, so that the status quo business systems and economic arrangements, including unabated economic growth, can continue?"

We story-tellers had to agree since Bill Gates, for example has said over and over again that we can invent our way out of the climate crisis, despite no evidence for that in the eight years since he started that "invention of zero carbon energy" waiting game.¹⁰⁶

Waiting for a techno-fix or wishing for carbon-sucking unicorns seems the Trump-era US cultural response to the climate crisis, from those who understand that that climate is warming. The Trump administration itself is playing lead ostrich. Meanwhile, all of the industrialized wealthy nations are following suit, wishing and waiting as well. Rich nations are content to continue with ~80% of their energy coming from fossil fuels; running their economies on ancient sunlight rather than incoming sunlight. Therefore, the atmosphere will continue to accumulate more and more greenhouse gases. It really is simple: more greenhouse effect equals more heat and more temperature increases. While waiting for the techno-fix is an empty exercise, a *Waiting for Godot*,¹⁰⁷ the waiting itself makes change seemingly unnecessary.

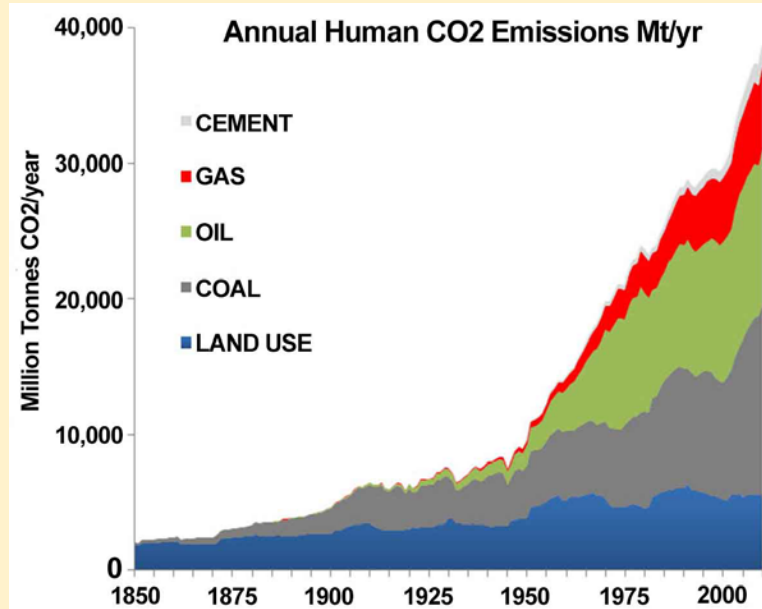
One can illustrate why wishing for a techno-fix or waiting for humanity to begin to reduce our flamed carbon usage is deranged. Consider the graph below:

¹⁰⁵ Read about the delusions related to fusion energy, an energy source predicted for the last 50 years to be within ten years of proof, and still in 2018 at least that far away from even being demonstrated, despite hundreds of physicists predicting it would be available by now. Here is a decent summary: Wikipedia, "Fusion power," en.wikipedia.org/wiki/Fusion_power.

¹⁰⁶ Association for the Tree of Life, "Bill Gates Is Betting Our Future on Miracles," November 12, 2015, www.tree-of-life.works/gates_miracles

¹⁰⁷ *Waiting for Godot* is a play in which two characters wait for the arrival of someone named Godot who never arrives. For more, see: Wikipedia, "Waiting for Godot," en.wikipedia.org/wiki/Waiting_for_Godot.

Box 8: CO2 Emissions by Source



The graph illustrates millions of tonnes of CO₂ per year (a tonne is 2204.6 pounds, while a ton is 2,000 pounds). About 45% of the CO₂ humans burn accumulates in our atmosphere every year. Since the beginning of the Industrial Revolution we have increased the total amount of all greenhouse gases in the atmosphere by about 50%.

Graph: Critical-Angle.net¹⁰⁸

But humanity is not aware of the gravity or the urgency of the situation. Despite the massive amounts of warming and pollution, these numbers and predictions of future pain do not readily translate into a “need” for alarm. We are nonetheless waiting on a techno-miracle, not knowing that none are on the horizon, and with an empty horizon techno-miracles will come too late to stabilize climate before a full catastrophe; without drastic fossil use reductions and change.

At this point Sophia responded, “What you communicate and illustrate may be both factual and true, but is it relevant to our own inquiries here between and among ourselves? Even if the amounts of burned carbon thrown into the air was known by the public, would a general alarm be heeded if most people do not understand; if most still would wait on different species of ‘ghost techno-miracles;’ and if most nations are still sticking with models and approaches that are backed by speculative and theoretical ideas (with no substantive examples to lend substance to the models)? Additionally, if nations do not acknowledge the urgency or the scope of the problem, how are their citizens supposed to act? Can they move an unmoved and unmoving political system? And I am not speaking of just the US.

“So, now please continue.”

¹⁰⁸ Andy Skuce, “The history of emissions and the Great Acceleration,” Critical Angle blog, April 1, 2015, critical-angle.net/2015/04/01/emissions-history-and-the-great-acceleration/.

“Well,” we said, “the great majority of those who care to stabilize climate in the US are working at the wrong scale, without the levers that attend to national political administrative control, and they are not communicating urgency, nor have environmentalists communicated the emergent nature of the climate crisis. We understand the pathetic limits of state and local efforts, compared to the massive reductions needed. We believe that Michael Bloomberg and Jerry Brown are well intentioned, as are most efforts they have initiated, but the overall quantitative reductions and speed needed, is obscured by lack of understanding and also by belief in some kind of techno-fix or techno-invention.”

“Yes,” answered Sophia. “It is interesting that you humans believe that technology can ‘invent’ energy sources and invent thermodynamic negentropy (or order as it is more commonly known).¹⁰⁹ Technology is different from what it is commonly understood to be. It is not at all a miracle or a black-box. Technology is the use of science in industry, engineering, etc., to invent useful things or to solve problems. Also, it is a machine, piece of equipment, method, etc., that is created by technology. **Technology can and does use energy, but it does not invent any. Energy is separate from technology and enables it, as it enables anything that moves.** The vast majority of energy derives from the sun, in either concentrated ancient sunlight or current incoming sunlight.

“The last major energy system developed by technology, not invented by it was nuclear. In that case, its development was severely limited by the pollution it produces and by how long the polluting by-products stay visibly poisonous. The poisonous by-products of fossil fuels are visible for far shorter periods and most of them are invisible. The poisonous by-products of nuclear fission cannot be ignored; just the opposite for fossil fuels.

“Now you storytellers have detailed many reasons that climate will not be stabilized because of the world’s nations ignoring the reductions that must be made, and you have explained that your supposed allies in your nation are working on the wrong scale for the wrong factors with the wrong timeframes in mind. These interpretations are mostly accurate and factual, so please continue.”

The next area we brought up involved philanthropies and their focus on funding ineffective organizations that are not reducing emissions. Funding agencies and philanthropies provide hundreds of millions of dollars annually that are supposed to fight for climate destabilization and halting global warming.¹¹⁰

Narrators said, “The Hewlett Foundation is a major example. Hewlett’s Climate and Energy Program¹¹¹ spends some \$100+ million annually seeking to stabilize climate. Hewlett pledged another \$600 million these next five years. They are committed to holding climate warming to the international 2°C ceiling. They say they support work to ‘ensure that energy sources are clean and efficient, and that global average temperature rise does not exceed 2° Celsius.’¹¹² They plainly state their measuring stick:

¹⁰⁹ Negentropy is defined as the opposite of entropy (disorder). See Wikipedia, “Entropy (Order and Disorder)”: [en.wikipedia.org/wiki/Entropy_\(order_and_disorder\)](https://en.wikipedia.org/wiki/Entropy_(order_and_disorder)).

¹¹⁰ For a basic definition of philanthropy, see Glossary.

¹¹¹ William + Flora Hewlett Foundation, “Climate and Energy,” www.hewlett.org/strategy/climate-and-energy/.

¹¹² Hewlett Foundation, Climate and Energy Program: www.hewlett.org/strategy/climate-and-energy/

'We track progress by measuring the emission reductions resulting from climate and clean energy policies that governments adopt, and on building political will for action on these policies.'¹¹³

"From their own criteria then, Hewlett is failing, since climate and clean energy policies have not reduced emissions over the last 25 years. Nor are any policies at a consequent level, like the national level, in place or proposed that would impact global warming substantively. But, Hewlett continues to support organizations that cannot and will not matter when it comes to the climate system. Instead, CO2 emissions are 60% higher than they were in 1990 and continue to increase. Amazingly, what they propose includes believing that sometime in the near future Negative Emissions Technologies like BECCS will actually work!"

Another narrator added, "In 2007, a number of philanthropies, led by the Hewlett Foundation produced the "Design to Win" plan¹¹⁴ that explained how philanthropy would turn the tide on global warming.¹¹⁵ Over ten years later, it is clear that the billions spent on emissions reductions in this period have failed, and that few if any of the plan's major goals were accomplished.

"Philanthropies continue to aim at the wrong target, pulling insignificant levers that produce far too little temperature containment—supporting organizations that will not matter when it comes to the climate system. Moreover, they are not including tipping points or warming feedbacks in their analysis. **Importantly, they are not engaging the American public, which could provide a necessary and substantial leverage point.** Finally, the few philanthropists who grasp the scope and scale of the crises (Bill Gates is one example) are betting on still theoretical 'miracle' technologies.

"Emissions reductions are the goal, but complete failure related to philanthropy's goals does not change who they fund, how they fund, or how they measure results. If they worked toward what they say are their goals (and we agree with their goals), then they would change their funding criteria or completely revamp what they do and how they do it, because their billions of dollars spent supposedly reducing emissions have yielded no results.

"So, the philanthropic world, the funding source for so much of the financial assistance designed to fight global warming is failing completely, and has consistently failed over the last dozen years, failure defined by its own established criteria."

"I don't believe you are being fair to philanthropy," said Sophia. "I can explain."

"Don't philanthropies follow the models that are the UN IPCC models? The models that contain the unrealistic and conjectural negative emissions technologies that you have already noted are nothing but empty wishes at this point, and unlikely to matter 'in time' if runaway warming is to be averted?"

¹¹³ Ibid.

¹¹⁴ "DESIGN TO WIN: PHILANTHROPY'S ROLE IN THE FIGHT AGAINST GLOBAL WARMING," California Environmental Associates, August 2007, www.climateworks.org/wp-content/uploads/2015/02/design_to_win_final_8_31_07.pdf.

¹¹⁵ Design to Win's Executive Summary, pages 5-9, explains the strategies: (1) prioritize and pursue direct interventions to prevent lock-in of emissions in key sectors and regions, (2) policy reform (cap and trade was unsuccessfully pursued).

“Is it true that philanthropies fund the city-state efforts in your US because they are the organizations following the same models, the models that are the UN models, because Jerry Brown, and Michael Bloomberg are UN emissaries, or their equivalent? The UN is the composite of the nations in the Paris Agreement, is it not? Do you expect all of these people to suddenly say they can’t do what they have only agreed to do two years ago? All of the world signed onto that delusion system with intentions that do not meet the goals of the Agreement, and with no mechanisms to actually stabilize climate at anything close to what the Agreement dictates. So, don’t international philanthropies need to follow what the international all-world agreement suggests, even if it is completely unrealistic and comprised of sand castles in the air, as all of us here together understand?”

“Finally, isn’t the giant dominating philanthropy, i.e., the Bill and Melinda Gates Foundation publicly on record, as you have stated, as wanting and waiting for a techno-miracle? Don’t they illustrate the failure to understand what technology is and what it can do? Don’t many philanthropies follow their lead, and are not many of these and other philanthropies wishing and waiting for that same techno-miracle?”

“Therefore, philanthropies are not different than nations in wishful thinking, and they are not different than many people in wishing for a techno-miracle that will not come, and even if it did, it would be too late for the 2°C heat ceiling. You are not being fair to philanthropy because you are saying the same thing about them as you are saying about nations and those under the techno-delusion spell. They are not failing for any different or special reason. They are wasting their resources, and they are not special in that regard.

“So, move on to something different if you have more for us to consider together.”

Following Sophia’s advice, we continued.

“We narrators see several ways that our allies, our environmental groups have not helped to appropriately present the crisis. For decades, those on our side have tried to make the crisis smaller, less difficult, and less disruptive for individuals and for business as usual, than the reality of the situation warrants. This is true in each step, each year along the way, and it is true now.

“Consider that individuals in our US society have been terribly confused when it comes to climate and its implications—caused not just by the intentional distortions promulgated by the fossil fuel industry and their minions, but also by the failures of the environmental groups. For two dozen years, we have promoted responses that failed to match the scale or scope of the crisis.

“Eco-advocates have said that individual responses, and well-intentioned people could easily make the required differences in the crisis, like: ‘50 Simple Things You Can Do to Save the Earth.’¹¹⁶ It turns out that the crisis is neither resolved by simple measures, nor can it be neutralized by well-intentioned people on our side acting according to ‘better ideas’ within the current economic system. Nor will promoting vegetarianism or eating lower on the food chain make substantive differences in emissions,

¹¹⁶ John Javna, Sophie Javna, Jesse Javna, “50 Simple Things You Can Do to Save the Earth: All New! Updated for the 21st Century,” Hyperion, 2008, www.amazon.com/dp/1401322999/ref=olp_product_details?encoding=UTF8&me=.

given their scale and the demand world-wide to eat more meat and domestic animal protein. Similar moral exhortations from different groups, as well-meaning as they are, matter little if at all for the scope and scale of the climate crisis.

“It is far too late for our environmental organizations and for ‘Big Green’ to suggest lifestyle changes, because the reductions needed for climate stability need to be achieved by systemic

It is far too late to suggest lifestyle changes because the reductions needed for climate stability need to be achieved by systemic constraint.

constraint, not by exhortations to lifestyle adjustments, like driving less, eating less meat, and lowering one’s ecological footprint. The reductions needed are beyond lifestyle adjustments and must include systemic adjustments, like restrictions on planes, cars and fossil consumption, or stability is not achievable. Unfortunately, none of the scale systemic adjustments needed are being discussed, much less under active consideration.

“As another aspect of soft-pedaling the crisis, switching to renewables from fossil fuels is still believed to enable a continuation of industrialized consumer capitalism, without radical change. Despite many environ-

mentalists and allies believing that renewable energy sources such as wind and solar can substitute for fossils, and allow us to continue as we are, this is neither true nor is the transition happening fast enough to stabilize climate.¹¹⁷ Renewables’ capacity cannot be ramped up fast enough, particularly with their variability. Besides, they rely on fossils to mine, manufacture, move, and more. Reduced consumption and major economic revisions are necessary to meet the magnitude of the crisis. Unless Americans use a lot less energy for decades, the world will quickly blow past 2°C. This is suggested by almost no one except in whispered terms.

“Finally, on the personal level, Americans are busy with their social-media screens and individual economic pursuits. So, they do not believe they are the ones who have the ‘agency’ to meet the problem, nor is it their responsibility as they see it. It is the government’s responsibility from their perspective, and the government is not perceived as part of them, but something different and somewhat alien. In the US, government is not referred to as ‘our government’ but by stating that government is a ‘they,’ something beyond normal day-to-day involvement or care.”

To this, Sophia replied: **“Reality is obscured in the screen-driven world too many live in. Screens are addictive, and the underlying or unconscious wisdom of most people is muted by a flitting but endless series of snippets of gratification,** seeking snippets where process, for example, ‘liking’ or ‘checking-off’ some idea is confused with actual results. The result is that millions of people can ‘like’ something or vote online for something and nothing results in Reality.

¹¹⁷ See Richard Heinberg’s book, “Our Renewable Future,” ourrenewablefuture.org/. Richard generously makes his book and additional materials available free-of-charge on the hyperlinked site.

“If Reality cannot be seen and experienced—by that I mean primary Reality, the Reality of what actually is happening to the Earth outside of screens and climate-controlled buildings—then humanity will perish.”

She continued, “You also mention agency. **People need a sense of agency, of having influence, of making some kind of difference. It might be up to you to show them how to gain that agency.** There are a myriad of ways to do that. People will not sink into meaninglessness if you provide them a way to address the crises we are discussing.

“Now please allow me to summarize. The scale of the decarbonization challenge to meet the Paris Agreement is severely underplayed in wealthy nations, most particularly in the US. Yes, it will require precipitous emissions reductions before 2030, probably much sooner. Even then, stabilization from the current emissions reductions planned will require a new carbon sink on the scale of the ocean sink.

“So, without a complete re-conceptualization of the challenge and the crisis, the world is extremely likely to overshoot. A catastrophic failure of policy, for example, waiting another decade for transformative policy and full commitments to fossil-free economies, will have irreversible and deleterious repercussions for humanity's remaining time on Earth.

“Next, you understand how your own environmental groups and affiliated organizations have minimized the crisis and its timelines, so you are not blaming the denialists alone. That is helpful. Governments are still interested in economic growth and it conflicts with fossil reductions that are significant, without even mentioning precipitous. Philanthropies do not fund efforts commensurate with the scale or urgency of the crisis. That is to be expected, since they would have to redefine the crisis and acknowledge the size and speed of change required. What large, substantive and vocal groups are doing that?

“More, a large portion of your people await a techno-fix, or a new energy system, failing to understand what technology is able to do and failing to understand thermodynamics, and failing to understand the quantities involved in emissions pollution along with their cumulative nature.

“You have described the extent of the crisis from several perspectives. The diagnosis, meaning that climate chaos looms, is clear. Moreover, all of the factors you have identified that keep emissions from being addressed, or taken seriously, have been continuing for this 21st human century. You explain that it is unfortunately true that your fossil pollution has accelerated for the last 18 years, even more than the two decades before that.

“So, having an understanding of the crisis is not missing in your culture. Having many people in your world that understand its extensiveness and how little time you have to self-correct in order to salvage some semblance of a livable climate is not missing either. All of these particulars are understood by enough people in your country and culture, if

they were recognized, felt, and discussed by your nation's people. What is discussed by your nation are none of the factors you have related to me.

"Why is that, do you think?"

Most of us had some answer to the question that was a variant of: (a) economic or business interests that do not hold these factors as important or relevant to their interests which are more short term and financial; (b) government captivated by business interests; (c) many people, like Bill Gates believe in a coming techno-fix, and some are techno-irrationalists, like Elon Musk who publicly stated "we must colonize Mars to save the human species;"¹¹⁸ (d) many do not understand the crisis or its depth and believe they can just continue the consumer culture in which they are enmeshed; and (e) many do not see it as "their" problem, since they are too busy consuming and spending time with social media. Finally, many see no agency¹¹⁹ for themselves in the matter.

"Most all of what you say makes good sense," said Sophia. "So, the climate crisis is invisible or relatively so for most people. If it figures in their lives, it is so peripheral as to not matter substantively. Take it further. Climate pollution is literally invisible. It cannot be seen, heard, felt, smelled, touched, and not tasted.

"It will remain invisible until it is too late and it hits home, long after action would have mattered. So, the issue most likely to end humanity's precious civilization and to make a bad joke of your name, homo sapiens, is not perceived nor felt in any way that matters enough to change emissions patterns since the problem surfaced.

"Now we are getting somewhere! **The crises are invisible!**

"There is more to it, too. You see, **humanity built its current economic system, along with its social systems, codified its moral systems, and set its political systems at a time when super-abundance was being illuminated.** In mid-18th century, when Adam Smith was formulating his 'Inquiry into the Nature and Causes of the Wealth of Nations,'¹²⁰ known now by just the last four words of his title, general perceptions about the state of the world were changing. Then, Europe pressed hard on its means of subsistence. Reality was comprised of the insufficiencies of high-grade timber, and arable land for agriculture. Foodstocks were not yet supplemented by the potato and other New World foodstuffs that increased larders. Malthusian over-population and its co-factor, famine seemed like obvious limiting factors to economies, because of lived limits.

"The exploitation and then the development and use of the New World and Oceania,¹²¹ meant that Europe's subsistence was supplanted by surfeit. Overabundance of the necessities for what was needed for dramatic wealth expansion emerged then, both for enterprising

¹¹⁸ Olivia Solon, "Elon Musk: we must colonise Mars to preserve our species in a third world war," The Guardian, March 11, 2018, www.theguardian.com/technology/2018/mar/11/elon-musk-colonise-mars-third-world-war.

¹¹⁹ In the sense of meaning a person or group has means of exerting power or influence; or instrumentality.

¹²⁰ Adam Smith, "An Inquiry into the Nature and Causes of the Wealth of Nations," 1776, files.libertyfund.org/files/220/0141-02_Bk.pdf.

¹²¹ Wikipedia, "Oceania," en.wikipedia.org/wiki/Oceania.

individuals and for the European nations who instituted colonialism to support expanding lifestyles and tastes. New worlds controlled by Europeans yielded super-abundances of virgin resource bases, seemingly infinite new sources for agriculture (arable land), new food stocks and stores, precious metals and metal ores, and more. Concomitantly, coal powered mechanization allowed the rapid use of materials, brought the steam engine which supported transport, multiplied useful freight, and expanded trade.

“Food crops originating from the new world boosted food production so extensively that European populations doubled from 1750 to 1850. Scarcity was displaced by limitless “found” wealth, and the values characteristic of modern civilization, like individualism, freedom and democracy, were laid in place and buttressed with institutions that championed them.”¹²²

Some of us interrupted here and protested that the values of individualism, freedom and even democracy were established long before the 18th and 19th centuries.

Sophia continued, “Surely, concepts like democracy, freedom and individualism were championed by individual thinkers and some regions of the world before that time, but individualism, for example had little chance for concrete expression before shortages yielded to boom times; then ‘individualism’ in its modern form could exist and become common-to-ubiquitous. What I am emphasizing is that the perceptions about what Europeans thought of as ‘normal’ changed during the beginning of what you call the Industrial Revolution due to dramatically expanded and relatively untouched continents that were being newly developed and exploited. So, the economic, social, political and even moral systems by which you Americans operate now was cast then in an era of surplus, plenitude when the world was relatively empty. There were less than one-seventh as many of you humans then, compared to now.

“To ‘see’ the world as awash in usable and disposable riches, with prosperity and opportunity abounding in a limitless world was true then and this perception has not changed, at least in how humans operate. For example, your world’s economies are considered healthy if and only if they are growing; while that growth demands increasing through-puts of materials, metals and minerals.

“Does this ever constrict abundance and reach into insufficiency with 700% more of you in numbers, and with less and less availability of your air, water and land’s ability to absorb various wastes after production and consumption?

“Wastes accumulates into toxics and poisons when concentration increases past your set tolerances. For burning carbonaceous fuels that tolerance has been set at 2°C above humanity’s pre-industrial period. But, the political, moral and economic systems you

¹²² See Appendix III for a further discussion of these ideas by writer William Ophuls.

instituted in the era of limitless abundance do not countenance limits, restraints, and restrictions. That is still largely true.

“The question is: Can the need for change demanded by binding limits and prescribed insufficiencies be perceived and felt, particularly when it is not now perceived nor deeply felt?”

“The future demands that humans cooperate with fixed limits, like the greenhouse budget corresponding to 2°C and other boundaries. But, when the economic and political systems you use were instituted, it was in an empty world with limitless abundance, at least perceptually. The change into a world that exists now, with dawning insufficiency and quality of throughput declining, has not been perceived nor discussed. Perhaps even more important, your economic, social, political, and moral systems (ESPMs), do not include these concepts, nor do they operate in concert with any acknowledgement of planetary boundaries.

“The unanswered question is, how can you make dawning insufficiency seen and felt, so that concomitant changes are motivated and implemented? Can you humans find a way out of the slippery slopes toward catastrophe in your ESPM systems and assure a future worth living in?”

Interlude

The storytellers and their allies in the Association for the Tree of Life now needed to take stock after their latest audience with Sophia-Wisdom. Narrators recalled what Sophia first said when she appeared:

“Deep within the potentials of Life and of humans, there exists the ability to access the Wisdom of Life and Life’s processes. By doing so, humans could come back into balance with their mothers, both Life and Earth. Wisdom is firmly embedded in both Life and in Life’s processes. Apprehending Wisdom could possibly show the way to becoming a genial part of Life, rather than what humans are demonstrating now—a sinister relationship to Life’s gifts.”

The conversations with Sophia had provided no effective responses to the myriad of delusions and contradictions that have kept effective climate stabilization action at bay. Humanity’s mindless destruction of the Tree of Life, and mindless self-destruction continues unabated. How can this be when Sophia had said that an alarm had to be sounded, so that humanity would awaken from their fixation on the delusions the narrators had discussed with her?

She also had said that apprehending Wisdom could show the way: “So, how do those who understand the extent and degree of the plight facing humanity cause the awakening and sound the alarm?”

There was a long silence after that particular question. Then slowly, sweetly Sophia began to sing. It was a song many of us knew: “How Can I Keep from Singing?” She sang it twice, and the second time through, she asked us to join. We did. The lyrics to the song follow:

My life goes on in endless song
Above earth’s lamentations,
I hear the real, though far-off hymn
That hails a new creation.

Through all the tumult and the strife
I hear its music ringing,
It sounds an echo in my soul.
How can I keep from singing?

While though the tempest loudly roars,
I hear the truth, it liveth.
And though the darkness ‘round me close,
Songs in the night it giveth.

No storm can shake my inmost calm,
While to that rock I’m clinging.

Since love is lord of heaven and earth
How can I keep from singing?

When tyrants tremble in their fear
And hear their death knell ringing,
When friends rejoice both far and near
How can I keep from singing?

In prison cell and dungeon vile
Our thoughts to them are winging,
When friends by shame are undefiled
How can I keep from singing?¹²³

She sounded very much like Enya in her lovely sweet and plaintive voice, which Dear Reader, you can hear by listening here: www.youtube.com/watch?v=-Rht3EIEvHQ. Sophia thanked us for singing, especially for joining in the chorus, “How Can I Keep from Singing.”

She continued: “Now that you have joined me in celestial music,¹²⁴ you can understand how your feelings and perspectives are a crucial Kairos period,¹²⁵ a period of dramatic change brought forth because of realizations, realizations that cannot be denied. These do not occur in the typical ways of unfolding normal time, the ‘Chronos’ of day-to-day. Humanity needs must awaken to the urgency of this Kairos period, a time when everything must change or all is lost.

“You will not accomplish the opening needed to the other side of the mountain by pushing on the mountain with your bare hands as you are doing now. Humanity will come back to Life and see that it is part of Life’s Tree, or everything all of you care about will end. That is why now is humanity’s most critical Kairos moment, your Kairos time. The efforts of you narrators have yet to yield benefit on behalf of the Tree of Life. Life’s Tree is continuing to be relentlessly attacked and assaulted. You need to entirely change your approach as well. For humans, the period of great consequences follows. Bring these Realities to Light!

“Questions anyone?”

¹²³ Folk singer Pete Seeger learned this version of “How Can I Keep from Singing,” from Doris Plenn, a family friend, who had reworked much of the lyrics. The original lyrics were attributed to Pauline T., in 1868.

¹²⁴ Sophia never explained what she meant by celestial music, even when later asked.

¹²⁵ Wikipedia, “Kairos,” en.wikipedia.org/wiki/Kairos.

Part 5

Humanity's Kairos¹²⁶

“There are moments, in which ‘Kairos,’ the right time, is united with ‘logos,’ the ‘eternal truth,’ and in which fate is decided”¹²⁷

– Paul Tillich

Sophia has intimated that what the narrators and the Association for the Tree of Life have been doing has been fruitless and will continue to be futile. She asked for questions.

Questions tumbled out. The most pertinent ones will be discussed.

“Explain what you mean about trying to penetrate the big mountain by pushing with our bare hands.”

Sophia responded, “Your work, admirable though it is, has not produced measurable results in constraining emissions, much less lowering them. That is correct, is it not?”

No one answered that rhetorical question.

Sophia continued, “Now, most of you suggest that there is no realistic plan to reduce emissions seriously and significantly, any time soon. The same strategies and tactics used recently or in the past will not work to stabilize your climate. Ominously, massive amounts of carbonaceous emissions and pollution continue to be exhaled by humans and use of these fuels continues to rise. Therefore, trying to hold humanity’s economies, still using carbon fuels for 80% of your energy, to the 2°C, is unrealistic.

“Wishing and waiting for carbon sucking technologies, those negative emissions technologies you have discussed, is just an excuse to keep going with present practices. The world’s political systems are playing along, too. Reductions within the world agreement would mean quitting oil, coal, and methane faster and more aggressively than governments would even consider in the existing policy environment.

“You are unable to point to anything in the past two decades, or in the present that could form a basis for climate stabilization. As you have explained clearly, plans and intentions formed and formulated by nations, and subnational groups point to what they intend to do sometime in the future, and in every case what they intend will blast past 2°C. So, there is an

¹²⁶ Kairos is an ancient Greek word meaning the right, critical, or opportune moment. The ancient Greeks had two words for time: (1) *chronos*, meaning chronological or sequential time, and (2) *kairos*, referring to an opportune time for action. For more, see Glossary and Wikipedia, “Kairos,” en.wikipedia.org/wiki/Kairos.

¹²⁷ “Paul Tillich,” Wikiquote, en.wikiquote.org/wiki/Paul_Tillich.

array of intentions that mask continuing—and as the information shows expanding—fossil fuel usage and demand.

“Unfortunately, you do not have time to accomplish minor reductions in the next decade or the one after that, because the heat continuing to build in the system will remain for hundreds and hundreds of years. You know it is a cumulative crisis and what you burn today, you cannot burn tomorrow. Moreover, delay is death.

“So, pushing on a giant granite mountain with your bare hands means continuing to do what does not and what cannot work to stabilize climate. The result you want to achieve is to get through or get past the resistance to effective climate stability policies and practices. To do that, you do not continue to do what cannot and what will not work, but to **go around the mountain.**”

Another Tree of Life team-member asked: “In the face of the Trump Administration’s work to increase fossil fuel development and use, encouraging increases both at home and abroad, how do we counter these effects; effects that are making matters worse?”

Sophia responded, “Nations of your world gathered in Paris to construct what were their promises, their intentions to hold temperature increases to 2°C. The policy levers necessary to lower carbon fuels use are at the national level. To ‘resist,’ as many of you have tried to do is to push against those who both hold and who administer those policy levers. ‘Resistance’ may identify that you belong to an opposition tribe but does not present ways and means to get results when levers are in opposition hands.

To make progress in the situations, you must change the paradigm; change the perspective through which the issues are engaged.

“To make progress in the situations you face you must change the paradigm, change the perspectives through which issues are engaged, change how one feels about the issues, change the meanings associated with the conflict. In brief, you must change how situations are seen and the feelings associated with them. In your recent history, Martin Luther King did these things to great effect in changing the approach, perspectives, emotional responses related to social justice for black people when the vitriol behind injustice was exposed in the 1955-1965 time period.”

Reaching for the Kairos

Following several additional questions, the key question was asked, “You have suggested when we first met that there were ways to deal with the multiple crises we face, yet you have argued that the efforts we have made, along with others to diffuse the climate crisis have not born fruit, and we must admit that fossil fuel use is still expanding. You have further asserted that no current efforts at reducing emissions will work in time. So, what do we do and how do we do it? What are we missing? How do we go around the mountain, as you put it?”

“Well, we are getting closer to the most critical questions. You storytellers and allies have worked these last many years to stabilize your climate system by trying to get the worlds’ emissions reduced, and that has not worked, unfortunately. The world did gather and in Paris, late in 2015, the world did agree to hold temperature rises to 2°C above pre-industrial temperatures.

“Nations words and the intentions that went with them did not then and have not since come close to what is needed to stabilize close to anything like 2°C. Instead, the world is on track to explode past that into catastrophic temperature levels, closer to 4°C. Even then, the agreement had to do two things that make the agreement form without substance, and words without action. One, the IPCC did not include probable and likely self-reinforcing disruptions, like tipping-points, self-reinforcing feedback effects and related destructive factors. Many examples exist, but ocean acidification and sea-level rise from decreased albedo are just two of dozens of factors.

“Second, to make the 2°C level seem plausible, the IPCC modelers needed to plug into their models massive negative emissions systems (NETs) in order to make the models seem like they could hold to 2°C. The problem with NETs as you have pointed out are: (1) they have never worked, (2) none are working now, (3) no one can say that they will ever work, and (4) even if they do, they cannot be deployed in time, at the scale needed. There is no indication that they can be deployed economically without adding to the very emissions they are supposed to draw down.

“Your work (and this story) makes the emptiness of the world’s climate stabilization agreement plain, but the confusion and delusions surrounding the climate crisis and the delay engendered by entities and organizations with money to be made by the effective delaying tactics have made the climate issues one that even many of your allies have admitted will not be resolved before catastrophe becomes inevitable.

“Expecting effective climate action, given current conditions politically, socially, and economically is not realistic. Nonetheless, an alarm must be sounded, humanity must see and feel the crises you all face, and revolutionary action initiated. This is the Kairos moment for humanity—the critical moment, the decisive time, the moment of Truth. It is the point of no return. This is the time to take courage and act. How can the moment be realized?”

“Perhaps carbon-sucking unicorns are actually hiding in Area 51¹²⁸ somewhere,” quipped someone. The long dead silence recognized the joke as a lead-balloon.¹²⁹ Then, “If the world will not respond to the climate crisis, except to wait for miracles, and if the world must be pulled out of its torpor by some awakening alarm, how can any alarm be made to happen?”

“Perhaps, you had the right idea with the Hydra-Headed Dragon.” Again, a long silence, broken by one of the narrators.

¹²⁸ Wikipedia, “Area 51,” en.wikipedia.org/wiki/Area_51.

¹²⁹ An unwelcome situation; a failure or unsuccessful situation.

“What does that mean?”



“You used the Hydra-Headed Dragon to pictorially represent the many-headed and interconnected crises you humans face, with the climate crisis one of those heads, right?” asked Sophia. “But, the interconnected crises are not seen, at least not seen as important enough so that your country and culture is responding to them. Can you make the crises seen and felt so that the Dragon is seen and felt?”

“Is there a way to pull your nation’s people out of the fantasies of never-never land and bring them into Reality? By Reality, I mean objective and verifiable Reality; the Reality that exists outside of one’s belief system or worldview.¹³⁰ “Humans have many belief systems, maps of reality¹³¹ itself, and beliefs about how reality should be—which we can call values. Of particular importance are the beliefs and belief systems that people have about how reality is supposed to be.

“Mental models of reality are developed by experience and habit, and they are set into place when a human is young. What is important to our interactions is that **reality for Americans was constructed when there was an abundance of almost everything necessary for daily life.** Americans take for granted things like the abundance of available food; abundance of metals, materials, and minerals to use in production, manufacture, and consumption in the economy; abundance of fuels to use in running the economy; and abundant available fuels to expand the economy; abundant places to send the detritus or waste of the economic system—called waste sinks, and so on.

“**The simple belief of most all Americans is that the only limit on what they can buy, own, or consume is the amount of money they have available for these things.** And most want more money to do more buying, owning, and consuming. Is this belief (that there is no limit to buying, owning, and consuming but available financial resources) a realistic and viable belief system? This is the world-view that animates your economic, social, and political systems. And it is part of your moral systems, as well. In your moral systems, there is no restraint on material consumption or ownership if you have the means.

“The Dragon-head of climate destabilization, means carbon fuels excess and requires dramatic restraint enacted to respond effectively. To consider restraint is invisible and contradictory to that primary American worldview. So, the belief is, and must be—within that world view—that continuing fossil fuel use and demand must be met by some techno-solution or can just be continued for the present, to be dealt with by another generation sometime in the future. That there is **always** more and **always** enough is ‘built-into’ the paradigm of the worldview. So, as compelling as the story you have told about the Tinkerbell-Effect is—from a

¹³⁰ For more on worldview, see the Glossary.

¹³¹ Reality, with a small r, as in “reality,” here is meant by Sophia as reality that is not able to be verified or objective.

data and factual point of view, and it is verifiable Reality—it is not perceived as what is real. It is not perceived or real, for Americans, despite the numbers and the corresponding models.

“There are no significant or substantive conversations, even among those in what you call the ‘climate movement’ about the true extent and degree of carbon fuels reductions needed in order to hold to international agreements. So, your climate movement groups are not proposing nor are they even discussing anything like reductions needed to meet targets. Your allies in the climate movement still believe that ‘renewables’ can fill the bill and that small reductions can work—when wind/solar/biomass renewables make up less than 2% of the energy mix¹³² and fossil fuel use is still expanding (and has through the 21st century more than the corresponding period in the 20th).”

One of the Tree of Life Team asked plaintively, “Is the situation just hopeless? Should we all give up and just accept that our climate will spin out of control before humans will be ready to respond? When it is too late?”

“Does Life ever give up on Life?” Sophia shot back. “Indeed, the situation is not hopeless, unless you continue to do what has not and what will not work, or if you continue to act as if the climate crisis or any of the legitimate crises you face can be adequately responded to within the current worldview and paradigm within which you all operate in your backward looking United States.

“So, **you must show that the worldview your nation operates out of is out-of-date, and fatally so.** It is necessary to awaken the reaction needed, which is the fight-or-flight syndrome, and extended fight-or-flight response¹³³ by a significant part of your country and culture. Worldviews are solid systems, they disintegrate and change if and only if there is a significant brush with death, a brush with mortality. This happens with a serious cancer diagnosis, a death of a spouse, sibling, or child, a job or career loss—things like these.

“That means you must cause stress to be experienced by your countrymen and women so that they can engage the general adaptation syndrome.¹³⁴ Hearing and feeling the ‘alarm’ is the first stage of the g-a-s.

“The degree of stress-arousal necessary for a change of worldview, a shattering of your out-of-date paradigm, and how to cope with this entire process is for further discussion. First, it is important to see that **without the stress of a brush with mortality, the alarm does not happen, and the worldview does not change. In that case, humanity and your nation would continue to do what it is now doing. It is your task to first display—incontrovertibly—that following the current worldview is fatal and that change is immediately necessary. The degree of change, the level of transformation must be seen and felt as comprehensive. The current worldview, the operating paradigm, the ways and means your nations uses to**

¹³² Kurt Cobb, “The Troubling Realities of Our Energy Transition,” Resilience.org, March 18, 2018, www.resilience.org/stories/2018-03-18/troubling-realities-energy-transition/.

¹³³ Wikipedia, “Fight-or-flight response,” en.wikipedia.org/wiki/Fight-or-flight_response.

¹³⁴ Wikipedia, “Stress (biology): General adaptation syndrome,” [en.wikipedia.org/wiki/Stress_\(biology\)#General_adaptation_syndrome/](https://en.wikipedia.org/wiki/Stress_(biology)#General_adaptation_syndrome/)

operate the dominating economic, social, political, and moral systems must be shattered and shattered quickly.

“Thus, you would be presenting the Kairos Moment for your species, and the opportunity for the degree of transformation that could lead to future viability and the metanoia¹³⁵ that goes with it.

“Let us discuss humanity’s Kairos and how to shatter destructive operating systems.”



Humanity’s depiction of Kairos, the God of Opportunity.

Image: modern sculpture, based on original Greek relief by Lysippos, 350-330 BCE.

¹³⁵ Metanoia means a transformative change of heart. Wikipedia, “Metanoia,” [en.wikipedia.org/wiki/Metanoia_\(theology\)](https://en.wikipedia.org/wiki/Metanoia_(theology)).

Interlude

Sophia continued, “It is necessary that the current operating systems, the dominant world-view, and the paradigms under which people operate must both be seen and felt as non-viable, impractical, and unfeasible—if viability of your species is important. The present defects that have emerged and become prevalent mostly in the last 50 years must be perceived and felt.

“The ways the future is thoroughly and comprehensively threatened must be seen and felt as incontrovertible. This might sound straightforward or simple, but it is critical and complex. You humans in the industrial world are expecting that you can continue your operating parameters along current lines without excessive depredations and disasters, and that is completely contradictory and delusional. I could explain in hundreds of ways, but that will not persuade. Explanations are not what is needed to alter world-views. The bankruptcy of the operating systems must be seen and felt as beyond dispute, incontestable, and irrefutable. Only then can the view of ‘what you are doing’ be seen.

“As you know, and as we have discussed, humans are now operating to self-destruct, and the climate is only one aspect of that self-destruction and ecocide. Tens of thousands of you, using straightforward and clear analysis that stands up to exhaustive review from skeptical critics, have explained this Reality over and over. You narrators mentioned it earlier in your story¹³⁶ before we met. But, it is not seen or felt by your normal intelligent human who is paying attention. Why is that?

“Yes, your scientists have explained the crises, and the explanations are improving continually, but the explanations do not translate to **understanding** in the larger culture outside of the limited scientific realm.

“The perception and belief, proven by your operating systems themselves is that you will be able to continue your fossil fuel path, reduce sometime in the future, and that some ‘miracle technological fix’ will come along to suck your polluted carbon from the air before your climate system is broken. This is nonsense. Or, some of you believe that the current system can be maintained because ‘renewables’ or some other low carbon technology will be installed that can displace fossil fuels and the industrial system can continue without comprehensive catastrophe resulting. This despite the fact that the ones you have to install are not displacing fossil fuels and cannot completely. Moreover, anything not yet proved will be, by necessity,¹³⁷ too little and too late.

¹³⁶ William J. Ripple, et. al., “World Scientists’ Warning to Humanity: A Second Notice,” *Bioscience*, Volume 67, Issue 12, December 1, 2017, pp. 1026–1028, doi.org/10.1093/biosci/bix125.

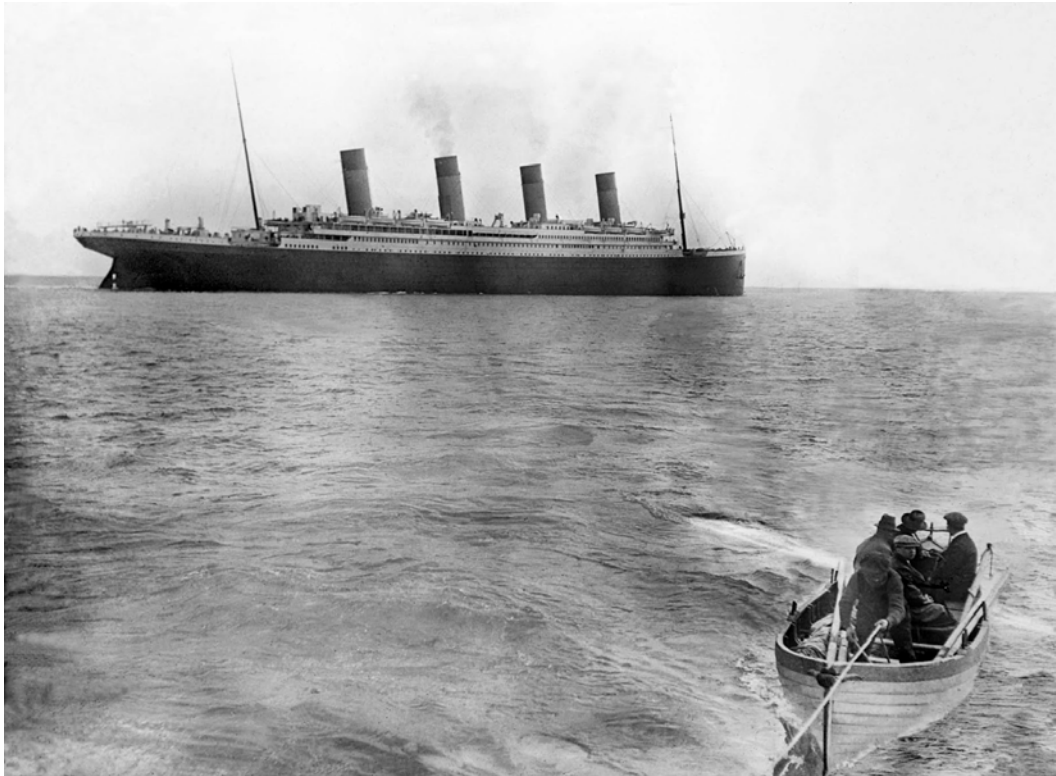
¹³⁷ Given the heat ceiling limits of 2°C, if a very low carbon technology has not been demonstrated to work, and work economically, and able to work at scale, then “by necessity,” they are too little and too late. At this point, in Spring 2018, there are no very low carbon technologies, that meet this “proven” criteria except the current portfolio of “renewables,” i.e., solar, wind and hydro, and closely related energy systems.

“The mistaken mythologies of the fossil-fueled industrial economic production and consumption systems continue because they have not been shown to be disastrous and self-destructive to normal people **now**.

“Therefore, it is your task as narrators of the story to show convincingly that the “ship-of state” is crumbling; that current industrial systems are inevitably moving toward near-term disaster; and that comprehensive collapse can be seen on the horizon.

“The sinking ship-of-state should evoke the Titanic.

“If you humans survive this time period, it will be recalled as full of classic tragedies, as the story of the Titanic evokes. Your nation is characterized by hubris. Hubris—an excess of pride and confidence—is central to any classical tragedy. The *Titanic* set-out from Queenstown, Ireland, on April 11, 1912, as a grand symbol of modernity and comfort. As she steamed at high speed through the dark of night, her captain ignored the Cassandra-like warnings that icebergs lurked nearby. Through hubris the ship collided with one and she met her fate.



The last known photograph of the Titanic, taken the day she struck her fateful iceberg, 1912.

“Remember your Dragon. People in your nation not only do not see the many interconnected heads of the Dragon, but they do not see the Dragon has the US in its grip. When they look up from their perspective, they only see the belly of the Dragon, which may look like clouds. You must cause your nation to see the Dragon, and to do that, to look from the perspective you have depicted—from an astronaut’s perspective.

“Cause a visual and visceral reaction to the Dragon that has your nation in its grip!”



Jean Arnold

Reaction to Sophia

We, the narrators, were beginning to understand what Wisdom was saying, what she was trying to communicate. We were absorbing several realizations just at this point in the story.

We understand that **it is necessary to present a more comprehensive view of the interconnected crises we face. Then to present them in a way so that they “cannot fail” to be perceived and felt.** We can connect the delusions we operate under as parts of the Hydra-Headed Delusion Dragon that afflicts industrial humanity and paint a picture that looks at the Dragon from “an astronaut’s view,” not up at the “belly-of-the-beast.” Clearly shown, our society may then be able to feel the fury of the Dragon’s fossil fueled fire.

Part 6

Making Our Hydra-Headed Dragon Delusions **VISIBLE** and **VISCERAL**

Humanity's iron hands squeeze slowly and inexorable around Life's neck while Human minions chop away at the roots of the Tree of Life. This Tree contains all of us. While we talk stewardship and think wise use—waste and ravage are our typical treatment for living systems, and pollution laced with poison is typically what our Life-Support Systems now experience. Yet, Life's exploiters, humans—for the most part—do not feel, nor do they see the damage of their own actions.

In the severe bottleneck and the teeming overshoot¹³⁸ in which we live in 2018, this Part 6 in the "Hydra-Headed Delusions" story will make the plunder and overshoot both **visible** and **visceral**. In the middle parts of the story, we narrators were able to encounter a speaking embodiment of Wisdom, names Sophia, a vital, but benign pneuma.¹³⁹

Carbon pollution and our fossil fuel overshoot crises are neither seen nor felt presently, so they are ignored as we continue the economic, social, political, and moral (ESPM) systems that are intrinsically designed to bring about complete catastrophe. Designed in the 18th and 19th centuries, they are no longer systems that we can operate by—now that we have overfilled our Earth with people and now that we are overconsuming her Life-Supports.

On one hand, we beg for techno-miracles, and on the other, we obscure Reality with the wrong premises and incorrect data sets. As the massive Sumo wrestlers circle each other endlessly, grunting and growling—one a 600-pound climate denialist, one a 599-pound climate hawk¹⁴⁰—the gridlock and groanlock related to climate stabilization is embodied. No one wants to pay any mind to the charade. A shriek in the arena: "a pox on both tribes, let's find another show," as the exhausted audience leaves to find other grisly distractions. Mass murderers are much more interesting!

In other words, we are unable to see or to feel the delusions we operate with related to flamed carbon.

This part of the story illuminates what needs to be made visible so that the comprehensive nature of the crises can be perceived. Simultaneously, the crises must be felt.

¹³⁸ When a population exceeds the environment's carrying capacity that population is in overshoot. Global overshoot occurs when humanity's demand on nature exceeds the biosphere's supply, or regenerative capacity. Such overshoot leads to a depletion of Earth's life supporting natural capital and a buildup of waste. At the global level, ecological deficit and overshoot are the same, since there is no net-import of resources to the planet. Local overshoot occurs when a local ecosystem is exploited more rapidly than it can renew itself.

¹³⁹ Pneuma is an ancient Greek word for breath that can also mean "spirit" or "soul."

¹⁴⁰ A Climate Hawk is a person who understands that climate change is a threat to our safety and security. Climate Hawks favor taking aggressive action to neutralize the threat.

Breaking

the climate system, steaming past heat ceilings—what we are now collectively doing— in itself may end the human project. To continue to over-consume our ecological Life-Supports can end us as comprehensively. Both must be addressed simultaneously and systemically. Too few of us perceive either crisis, fewer feel they are personally impacted by either.

Of course, **the Dragon-Hydra obscures reality and keeps too many steeped in the cultural consumption trance.**



Then, how will the crises plaguing us be made visceral and visible?

Wisdom's Warning

Sophia W.: “You story tellers need a toolkit in this Part of the tale so that those who hear the story can convert it into visual ‘screwdrivers’ that can tighten a human understanding and feeling about what is being done to the Earth and her mortal creatures. These ‘tools,’ cannot be presented simply as ‘data, numbers, and quantities.’ Those kinds of tools **FAIL** to register! They are neither seen nor felt.

“Humans have limited capacity to absorb information and implications, particularly if the information does not immediately affect them in their personal lives. Yes, H Sapiens, as you call yourselves did get ‘foreknowledge’ ability, along with the big brain, but it is a large perceptual system built upon the more urgent fundamental parts of the brain, and these ‘reptilian aspects’ are more immediately dominant for both individuals and groups of humans.



Jean Arnold

“Your modern industrial societies construct happiness set-points that are maintained in consumption and gratification habits—disregarding mountains of warnings.¹⁴¹ The implications are quite complex, because it is not pleasure-bound, thus difficult to follow, but the implications for your survival are critical. It is one major reason that the clear and straightforward information about your looming collapse is largely ignored.

“So, the information must be tied to a ‘gut-wrench’ that moves and motivates, while at the **same time** gives people response alternatives that they can take very soon after they perceive and feel the crisis.

¹⁴¹ Happiness or hedonic set points refer to the observation that a person's long-term happiness is not significantly affected by otherwise impacting events. A very similar concept, the hedonic treadmill is the observed tendency of humans to quickly return to a relatively stable level of happiness despite major positive or negative events or life changes. For example, as a person makes more money, expectations and desires rise in tandem, which results in no permanent gain in happiness. For more, see Wikipedia, “Hedonic Treadmill,”

Response alternatives presented quickly are required so that humans do not simply discard survival information that is repulsive to the “quick-happiness” part of your brains.

“This is critically important. The survival warnings must be connected to responses that can be accomplished in short order so that they are not ignored. Once the survival mechanism is triggered, with the fight-flight arousal system, humans must respond while aroused, or be given response alternatives that correspond to the threat stimuli.

“Expect that these visual and ‘gut-wrenching’ examples that follow to be difficult to absorb, even for people who are the most farsighted, aware and caring. These caring and aware individuals need to be given responses that relieve the repulsive perceptions of these warnings, and that must be the aim of the conclusion sections of the story.

“Use the ‘screwdrivers’ carefully, if you are one of the people able to care genuinely about your survival, because they are loaded with pain and horror. The strong tendency for all of you is to reject the information and to discard it, becoming unconscious, and then be part of the self-destructive industrial systems heading off the cliff to oblivion. You are attempting to move the story toward a culture wide emergency alert alarm, to activate an ‘emergency alert process’¹⁴² that short circuits the normal operating patterns of the US and the wealthy world so that a different set point can be initiated and substantiated.

“Be careful with your tools, use them wisely!”

Mother Earth’s Cornucopia: Lessons of Abundance and Scarcity

What follows are the narrators’ responses to Sophia’s suggestions related to constructing tools so that the crises can be seen and felt by enough humans to have a possibility of collective responses that are conducive to a complete course correction, a reconstruction of our ESPM systems.

To illustrate the crises and to make them palpable, the first simple information set that makes the climate chaos, overshoot, and over-consumption painfully obvious, the ecological footprint is used. A widely accepted “gold-standard” measuring tool, the ecological footprint measures the “load” imposed on nature, in this case the land and production of the US, by its people. This makes the overreach of the US more tangible. Ecological Footprint analysis determines the ecological abundance/scarcity ratio for nations and can do the same for all of humanity.

Scarcity has accompanied civilization from its outset, as was stated and re-iterated by the Enlightenment philosophers.¹⁴³ The one great exception has been the last 300 years with the discovery of the New World, Oceania,¹⁴⁴ and virgin resources like Middle-East oil. Abundance

en.wikipedia.org/wiki/Hedonic_treadmill.

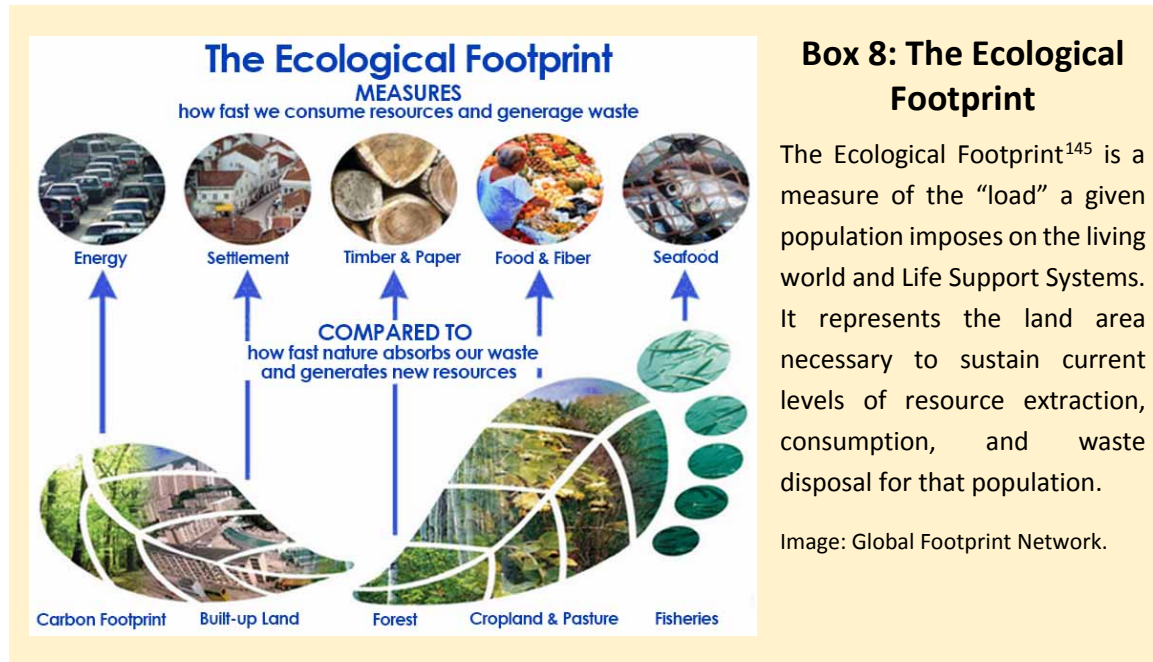
¹⁴² Federal Communications Commission, “Emergency Alert System,” www.fcc.gov/general/emergency-alert-system-eas.

¹⁴³ Appendix III contains discussions of ecological abundance and scarcity drawn from William Ophuls’ 1992 edition of *Ecology and the Politics of Scarcity Revisited*, subtitled *The Unraveling of the American Dream*.”

¹⁴⁴ Oceania is a geographic region comprising Melanesia, Micronesia, Polynesia and Australasia. See: Wikipedia, “Oceania,” en.wikipedia.org/wiki/Oceania.

displaced scarcity, particularly during the 19th and 20th centuries. Now, with just one-sixth of the 21st century extinguished, we face scarcity yet again. Ecological scarcity in 21st century terms.

So, consider the infographic below:



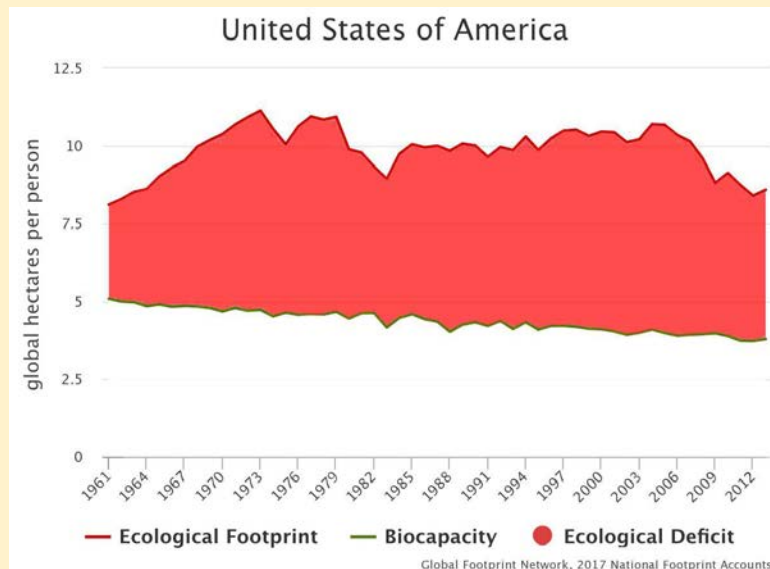
Mother Earth’s only “income” coming from outside of her is sunlight, which powers material cycles and the Web of Life. Economic activity is therefore ultimately constrained by the regenerative capacity of the ecosphere. This “circle of Life” thus becomes crucial for the world’s Ecological Footprint, and for the ESPM systems humans operate by measuring the total land area necessary to support a given population load means that if the “footprint” is less than one, there is an ecological (services) “reserve.” A measure of more than one means an ecological deficit. At precisely one, for example, holding that measurement into the future, that nation could live sustainably and durably far into the future, using what Mother Earth could renew, or yield each year.

Balance is an ecological footprint of one.

Zero in on the US, whose footprint is more than two. Consult the data from the Ecological Footprint Network:

¹⁴⁵ For more about the Ecological Footprint, see Glossary.

Box 9: Ecological Footprint vs. Biocapacity for USA



This graph¹⁴⁶ measures the annual biological capacity “load”¹⁴⁷ put upon the US by its population, per person, 1961-2012. Americans consumed about double the country’s natural “yearly income” in order to “enjoy” their lifestyles. Therefore, enormous natural capital of the nation is destroyed, degrading overall biocapacity and Life Support Systems for future years. Biocapacity declined almost every year through 2012. With extraction, consumption, and pollution continuing—anything like current rates—collapse is inevitable. At its interactive site, Global Footprint Network¹⁴⁸ provides information on the growing ecological deficit for the USA.

Simple Implications

Consider the United States’ economic, social, political, and moral operating systems, its ESPMs: Now taking twice as much as Mother Earth can provide for US citizens each year means the US is spending twice the income that the US gets each year. Thus, two areas the size of the US are necessary to support current US lifestyles. This is a simple notion. US citizens are taking, producing, consuming and polluting twice as much as the Earth can provide and absorb each year. **It is like spending twice one’s income year after year, as excess spending has been going on for decades. How long would it take for an individual spending twice their income each year before they would be bankrupt?**

Bankrupt here corresponds to collapse, and collapse is where the current operating systems are leading.

So, taking twice the “income” in materials, minerals, and productivity of the US each year means that the people of the US face collapse in the near future (how many years cannot be practically calculated), or the US would have to double its productive land to use for its lifestyles. Since the human population

¹⁴⁶ Global Footprint Network, “Country Trends: United States of America – Ecological Capacity vs Biocapacity (gha per person),” data.footprintnetwork.org/-/countryTrends?type=BCpc,EFcpc&cn=231.

¹⁴⁷ For more about biological capacity, see Glossary.

¹⁴⁸ Global Footprint Network, www.footprintnetwork.org/.

as a whole is using more than the entire land area of the Earth gets in income each year, then there is no additional US land area now not utilized that could be taken by the current US population.

A large portion of the overuse, which is leading toward collapse, is the excess use of fossil fuels, because the Ecological Footprint measures waste when it considers use in the analysis. The reason is because there must be areas in which waste, pollution and poisons need to be placed, i.e., in pollution or waste sinks.¹⁴⁹

Extreme overshoot, the current modality of US operating systems, means collapse is in store for the US.



Easter Island is a cautionary tale about ecological collapse. Giant humanoid statues pose, but no trees remain. Islanders consumed the basis of their biological lives; deforestation was the island's death knell.

Photo: Lee Coursey, flickr, CC-by-2.0.

Sophia W.: "You narrators used the Ecological Footprint to illustrate the overuse of your US and the need for another US to support US citizens in their current consumption patterns. This may be of limited value to communicate because its meaning is abstract and its warning is not timely. It does not make the warnings urgent nor does it suggest any way to resolve the situation.

"US environmental groups have been exhorting their fellow citizens to reduce their ecological footprints for the last 25 years, and it has produced only frustration, since the ecological footprints have continually increased, as your graphics describes, i.e., they have continually gone in the wrong or increasing direction, not in the direction of what the Earth can lastingly

¹⁴⁹ NASA, "Environmental Sink Services," www.hq.nasa.gov/iwgsdi/Environmental_Sink_Service.html.

provide. Interesting that humans can continue to argue for results over and over and over again, year after year, get no results, and then still continue to make the argument.

“That is one glaring weakness of the big human brain. It can ‘know’ something and still produce no results from that knowledge. That is a long subject and I will not continue at this point, since fruitlessness is not a Wisdom trait.

“**The information conveyed by the Ecological Footprint measurement is of value if it can be felt and quickly used.** Deeply felt, a present danger or crisis, the fight-flight system aroused, then used immediately. Keep this in mind as the story continues.”

Cracking the Lens: Making Overshoot both **Visible and **Visceral****

Any way we measure the burden we place on Mother Earth, it comes out that we are taking too much, and polluting too much. Yet, this is not **visible** to the average person, nor experienced as a “clear and present danger.”

Despite the overwhelming evidence of Eco-Footprint overshoot, year-on-year, of massive carbon fuels pollution, and of similar existential threats—convincing depictions of the slow strangulation of Life that lead to immediate and effective actions are still woefully lacking. For a culture accustomed to decades of abundance and ecological excess, **exposing the new world of shortage and of coming collapse is**

Who wants to cope with threats when delicious and reinforcing gratification is everywhere and always available?

pointing to information that few wish to see and fewer want to grasp. Who wants to cope with threats when delicious and reinforcing gratification¹⁵⁰ is everywhere and always available?

Threats and dangers are meaningful if, and only if they can be responded to quickly, before a perceiving individual returns back to an equilibrium. So, what the story tellers have come to realize is that the threats and dangers, with their warnings need to be accompanied by an alarm system. This “klaxon alarm system” needs to supersede other stimulations. Quickly following the alarm, there must be a response that individuals can make to deal with the arousal stimulus before it abates into the background.

Like disaster preparedness, a piercing alarm needs to accompany instructions about what to do and where to go as a result of the warning. The warning needs to be shrill enough, piercing enough in order to supersede regular and normal operating. Then people hearing the warning need to know where to go to get more information and then receive instructions about what to do. The warning system must be incontrovertible, like the Nazi invasion of Poland became incontrovertible, and the Pearl Harbor attack was incontrovertible.

Meanwhile, the cultural narrative of the more-wealthy and developed world—the 20% steeped in the wonder-world of innovation and technology, with viewing screens multiplying faster than over-sexed

¹⁵⁰ The state of being gratified; great satisfaction.

rabbits—is based on abundance, progress, and limitless consumption. And, who questions endless economic growth as a necessary part of developed-world entitlement? A continually growing economy does not countenance a finite world. Versions of the American Dream¹⁵¹ still predominate.

So, the cultural narrative, the story the wealthy world “lives” is some variant of “consumption makes meaning and happiness.” That dominant narrative must be shattered and replaced.

However, the lens framing the current story seems polished and clear. Where will the crack in the frame come from? It’s time to work with startling illustrations that can readily cause us to “see” and “feel” what we are doing. Three clear examples follow.

Sophia W.: “Keep in mind that your examples are tools. By that I mean they are to be used in the proper circumstances, carefully considering the circumstances in which they are described, context is critical. Humans probably need to be prepared, particularly when presenting in person to a live audience.

“They can be important and powerful tools if used judiciously!

“For example, many humans could be overwhelmed by any one of these examples and could go unconscious unless there were some specific follow-up employed with their use and their display. Even the most caring and conscientious human person could scarcely hold these three examples and their meaning in their mind’s eye at one time. The reason is that if a person is given information about a coming disaster, like they are in disaster training, which prepares humans for disasters that they perceive are likely, then the example of the disaster scenario includes a clear and detailed disaster response. These disaster scenarios do not do that in any way that makes the responses visible. They are powerful evidence for predicting disaster is imminent, without explaining how to effectively respond.

“Therefore, use the following parts of the story with the warning that most everyone reviewing these would need to know what one would do to deal effectively with the implications of the specifics that are being presented.

“The way humans are designed, is that if their fight/flight arousal system is engaged, then a response alternative is needed to be present also, so that the individual does not either freeze or reject the information. This cannot be over-emphasized!

“The Truth of the matter is that human economic, political, social and moral systems are completely unprepared for this (relatively) new information—that humans have, in the last 50 years of your history, gone beyond the structures of those systems and exploded past their boundaries.

“Constructing new boundaries related to the perception and understanding of these new Realities is certainly a primary human task. Before construction, however, comes the perception and understanding. What I am pointing to in the case related to these tools and

¹⁵¹ Writer James Truslow Adams popularized the phrase “American Dream” in his 1931 book *Epic of America*: “...that dream of a land in which life should be better and richer and fuller for every man, with opportunity for each according to his ability or achievement.”

examples is that the coming disasters need to be understood, perceived, and felt before the responses can be generated. This story must climax with those responses and how they are promulgated, but until and unless the gravity is appreciated, then what responses you suggest will not make sense.

“The gravity of the situation, the personal impact and the response alternatives all interconnect. Recall that your President Franklin Roosevelt campaigned as a semi-isolationist in 1940. Roosevelt, acutely aware of strong isolationist¹⁵² and non-interventionism¹⁵³ sentiment, promised there would be no involvement in foreign wars if he were re-elected. Just 9 months into his next term, the gravity of the threats, the personal impacts, and the responses were aligned when Japan made all of those connections for the US on December 7th, 1941. The gravity of the situation aligned with the fight/flight of the US and the responses needed were clear because of one event: Pearl Harbor.

“Threats are hard to digest because they demand a different response than simple digestion. Know, however that this story must end with those necessary response alternatives so that the information can be digested then, if not before.”¹⁵⁴

Visible and Visceral

A promise of this story is to clearly illuminate the disastrous delusions and contradictions we operate under. Then, to show how it is essential that we respond to these crises immediately once the threats are made **visible** and visceral. **Our American Revolution can be used as an analogy. Then, no one, not even Thomas Payne could envision what type of governance would result once England’s stranglehold was broken. What system would result, in the American Revolution was derived from countless “conversations”¹⁵⁵ among the most interested Colonists—whom we now call our Founding Fathers.**

Today, we would never expect founders and leaders to be of one gender. Moreover, the feminine perspective of nurture and care is deeply needed. What we can predict, as was born out in the last century by the dozens of peaceful transformations worldwide, is that a minority of US population will need to be engaged and involved in that transformation. **Transformation need not involve a majority of us—it never does.**¹⁵⁶

But, it is necessary that a large number of us awaken to the felt horror of what we are doing to ourselves, to our living world, and to our Life-Support Systems. Awakening must be clear and

¹⁵² Isolationism is a category of foreign policies institutionalized by leaders who assert that their nations' best interests are best served by keeping the affairs of other countries at a distance. One possible motivation for limiting international involvement is to avoid being drawn into dangerous and otherwise undesirable conflicts.

¹⁵³ Non-interventionism is the diplomatic policy whereby a nation seeks to avoid alliances with other nations in order to avoid being drawn into wars not related to direct territorial self-defense.

¹⁵⁴ Responses to the visceral and visible crises elaborated in this Section are provided in Part 7 and beyond. The responses do not “feel right” however, until and unless the crises are perceived and felt, and the alarm is sounded.

¹⁵⁵ The word conversations is used in its widest connotations, including writing, reading, meetings, preparations for events, thinking and reflecting about related ideas, etc.

¹⁵⁶ Social movement scholar Erica Chenoweth found it only takes 3.5% of citizens, impassioned and involved in an issue, to bring substantial change to a political system. Erica Chenoweth, “My Talk at TEDxBoulder: Civil Resistance and the 3.5% Rule,” Rational Insurgent, November 4, 2013, rationalinsurgent.com/2013/11/04/my-talk-at-tedx-boulder-civil-resistance-and-the-3-5-rule/.

convincing. It must be quickly accomplished, given modern attention spans. Then response alternatives provided immediately.

Take a look at this story's first example of this "sudden awakening." In a video titled "Open Your Eyes," the horror and disgust of our collective despoilation is shown in less than 4 minutes: www.youtube.com/watch?time_continue=235&v=9znvqIkIM-A.

Another approach to seeing and feeling the horror and disgust is to go to this webpage "WHEN THE MERMAIDS CRY: THE GREAT PLASTIC TIDE" and simply scroll down for about four minutes through the pictures: www.plastic-pollution.org/.

Perhaps after either of these **visible**/video/photographic tours of this worldwide crisis, an individual could come back "up for air," take a deep breath and consider just four things:

- The average American throws away 185 pounds of plastic per year, almost half a pound a day. Add to that, we have produced more plastic in the last ten years than we did in the entire 20th century, and we didn't have plastic before that to "throw-away."
- A million plastic water bottles are purchased worldwide each **MINUTE**. And, Americans will consume about 50 billion plastic water bottles annually. The vast majority are not recycled, but simply discarded. The average American used 167 "disposable" plastic water bottles last year, and only recycled 38.¹⁵⁷
- Plastic constitutes approximately 90 percent of all trash floating on the ocean's surface, with 46,000 pieces of plastic per square mile. Over a million sea birds and over 100,000 marine mammals are killed annually from plastic in our oceans. (And these deaths are only the ones we can count. None of this should be a surprise because in your lifetime, Dear Reader, the ocean is likely to contain more plastic than fish unless we stop plastic in its plastic tracks.)
- Without intervention soon, the amount of plastic littering the world's oceans is expected to triple within a decade, a new report shows.¹⁵⁸

Create your own show! Anyone with ten minutes and modest interest can find a video, photographs, or a short story to expose our plastic horror, shame, and disgust. Here, plastic exemplifies how and why we are destroying our living world and our Life-Support Systems. Plastic simply provides the pictures, the story, and the disgust to show the deep and dramatic damage to Life and to all humans. We are doing it to ourselves.

The monstrosity of our plastic pollution—created in one human lifetime and literally covering our planet and oceans—must cause us disgust and shame. Smell is a "feeling" sense, and young animals are "house trained" quickly when they can see and feel the personal consequences of their own bodily waste. Similarly, our revulsion to our plastic mania can cause motivated action to stop this plastic mania, if we are pressed. Most anyone can see and feel the horror, it is beyond doubt and beyond dispute.

¹⁵⁷ Ban the Bottle, "Bottled Water Facts," www.banthebottle.net/bottled-water-facts/.

¹⁵⁸ CNN, "Ocean plastic predicted to triple within a decade," March 21, 2018, www.cnn.com/2018/03/21/health/ocean-plastic-intl/index.html.

The suggestion is that plastic is the obvious excess and excessive waste that can overcome indifference and the consumer trance. It is the motivating issue that can point out how we are destroying so much, even ourselves. It connects the dots to our other overshoot problems; it directly connects to the climate crisis; and it exquisitely elucidates scarcity.

It can be used to drive a cultural conversation that begins to elicit dramatic transformation. Using it now and using it powerfully can enable us to stop our extinction express before we shoot off the cliff. Plastic ironically clarifies the other crises and displays the bankruptcy of our current ESPM systems.

Just as a half-century ago when plastic was what was whispered to a young man as his bright future,¹⁶⁰ we can now scream it as our apocalypse. Because in one human lifetime, it has spread everywhere, it is the omnipresent pollutant no one could have expected to cover our world in the 20th century. Now it's crystal clear. We wanted to create a wonder-world; instead we are creating a waste-world. It is high time to stop, turn around, and clean up. If we want any future at all.



On Midway Island in the Pacific Ocean, far from the centers of world commerce, an albatross, dead from ingesting too much plastic, decays on the beach; it is a common sight on the remote island.

Photo: © Chris Jordan, courtesy of Population Media Center.¹⁵⁹

The klaxon alarm system is needed, plastic demonstrates it everywhere in wealthy world. And it is exported shamelessly to those not yet industrialized.

Nothing Matters but Us!

Now for our second wrenching example to help crack the lens of the current narrative, that explodes the prevailing worldview and makes mincemeat of the dominating paradigms.

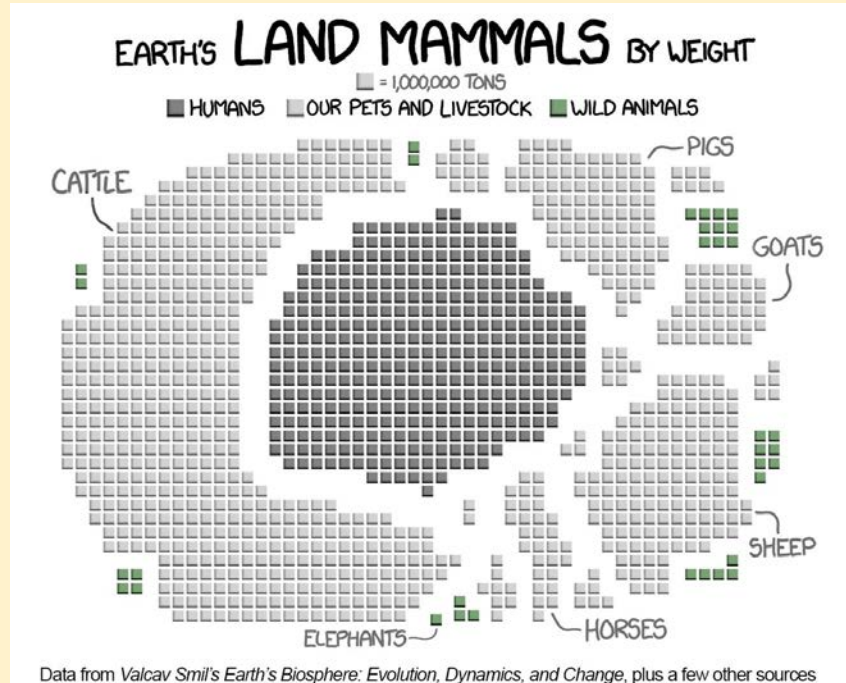
Sophia W.: “Remember that these examples must accompany effective responses. Those response alternatives must come next.”

Consider the following graphic: humans and our livestock-pets now comprise nearly all the mass of land mammals, while wild mammals such as elephants, sea otters, and jaguars cling to the very edge of existence.

¹⁵⁹ Population Media Center, www.populationmedia.org/.

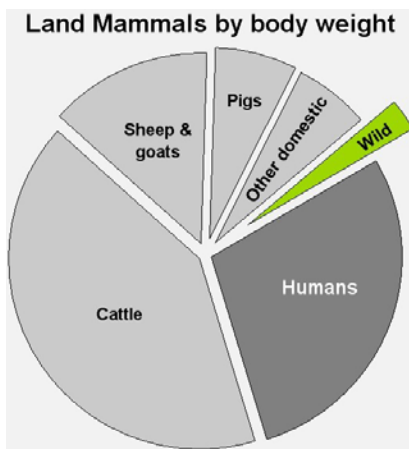
¹⁶⁰ Scene from the movie *The Graduate*, www.youtube.com/watch?v=eaCHH5D74Fs.

Box 10: Humanity Consuming the Biosphere



Humans (dark gray squares) and our livestock-pets (light gray), now comprise nearly all the mass of land mammals, while wild mammals (green) cling to the very edge of existence. The graphic is drawn from the work of Vaclav Smil. A chapter of Smil's book *Earth's Biosphere*, called "Harvesting the Biosphere," (which could be subtitled, "Humanity Consuming the Biosphere") is linked below.¹⁶¹

Image source: Explain xkcd.¹⁶²



A few of the gruesome details related to the graphic, and also drawing from *Earth's Biosphere*, can be highlighted. (Admittedly, gruesome is "in the eyes of the beholder," but try to view this from the perspective of all mammals except humans and their livestock.)

It is important to absorb this information slowly because the totals are incredible. First, humans were a tiny part of total mammals until the Industrial Age. Then, sometime in the 19th century, the total mass of humanity reached the total mass of wild mammals. By the beginning of the 20th century, the total weight of humanity was more than 200% of that of wild animals.

¹⁶¹ Vaclav Smil, "Earth's Biosphere: The Human Impact," vaclavsmil.com/wp-content/uploads/PDR37-4.Smil_pgs613-636.pdf.

¹⁶² An explanation of the graphic can be found here: Explain xkcd: "1338: Land Mammals," [www.explainxkcd.com/wiki/index.php/1338: Land Mammals](http://www.explainxkcd.com/wiki/index.php/1338:Land_Mammals).

Livestock and pets add more tonnage to the one-sided scale. At about 1900, livestock and pets represented about 3 times the total mass of wild mammals. By 2000, the total had swelled to 25 times the wild weight. Now, humans and our domesticates are more than 98% of the mammal weight on our Earth, while wild mammals comprise less than 2% of the total. This profound shift, from a wild mammal world to a human and domesticated one has occurred just during the industrial age. Consuming the wild mammals indeed!

If humans do not see this animal genocide as a horrible crime, what would all of the rest of the non-human mammals call it? What would they say to the ecocide portrayed in the Living Planet Report: Executive Summary¹⁶³ or complete publication.¹⁶⁴ Alternatively, the Living Blue Planet Report,¹⁶⁵ which reveals a similar plummet in our sea-dwelling companions. All done by human hands.

Here, the purpose of these gruesome graphics and their explanations is: (1) to provide another tool to point out how ecocidal humans have been; and (2) to rip-apart the delusion, when it comes to those we share the planet with, that we can continue to do what we have been doing for even another few years, much less for the next generation or two. Thus, helping to shatter the current story, narrative, and world-view.

The story continues with the third delusion-breaker.

¹⁶³ World Wildlife Fund, "Living Planet Report 2016: Summary," awsassets.panda.org/downloads/lpr_living_planet_report_2016_summary.pdf.

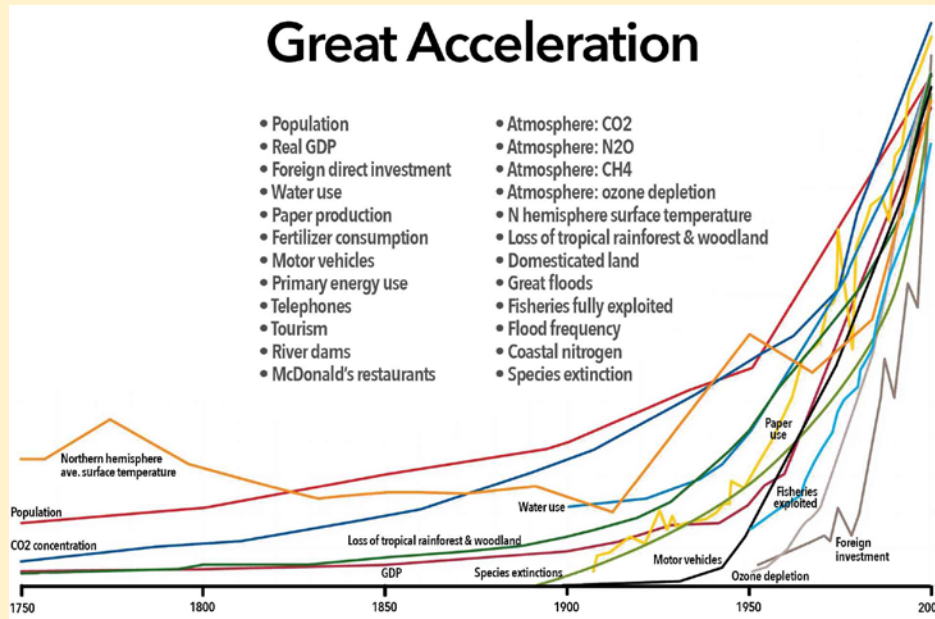
¹⁶⁴ World Wildlife Fund, "Living Planet Report 2016," wwf.panda.org/about_our_earth/all_publications/lpr_2016/.

¹⁶⁵ World Wildlife Fund, "Living Blue Planet Report 2015," www.worldwildlife.org/publications/living-blue-planet-report-2015.

The Great Acceleration: Pedal to the Metal

The shocking plummet in mammalian wildlife is consonant with many upward trends that combined, can be called “The Great Acceleration.” A short description follows:

Box 11: Acceleration of Trends Since Mid-Twentieth Century



The second half of the 20th century is unique in the history of human existence. Many human activities reached take-off points sometime in the 20th century and sharply accelerated towards the end of the century.

The last 60 years have without doubt seen the most profound transformation of the human relationship with the natural world in the history of humankind.

The effects of the accelerating human changes are now clearly discernible at the Earth system level. Many key indicators of the functioning of the Earth system are now showing responses that are, at least in part, driven by the changing human imprint on the planet. The human imprint influences all components of the global environment—oceans, coastal zone, atmosphere, and land.

Source: International Geosphere-Biosphere Program, “Great Acceleration.”¹⁶⁶

Image: Adapted from *New Scientist*, 16-10-09.

Spend a minute or two with the Great Acceleration PowerPoint¹⁶⁷ that displays the human-driven impacts related to our Earth, her resources, living systems, Life-Support Systems, and more. These astoundingly burgeoning impacts predict collapse. We just don’t know exactly when. But, the trends and graphics are designed here to cause the reader-viewer both to see clearly and to viscerally feel

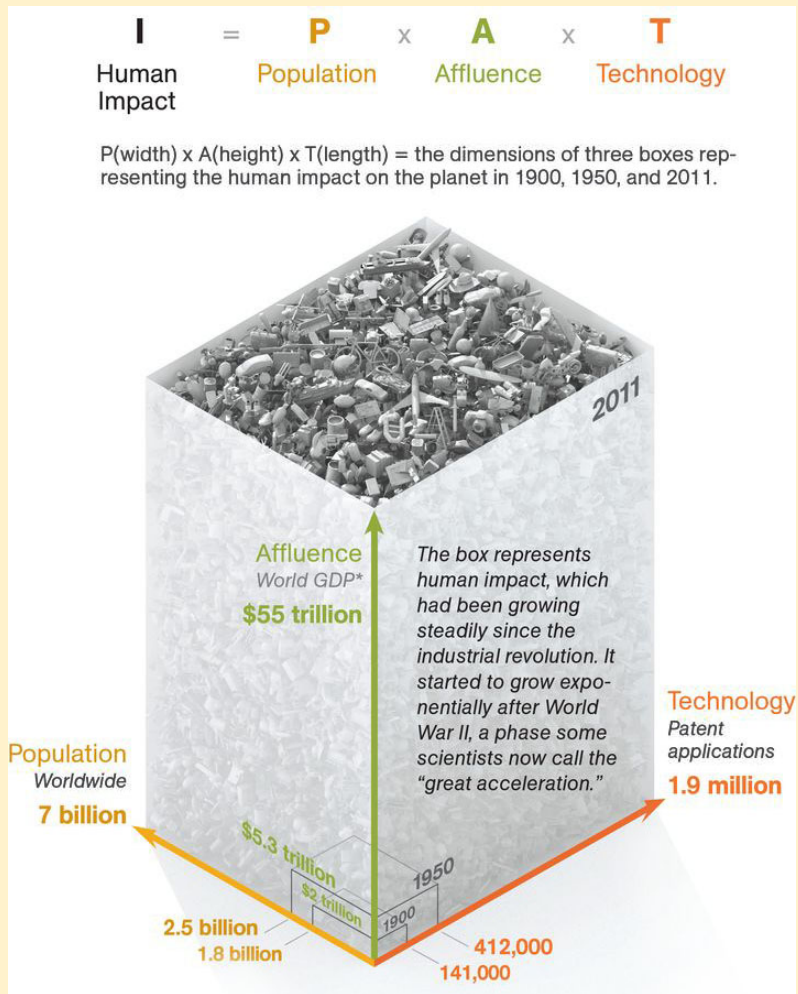
¹⁶⁶ International Geosphere-Biosphere Program, “Great Acceleration,” www.igbp.net/globalchange/greatacceleration.4.1b8ae20512db692f2a680001630.html.

¹⁶⁷ International Geosphere-Biosphere Program, “Great Acceleration SlideShare,” www.slideshare.net/IGBPsecretariat/great-acceleration-2015.

how disastrous are our current extraction-production-consumption-waste habits. The assembly-line ravenous and relentless overuse and overshoot must be halted and our Earth-overuse put back into balance with Earth-regeneration. Anything resembling the current pathways and habits—our present treatment of our Earth and what we extract from her—will mean consummate catastrophe, and soon.

A final graphic summarizes both our collective overuse and the impossibility of continuing to do what we are currently doing economically, socially, politically and morally.

Box 12: Human Impact in Three Dimensions



This pictograph summarizes several accelerations that show how the industrial system, as it now operates is over-stuffing the world with production and waste. It shows that humanity, our Life-Support Systems, and much of Life itself will drown in over-production, over-development, and overshoot. Note that the big-box has since expanded significantly since this 2011 picture.

Source: National Geographic, March 2011

New Operating Systems

The stories we tell ourselves, the cultural paradigms that represent the water we fish swim in, change slowly until they no longer work. It is easy then to ignore coming disasters, even though we may acknowledge their looming reality. Most people continue to use vast amounts of fossil fuels, and to consume far more than our happiness requires, even though we are aware our excesses will have dark consequences down the road. The future is “discounted”¹⁶⁸ by all of us, not only by economists.

The intent is to “show” the tragedies being enacted and to induce feelings of rejection so that current operating systems can be discarded and viable operating systems can be instituted.

There is no evidence-based, rational way that we can continue current operating systems—taking twice what Mother Earth can maintain, sustain, regenerate, supply to us without exhaustion. These are delusions, multi-faceted and interconnected. Yet **facts alone will not move or change dominant human behavioral patterns or habituated cultural perspectives.**

The purpose of these examples is to induce a “felt-sense” of disgust, horror, and revulsion, related to our actions and activities that are causing the current and impending disasters that face us. In the first case, plastic is the fundamental visual and visceral manifestation of our delusions; and in the second, the narrators show that humanity is chopping away at the Tree of Life. In the third, we show trends that

cannot continue.

The intent is to “show” the tragedies being enacted nationally and globally, and to induce feelings of rejection so that current operating systems¹⁶⁹ can be discarded—even “exploded”—and viable operating systems can be instituted. The rejection must be strongly felt so that healthy and viable stories, worldviews, and narratives can replace maladaptive, bankrupt ones. **Realizing that the current narrative of infinite abundance is insane is one way for us to begin formulating a different story, so humans together can create a realizable future, instead of ecocide and complete collapse.**

¹⁶⁸ In economics, discounted utility is the utility (desirability) of some future event, such as consuming a certain amount of a good, as perceived at the present time as opposed to at the time of its occurrence. For more, see: Wikipedia, “Discounted utility,” en.wikipedia.org/wiki/Discounted_utility.

¹⁶⁹ The basis of our operating systems are the stories we tell ourselves, our cultural mythologies, our life narratives, and the world-views that support all of these.

Interlude

Sophia W. responded: “Your story tellers have done an adequate job of explaining that the dominant human operating systems will produce collapse for the human enterprise and bring with that collapse a broken climate. Meanwhile, there exist no parts of your dominant economic, political, or moral systems that provide a stop, or a remedy for the crises in this story.”

Wisdom, at this point asks the pregnant questions: **“Where in the human societies of 2018 is there a powerful enough entity with the resources to tell this story so that benign economic, social and moral systems can be formulated? Where does fact-based Reality merge with moral systems so that a narrative of viability for humanity can be constructed?”** And both of these questions must be answered in the very short time left before the questions become irrelevant in the collapse that is coming.

“Wisdom would not have entered the story if she did not have responses to those questions. First, within the human community there are organizations where the science of factual Reality and the moral imperative to help humans in comprehensive ways comes together so that the story can be understood. Moreover, within these entities the resources exist to begin the needed transformation of the destructive narrative now leading humanity.

“Philanthropies are these organizations and hundreds of billions of US dollars are at their disposal.

“If philanthropy could see the basic parameters of the story, and they have the scientists and data centers who can easily aggregate the implications of this story, then they could sound the klaxon alarm that could pierce through the inertia of the current broken and destructive operating systems.

“So, philanthropy could sound the klaxon emergency alarm that could wake humanity to the fundamental brokenness of their dominating cultural narratives. The questions posed are pregnant, since enough of humanity know that its narratives no longer serve their future. Humans know, deep in their beings that they are in pre-breakdown of their operating systems. The signs are everywhere; political systems have little or no legitimacy in far too many places. Old mythologies no longer animate current needs.

“Additionally, philanthropies could fund civil discourse conversations (See Box 14: Civil Discourse Gatherings) and coordinate the innumerable meeting places where people gather to discuss and discern the operating systems that replace those now breaking down. Groups can use a visioning and planning process called backcasting to identify a viable future, and then work backwards to chart a course to get there (see Box 13: Backcasting for a Viable Future).

“Faith institutions and structures, their meeting places—representing ‘where and how’ people spoke, celebrated, and consolidated their value systems—could become relevant rather than tangential to this story’s crises. Religions have historically codified value systems that assured their group’s thriving continuance. They need to express new value systems, the ‘shoulds’ and ‘oughts,’ related to the new system of moral values—what is ‘important’ and what ‘matters.’ The modes of behavior, the social and moral operating systems could return their human communities to viability, rather than usher in self-destruction. Foundations could fund the return to values and viability.

“Philanthropy can be called into the 21st century. But, do not expect that philanthropy will discover Reality on its own. It will need to be called into doing what is necessary to begin to help humanity with the overarching and systemic crises. A hue and cry needs to be raised by those who grasp and feel the vise crushing the future. The opportunity has passed to slay the Dragon through individual actions limiting carbonaceous fuels, or through simplifying lifestyles.

“Aware citizens need to ask for help in communicating Reality. Philanthropy must be called, and activists must demand an emergency alarm to rouse your nation. Everything is at stake, everything you humans care about. Who else has the resources and is able and willing to help? Philanthropy must be roused.”

Box 13: Backcasting for a Viable Future

Our current business-as-usual trajectory will lead to a catastrophic future—as will the best-intentioned plans by nations under the spell of the Tinkerbell-Effect. We are in uncharted territory. How do we actually move forward to create new operating systems and get humanity through the coming bottleneck?

It is no longer workable to project from our fossil fuel-based past, through a deeply misunderstood present, into an impossible future—all seen through the distorting lenses of delusions that are clearly bringing us to ruin. Moreover, the conventional methods of creating forecasts, projections, and scenarios will not assist us in the complete system transformation that we need.

It is now necessary to adopt a “back from the future” approach called backcasting, a planning method that starts with defining a desirable, viable future and then works backwards, exploring how to chart a safe and resilient course towards that viable, sustainable future-space. By contrast, forecasting involves predicting the future based on current trend analysis and taking steps that merely continue present methods extrapolated into the future.

Importantly, backcasting will not succeed unless we confront the Delusion Dragon and involve Reality-based thinking in our visioning process.

Box 14: Civil Discourse Gatherings

Recently, we have seen a frightful coarsening and polarizing of our national dialogue, across the political spectrum. This only breeds more division and makes real debate over issues less likely. We cannot begin to hope to make the deep systemic transformations needed without reigniting the ability to come together in a civil and respectful manner.

The nature of the crises before us will require comprehensive changes. Difficult decisions must be made. Many initiatives will require citizen pressure, input, and involvement—at all levels of government, business, and society.

Facilitated forums or gatherings could help stakeholders and citizens to dialogue, deliberate, and plan—this can prove key for dissolving polarization and arriving at solutions at the local and state level. Structured deliberation of the issues can provide critical social support and increase openness to different opinions.

Such gatherings can identify and disseminate local and national solutions. Experts, stakeholders, and the public can discuss, plan, and learn in forums in a diversity of settings—such as schools, labor unions, churches, and civic spaces.

Civil discourse ground rules and facilitation can minimize the influence of dismissiveness or misinformation. Participants can feel more confident and motivated to take effective action. They will more likely perceive experts and institutions as respectful of public concerns—these are perceptions that predict eventual acceptance of policy decisions.

What is civil discourse? A 2011 conversation among national leaders from many fields, held at the US Supreme Court, defined civil discourse as “robust, honest, frank, and constructive dialogue and deliberation that seeks to advance the public interest.”

Participants in civil discourse:

- Undertake a serious exchange of views
- Focus on issues rather than on the individual(s) espousing them
- Defend their interpretations using verified information
- Thoughtfully listen to others, and treat their ideas with respect
- Seek the sources of disagreements and points of common purpose
- Embody open-mindedness and a willingness to change their minds
- Assume they will need to compromise and are willing to do so
- Avoid violence (physical, emotional, and verbal)

For more information, see articles and resources in footnote.¹⁷⁰

¹⁷⁰ Susanne C. Moser and Lisa Dilling, "Communicating Climate Change: Closing the Science-Action Gap," in *The Oxford Handbook of Climate Change and Society*, ed. John S. Dryzek, et al. (Oxford University Press, 2011), p. 165.

Matthew Nisbet, "Civic Education About Climate Change: Opinion Leaders, Communication Infrastructure, and Participatory Culture," *Climate Change Education Roundtable*, National Academies, Washington, DC (American University, December 6, 2010), p. 14.

National Institute for Civil Discourse, University of Arizona, nicd.arizona.edu/.

Zoe Weil, "Civil Discourse Leads to Positive Change; Insults Do Not," *Common Dreams*, March 6, 2016,

www.commondreams.org/views/2016/03/06/civil-discourse-leads-positive-change-insults-do-not.

James Zogby, "The Importance Of Civil Discourse," *Huffington Post*, September 23, 2017, www.huffingtonpost.com/entry/the-importance-of-civil-discourse_us_59c5782be4b08d6615504261.

Part 7

Challenge, Change, and Transformation

This part of the story is designed to catalyze a Kairos, the critical time to awaken us to the comprehensive nature of our self-destruction. That we have heretofore been unable to see that collectively we are ending the human prospect with our current ESPM systems is the simple statement that humans have been in the thrall of the Hydra-Headed Delusion Dragon. This story has worked to elucidate the Dragon, and many of his heads.

The Challenge Ahead

The climax of the story is at hand. The Kairos is the awakening that this story must create. We story tellers have sought the catalyst to initiate the awakening. For too long, we have been caught in trying to elucidate the facts, science, and data related to harmful effects of modern industrial processes, particularly those related to the global warming crisis. We have believed that the Truth would set humanity free from the captivity of polluting fossil fuels. We have believed that humanity would respond to facts and science, and the warnings that accompanied them, particularly when breaking the climate would be so cataclysmic.

We have been quite mistaken.

The harder we have worked to illuminate these facts related to the breaking of the climate system, the further humanity has sunk into relentless self-destruction, by continuing unabated to destabilize that system. In the future, climate disasters will intensify and become more frequent. Tipping points may altogether end civilization, which depends on a stable climate. Facts and science have been ineffective against the Dragon.

Distraught and vanquished, we sought the counsel of Wisdom, and we have discovered this story with her help. It seems profoundly true that people need to be jarred from their trance, their delusions, and their contradictions—and to perceive the crises we all have created for ourselves, and for all of Life. Sophia is suggesting a persistent and shrill enough alarm, sounded until people awaken. In addition, we do not know nor can we suggest where such a super-ordinate and persistent enough alarm can derive from, except from a powerful entity working in all of our interests, and we know of no such entity except philanthropy.

However, philanthropy must act quickly and with solidarity, understanding that we all have nowhere else to turn. Before the alarm can be sounded, philanthropy too needs to awaken, as Sophia Wisdom points out. That is now the job of those of us who care. If thousands of us now cajole philanthropy into sounding the emergency alarm, they may awaken and produce the beginning awakening needed, so that enough of us to gather and participate in creating and constructing new operating systems and functional narratives that align with Reality and the ability of Earth to support us.

Philanthropy has full access to the scientists, system architects, world leaders, best available information, and much more. It can awaken us to the comprehensive nature of our plight. Philanthropy, for all of its shortcomings is the entity that both loves us (that is the literal meaning of the word: Greek *philanthrōpía*, love for mankind), and has the resources to initiate the necessary comprehensive “conversation.”



This story is a story of Kairos, or humanity awakening to the self-destructive Dragon we unwittingly created and that has us in its thrall. We need a reckoning with the Delusion Dragon holding us captive, like unto the reckoning that the people of this nation had with England before independence. Slaying the Dragon and freeing ourselves from its clutches will take courageous action, along with the kinds of reflection and discussion that this nation’s Founders engaged.

If we cannot free ourselves from the Dragon, free our Earth from it, and free her Life-Support Systems from its ravages, then we will not continue. That is the simple meaning of the situation humanity finds itself in—we are not now a viable species. Realization of that Reality is step one, just as addicts must first realize that they are addicted before recovery is possible.

Box 15: The Necessary Role of Philanthropy in This Kairos Time

As part of a “**Climate and Ecological Emergency Campaign**,” we must call on philanthropy to provide the emergency alarm that awakens humanity to the massive, civilization-threatening crises.

Then, philanthropy could fund and implement a “Balance Broadcast Center,” available to all Americans, functioning 24/7, so that they perceive our Reality situation. Philanthropy could broadcast progress reporting, and the best systemic responses at national, local, and state levels. Broadcasts must include interactivity—people need to be able to ask questions, get answers and provide suggested content.

Third, philanthropy could fund citizen gatherings that start to sketch functional and viable systems. These gatherings—civic, religious, public, and private—will consider and discuss the systemic changes and transformations required to habilitate the crises.

Philanthropy, part of the collective US society still in the thrall of delusions, will need to be called into their helping role. Thousands of individuals will need to contact philanthropy and bring them into awakening.

Philanthropy has the wherewithal to perceive the facts, the truth, and the Reality of humanity’s interconnected crises. That is what they are designed for. We must call them to their highest duty and stated mission: to help us all to respond to the most severe crises we have ever faced. When humanity is in need, philanthropy is the “go-to” place to find help and support.

Part of humanity’s Kairos in 2018 is to understand that the comprehensive crises we are now bound in cannot be fixed, not by technology, not by any “part” of change we can suggest. What is needed is akin to a metanoia, that is, a profound rebirth, a metamorphosis. The behavioral systems that define morality have a necessary role.

Our religions have not halted the self-destruction, nor do they seem to perceive the Dragon. They were constructed in times when the world was still relatively empty, and they do not provide workable moral systems when the world is over-full and over-exploited. Their focus must now turn toward our continuance here on Earth, our collective viability.

A transformed political system must be constructed. A new society based on more than continuous over-consumption and pollution, run by energy systems without coal, oil or methane. All of this, and much more done while we collectively and collaboratively wrestle with differing degrees of collapse seasoned by disasters wrought because we have allowed the Dragon to hold us captive for far too long. This is now the challenge and collective work of this generation. Humanity cannot pass this on to the next generation. We must awaken, stand up and take on the most comprehensive challenge ever presented to humans in their entire epic history.

Catalyzing Change and Transformation

The dramatic transformation of our systems necessary will not be possible without the support of the American people. Yet, while some two-thirds of the American public believes global warming is a problem, few know the scope, scale, and urgency of the crisis, and few believe climate warming will matter to them personally. Nor do they believe that extensive changes in their lives and lifestyles are required to meet the warming challenge and hold to agreed warming ceilings. As Sophia clearly explained, global warming alone is too invisible—the intertwined climate-ecological-energy crises must be viscerally perceived.

A common-reality needs to be constructed for that two-thirds of Americans—a go-to source of information that is functioning on a continual basis and that can jury the information. Many questions need to have current “best” answers. This information is not readily available, and few can sift through all of the complex information, critical factors compared to trivial ones, and discern false but “good-sounding” published media.

The dramatic transformation of our systems necessary will not be possible without the support of the American people.

Philanthropy could provide a Balance Broadcast Center that would hold the best current information and broadcast that continually with multi-media support and public outreach and interaction (for more details, see Box 14: A Balance Broadcast Center Proposal). Philanthropy could elucidate the common Reality, the crises with their scope, scale, and urgency. Accessible “best-science” information could be available on a continuously updated basis, the information easily accessible in multi-media, available 24/7, and designed to catalyze a cultural conversation related to what survival means related to economics, politics, and social values.

Philanthropy must now expose the “Reality” of the threats we face and explain why this year must be the year to begin discussing effective responses. **It must broadcast that truth far and wide; update it continually; and galvanize a far greater number of people in the US and across**

the world that will respond. In essence, philanthropy must explain that how we operate now makes us non-viable as a species, for the many reasons this story elaborates.

A human lifetime ago, the world awakened to finally see the Reality that Hitler and Germany represented. The alarm that caused the world to wake-up and respond was the invasion of Poland in September of 1939.¹⁷¹ The threat was not visible when Hitler annexed Austria, nor when Hitler took Czechoslovakia unopposed. The simple truth related to our collective non-viability in our current operating systems—combined with the necessity of exposing the delusions and contradictions hiding the truth—requires that humanity first perceive the threats (like Hitler), then have a worldwide conversation related to addressing them. Citizens must push governments to respond. Governments are not responding now, and they will not unless a far greater percentage of citizens perceive and understand the extensiveness of the threats.

Philanthropy is feeding the Dragon with its current approach. It will take galvanizing and mobilizing the American public to begin to dispel that Dragon, a far different strategy than philanthropy is currently undertaking.

Sophia W.: “Time for my final comments related to the ‘call-to-the-heroic’ aspects of this story.

“The story tellers have sought my counsel once the crises that beset humans were already full blown. I cannot know if humanity will salvage anything important related to your unique consciousness, nor of the artifacts of your civilizations. It is up to you, and what you do or do not do.

“So, get the alarm sounded. Besiege philanthropy until they see it is their function and duty to sound the alarm related to the full-scale emergency and convene the innumerable public gatherings required to discuss the systemic changes required to habilitate the crises. The storytellers will provide you contact information for the related philanthropies in Appendix I.

“Chaos and violence frequently attend to systems’ breakdown, so early commitments to, and facilitation of cooperation, collaboration, and synergism between and among groups at all levels is required. Humans show remarkable abilities to cooperate in crises, so these threats need to be perceived, and their urgency unmistakable.

“Now a word about transformations, and those experienced by Life in processes that you call evolution. Once the need for transformation is required by species, both perceived and experienced, then Life experiments with developmental processes that mimic ‘evolution.’ And development can happen quite quickly. What is more, the number of individuals in a species that must successfully adapt in order to preserve a species’ future viability is no more than a small parts of the total number of individuals of that species.

“It is important to focus on those with whom you can cooperate and with whom healthy adaptation is already possible or underway. Transformation does not occur by consensus, it

¹⁷¹ “This Day In History: 1939—Germans Invade Poland,” History, www.history.com/this-day-in-history/germans-invade-poland.

occurs by emulation of perceived adaptations that appear to be successful. Life imitates its own developmental processes, and not by dint of argument or conflict. Besides, Reality controls. That means that what is actually and factually happening is far more important than what individuals may want to happen. Humans are the only mortal species that allows 'wishful thinking' to obscure Reality, to the detriment of all.

"You may send this story to everyone you are able. Entreat those individuals, groups and entities that can help or should help; not asking and not begging means not receiving.

"The only legitimate relief for the pain and fear attending your human crises is action affecting the consequences of the crises. It is the way that Life's processes developed you. Your hyperarousal related to the acute stress perceived by humans, the fight-flight arousal system, requires responses or the human organism is damaged if it cannot respond. So respond to crises you must, responding to threats is necessary. Continued denial, remaining transfixed in addiction or maintaining in the Dragon-induced trance is consummately fatal.

"Pick Life. It's the only sensible choice. It does not take a wisdom-endowed creature to understand that. Even Homo sapiens can grasp that Reality."

Box 16: A Balance Broadcast Center Proposal

A climate and ecological Reality information source, call it a “Balance Broadcast Center” needs to be available to all Americans, functioning 24/7, so that they perceive our overshoot Reality situation.

Proposed Functions for the Center:

First, consider that the Center needs an extensive communications system (television / radio / print / online)—so that findings, conclusions, suggestions, and best practices are broadcast to homes, universities (where facilitators and expert supplemental materials could be circulated), civic auditoriums, libraries, faith communities, and more. Surely education, best practice, and related content would need to be both interactive and networked. Online conversations and video content would be shared. Communication with the Center would be a two-way street: feedback and flow-back could be provided to the Center related to its content, methods, conclusions, and more.

Relevant “simulation games,” like those provided by organizations like Climate Interactive¹⁷² could take place in many meeting centers. In this way, individuals and groups can try-out different policies and consumption patterns to discover how they impact the energy transition and climate goals. Personal, face-to-face interaction is essential; people must come together for discussion and mutual support.

Proposed Roles for the Center:

Like a competent **physician**, the Center first provides the clear diagnosis and prognosis related to climate, i.e., meaning that it could describe the illness and explain what needs to be done to stay within the agreed-to world heating limits of 1.5-2°C, and the likely results of failure to hold to those limits. Then, the Center could suggest and explain the treatments needed to stabilize climate.

Another role is **educator and advisor** in disseminating and interpreting the results of the interactive process.

Acting as a **counselor and interventionist**, similar to addiction treatment and counseling, may be constructive for many. The Center may need to act as a **therapist** for individuals, families, and even communities. The degree of loss, change, and displacement could require a great deal of support and cooperation between and among all elements of the US. Prudence suggests that individuals and groups in our culture will need to be coaxed, nudged, and guided into the “chrysalis of transformation” in order to embrace the economic, social, and political implications of leaving fossil energy and relying on the flow of renewable energy.

Further, the Center must act as a **guide** in engaging faith communities and civic auditoriums to host the essential moral conversations—involving issues of justice, equity, and fairness for poor nations—and how the US must then respond in terms of emissions reductions, sharing of technology to reduce emissions, and paying for technological projects related to eliminating emissions.¹⁸ As the UN Framework Convention on Climate Change delineated, the US is responsible to help other nations based on our resources, capabilities, and to the extent we caused the problem. These are complex

¹⁷² Climate Interactive, www.climateinteractive.org/.

and difficult questions that will not be addressed by our country, without the support of enough American citizens who are willing to engage with the moral dimensions of the crisis.

The roles of physician, advisor, educator, therapist, and guide have been used to illustrate possible ways that the Center will catalyze the changes needed in our culture so that the public is mobilized and climate stability is achieved within limits that support a durable and viable future.

With this outline of the Center's functions, roles, and responsibilities, a motivated cultural conversation emerges.

Philanthropy, beyond funding the Center, can be the fair arbiter of best science, fair dissemination, and overall quality control for this essential but massive project.

Interlude

Justice, Equity, Fairness: Toward Systemic Transformation

The Association for the Tree of Life narrators held important conversations with Sophia-Wisdom during the construction and telling of the story, several times related to justice, equity, and fairness. Now, we summarize.

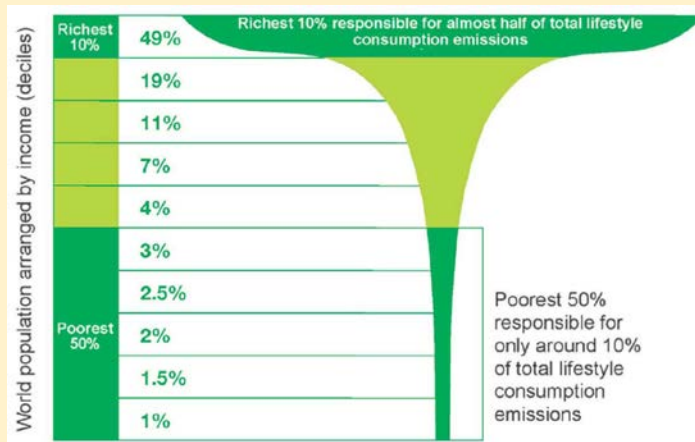
Much like in the rest of the non-profit world, many in the Association and allies worked from what we considered justice and equity. With vast wealth concentrations flowing into fewer and fewer hands, and with vast inequities across our US and across the world, we believe that working for justice is a crucial part of working for a future worth having for all of us.

To cite just two figures: in the United States, just 400 people own as much wealth as the bottom 204 million people. Globally, just eight billionaires own as much wealth as 50% of the entire population of our planet. And this negative trend—representing a concentration of wealth and power that many of us believe is deeply problematic for democratic culture—is escalating.

We believe we can share what Sophia related to us about these issues.

First Sophia asked us how we viewed justice and what it meant. We responded that the absence of equity involved so many people getting so little while a few had so much. The rich manipulated the US and other political systems to continue to take so much of their systems' wealth. We pointed to a quarter-century of weak international climate negotiations, failing to provide fairness for poor nations—those which have contributed the least to the climate crises, yet are the most vulnerable to its ravages. While most citizens within developed nations enjoy abundant “luxury emissions,” many in developing nations lack even “survival emissions” for basic necessities.

Box 17: Percentage of CO2 Emissions by World Population



In a 2015 report, Oxfam International finds that the world's richest 10% emit half of all fossil fuel pollution, while the poorest 50% contribute a mere 10%. The richest 1% may emit 175 times more per person than the poorest 10%.

Image: Oxfam

Box 18: The Paris Agreement and Justice

While the UN 2015 Paris Climate Agreement provides a target heat ceiling: 1.5-2°C, it does not provide any realizable pathway to accomplish the target, or any concrete means to achieve justice.

Nations' pledges provide paltry assistance for poor nations' climate mitigation and adaptation, and a dangerous course towards 3.3°C this century,¹⁷³ far above the 1.5-2°C goal.

In 2009 the world established the Green Climate Fund at Copenhagen, within the framework of the UNFCCC, as a mechanism to assist developing nations with mitigation and adaptation. The goal by 2020 is \$100 billion per year, an amount that is far too little.¹⁷⁴ Even attaining that funding is in doubt.¹⁷⁵ As of April 2018, the fund had raised \$10.3 billion (US dollars equivalent) in pledges from 43 nations.¹⁷⁶

Sophia's response was focused on the sense that justice was a larger issue that involved other living creatures and non-human systems, and that justice had to consider the next generations of humans following the current one.

Most importantly, Sophia strongly asserted that **justice cannot be achieved, that it is actually beyond reach with the dominant economic systems**, certainly so in the industrial nations. Moreover, the corresponding political systems preclude justice, in no small part because the economic and financial parts of industrial society control the political processes, and therefore its outcomes.

The dominant economic systems, she noted are designed to concentrate wealth and generate want and penury. In addition, the economic systems of the industrial world are designed to liquidate the natural assets that are not valued in the system, like the ecological resources

humans depend on that are not part of the market system. Here soil, water, climate, forests are not valued, but count as "free services," even though they make Life possible.

She asked us to consider that the human economy is extracting over 28,000 pounds per person of materials, minerals, and metals from our Earth each year, and that amount of extraction is predicted to double by 2050, which will push Earth beyond her limits.¹⁷⁷ Today's industrial economic systems are designed to pollute and poison the common habitat of humans and Life itself. While industrial systems "talk" about "internalizing" costs into the economic system, poisons and pollution are usually externalized upon the commons,¹⁷⁸ especially upon the poor.

Step back from this a few minutes, and carefully consider that industrial countries' economies take 10 times more extracted resource materials than poor countries' economies. So, **for every human alive, collectively we extract the weight of ten small automobiles each and every year. And that extraction is accelerating.** Moreover, most all of this extraction for each and every person, each and every year

¹⁷³ Climate Interactive, "Climate Scoreboard: Un Pledge Analysis,"

¹⁷⁴ Lean Alfred Santos, "For Jeffrey Sachs, \$100B climate finance target has 2 major problems," August 4, 2015, www.devex.com/news/for-jeffrey-sachs-100b-climate-finance-target-has-2-major-problems-86658.

¹⁷⁵ Green Climate Fund, "Contributions By State," www.greenclimate.fund/contributions/pledge-tracker/-states.

¹⁷⁶ Green Climate Fund, "How We Work," www.greenclimate.fund/how-we-work/resource-mobilization-states.

¹⁷⁷ UN Environment Programme, "Assessing Resource Use: A systems approach to resource efficiency and pollution reduction," 2017, see p. 8, www.resourcepanel.org/sites/default/files/documents/document/media/assessing_global_resource_use_amended_130318.pdf.

¹⁷⁸ The commons are cultural and natural resources accessible to all members of a society, for example: air, water, and a habitable earth—resources held in common, not owned privately. For more, see Glossary.

ends up as waste, pollution, and poison. Almost none of the materials, metals or minerals are recycled. The poisons, waste and pollution simply expands and overfills waste sinks. That is what is meant by “beyond earth limits.”

Sophia was very critical of our views related to justice and equity because those views were human centered and present tense, completely missing that these effects were part-and-parcel of the entire self-destructive economic and political system that is moving toward comprehensive self-destruction.

If we care about justice, or equity, we must sound the alarm, show people how we are self-destructing, cause them to feel their self-destruction and let them know they have little time to collectively make an economic system based on what the Earth can provide over a long duration—the operational explanation of sustainability. Therefore, economics must be based on the biological and physical throughputs that go into the system; in other words, economics must be limited to the bio-physical regenerative ability of Mother Earth.

Once humans have collectively based their economic system on a stable one-ecological-footprint-per-person principle, then they can reconstitute distribution systems that constrain the excesses that, by current design exclude justice and equity.

Simply put, there can be no economic or climate/environmental justice, nor relevant concepts of equity until and unless the economic and political systems, now destined for self-destruction by design, are based on models and factors other than designed self-destruction.¹⁷⁹

¹⁷⁹ Two major texts can start the interested reader in the direction of an entirely different economics. First, “For the Common Good, Redirecting the Economy Toward Community, the Environment and a Sustainable Future,” by Herman Daly and John Cobb. Second, “Energy and the Wealth of Nations,” by Charles Hall and Kent Klitgaard.

Part ∞

What to Do from Here

Sophia summarizes: “Your task is clear: This is said to humans who can understand that humanity’s present pathway ends in comprehensive catastrophe, suicide, and ecocide. The end of humanity and much if not most of Life accompanies humans’ ending. Those who see and care, which is all who can see and feel, all of those who stop and pay attention enough to understand, all of those who know compassion must **engender a complete course correction, driving back to balance.**

“Together you must create a **Complete Course Correction** and **Drive Back to Balance**. That is easy to understand and remember, CCC-DBB. Balance is an ecological footprint of 1 for your nation. It means a lot less taking from the Earth, a lot less consumption, much less poisons and pollution.”

A Story Within the Story

After a couple minutes of silence, Sophia sharply said, “It is time for a story,” and she projected a fanfare of trumpets,¹⁸⁰ sounding like victory.

Then, “Once upon a time, long ago, ancient time in fact, a story emerged that was foundational to your culture and still resonates today. We will begin with a picture of one of the most photographed monumental sculptures in your New York City.” Sophia projected the picture for all of us to see:



Prometheus carrying fire to humanity, gilded bronze sculpture in Rockefeller Center, New York City, by Paul Manship in 1934. Photo: Wally Gobetz, flickr, CC-by-NC-ND 2.0.

¹⁸⁰ Sound Effects Factory, “Fanfare Trumpet Victory Tune Sound Effect,” www.youtube.com/watch?v=TLtqE_PxobQ.

“The story of Prometheus, the Titan God who stole fire from Zeus to give it to humanity is a story known to many people, as is his punishment for so doing. Because he was such a great benefactor to man, Zeus sentenced him to be bound to a rock and tortured by having his liver eaten by an eagle every day. As an immortal God, Prometheus’ liver grew back so that his daily torment, torture, and shackles continued.

“But, let us go back to the beginning.

“The story of Prometheus began some 2500 years ago in Greece. Prometheus’ name means ‘foresight,’ and Zeus gave Prometheus the task of creating man. Forming them from water and earth, humans were at first primitive, dirty, and lived in caves. Without knowledge, or skills of any kind, they lived in darkness and were in constant fear of their lives. They were basically helpless.

“The first great dramatist of ancient Greece, Aeschylus tells the tale this way: Zeus decided to destroy these creatures. But Prometheus, out of his ‘philanthropos tropos,’¹⁸¹ translated as his ‘humanity-loving nature,’ then gave his creatures gifts. His gift of fire is shown in the Rockefeller Center sculpture. More, he gave them the ways to acquire knowledge, arts, sciences, and technology—the ingredients of civilization. Finally, Prometheus gave man optimism, the quality that motivates humans to use knowledge to add to civilization and improve their lives.

“**Prometheus was the original philanthropist**, and in his love for what he made, he showed that he could endure great sacrifice on their behalf—Zeus’ punishment—without any benefit for himself, nor any return gifts or payments from humankind. The question then is, ‘What did Prometheus love in humanity?’ Certainly he loved none of them individually, because at that mythical point in time, there was no culture, and therefore no individuality.

“**‘Foresight’ is what Prometheus means**, and what Prometheus could foresee, and what he loved then was humans’ ability to use knowledge, optimism, and his additional gifts like science, art, and technology to improve themselves with their own visions of their own development.

In essence, Prometheus gave humanity his own qualities of optimism, foresight, and the arts that make culture and civilization. Humans thus became self-improving as well as philanthropic to themselves. Prometheus loved humanity for its potential and possibility, and he had foresight to see that humans could build culture and enjoy its benefits.

“The morals of the story and the current relevance is quite clear.

“I cannot tell you that you will slay the Dragon you have created for yourselves, or free yourselves from its grips. However, you have the qualities, the knowledge, and the culturally

¹⁸¹ *Prometheus Bound*, by Aeschylus, lines 11, 28.

derived endowments—art, science, and technics. You have the spirit, it is contained in Life itself. It is a matter of using the Prometheus story as inspiration.

“What sacrifice he endured for your benefit! Out of love, pure love.

“Do you have the love of yourselves and of Life to see and feel the threats you have created, awaken humanity to the dangers, respond to the disasters, and change the story you are now living from tragedy to comedy?”

“Before ending, I would add a metaphor to the story, a metaphor of transformation. It is the Metaphor of Metamorphosis: ‘How a caterpillar transforms into a butterfly has long been used as a metaphor for the process of transforming states of consciousness from one dimension to another, from knowing something on the surface, then undergoing a deep experience that leads to a whole new capacity and perception.’¹⁸²

“Keep in mind, while you engage the complete course correction mentioned above, that the comprehensive changes required to continue the human story will entail changing operating systems, to be sure. However, **the changes to humanity will be metamorphoses beyond the change in form from hunter-gatherers to the Neolithic revolution.**¹⁸³ Human groups changed in form and function by moving to the Neolithic, and you will change in function and form if you make a successful transition now into the future.”

With that last metaphor and the story that preceded it, Sophia took her leave, but held the projection of the modern gilded Prometheus before us as she disappeared.



Climax and Clarity

We have reached the denouement, and the narrators are prepared to suggest the way forward, in this time of Dragon occupation.

With Sophia’s help and constructive criticism, we have detailed how humankind has been pulled onto the pathway of complete self-destruction and ecocide on a planetary scale, largely by the wealthy industrial world. Several factors make disasters unavoidable and disaster preparation combined with triage the alternative to comprehensive collapse.

We have examined five major factors that have impacts at international scale:

- Climate disruption and global warming.
- Ecological overshoot, overconsumption, over-pollution resulting in degradation of humanity’s Life-Support Systems. Ecological Footprint analysis is the yardstick. This assessment allows humanity, using existing data, to monitor its performance regarding a necessary ecological condition for living another hundreds of years, i.e., sustainability: the need to keep human demand within the amount that nature can supply. Sustainability means a footprint of one or less. The US has a current footprint over two, meaning that we are using twice the area of the US to

¹⁸² Great Transition Stories, “The Metaphor of Metamorphosis,” www.greattransitionstories.org/wiki/Story:Metamorphosis.

¹⁸³ Wikipedia, “Neolithic Revolution,” en.wikipedia.org/wiki/Neolithic_Revolution.

support US lifestyles. To drive back to balance, or one, means slashing overconsumption, over-pollution and related excesses.

- Plastic saturation.
- The Great Acceleration.
- The change in the last two human lifetimes of the total gross weight of mammalian life on Earth. In this 140-year period, weight of humans with our domesticated animals has gone from 2% of the total weight of mammals on Earth compared to wild animals, to 98% of total weight today. Coupled with this factor is the evidence presented by the most recent Living Planet Reports documenting the dwindling animal life on land and in our oceans.

There are more factors which solidify the argument that our operating systems—our economic, social, political, and moral systems (ESPM)—are broken, since their employ by our industrial wealthy world are leading to unrecoverable and comprehensive catastrophe. However, these five alone are sufficient to cause a normal person to see and feel the brokenness of our current way of operating and also to feel the need for an alarm to awaken humans from complacency.

First then, a world-wide alarm needs to be sounded. By alarm, this does not mean a general feeling of unease, then a return to business-as-usual. Depicting the Hydra-Headed Dragon and the grip it has on all of humankind is a way to show the pervasiveness of the crises due to their interacting factors. To see and feel the “factors,” the presence of the Hydra-Headed Dragon is to jar one into a fight-or-flight reaction.

Since we will not flee to another planet now or ever—despite delusional suggestions we need to leave Earth in order to survive—instead collective human alarm and the collective fight-or-flight reaction need to provide the energy required for a complete course correction and a comprehensive reconstruction and transformation of our ESPM operating systems.

This essay is the basis for the need for a world-wide alarm. The question is how is it to be sounded?



Jean Arnold

Individuals who see and feel the need for general alarm need to circulate the alarm from their media source points. Then they need to ask for a social entity that has the resources to make the alarm general to join in the sounding.

ATL does not believe that the political, economic, or social elite will sound the alarm. These actors are present-system bound. They are also blind and deaf to the stark need. Moral actors are similarly entrenched and oblivious.

The individuals who see and sound the alarm must appeal to the only entity powerful enough and with enough awareness of the crises that can make the alarm go systems-wide throughout the world. That social entity is philanthropy (see Appendix I for suggestions for the best philanthropic targets likely to support an all-out alarm).

Local alarms building to a world-wide alarm is the first necessity. Then, with an arousal of the species fight-or-flight reaction, it is necessary to provide opportunities for disaster preparedness along with opportunities for groups to meet in order to begin the ground-work for systems’ reconstruction and transformation.

Once the general alarm is sounded, denoting the need for complete course correction and driving back to balance (rebuilding and transforming our ESPM systems)—then the process to actually do that must begin, even while disasters which cannot be averted are prepared for and mitigated. This task will involve millions of people meeting in many thousands of places while the various suggestions and progress toward viable systems is broadcast. The closest historical analogy to what is required may well be the American Revolution (as explained in Part 6).

A considerable funding stream will be needed to catalyze and support the innumerable gatherings, real and actual that are open to the general population so that functional-viable operating systems displace the moribund present ones. A source for assaying progress, communicating valid and reliable system pillars and parts, explaining “workability” from the bio-physical and thermodynamic limits, and other pertinent aspects of systems reconstruction needs to monitor and over-arch the reconstruction process. This source must be all-embracing,¹⁸⁴ all-encompassing,¹⁸⁵ and all-inclusive.¹⁸⁶ Simultaneously, it must be able to distill best options and best practice.

These steps toward preparing for unavoidable disasters and reconstructing operating systems—locally, nationally and internationally—should be broadcast so that they would be available 24/7 for those interested in monitoring progress toward working systems that can endure for humans and living systems upon which all depend. People using their foresight (like Prometheus) to plan for and then begin course corrections across their operating systems while sharing productive results across all sectors broadcast in real time can provide the basis for survival through the next few centuries.

There is no entity to appeal to other than philanthropy.

Again, there is no entity to appeal to for the resources to catalyze the meetings and planning sessions, to help to support the gatherings that result, and to broadcast the progressive results other than philanthropy. What ATL is suggesting is a pathway toward future viability of our species and a benign relationship with Earth’s living systems and Life-Support Systems. The help needed is in the billions of dollars of funding and the engagement of top-level experts across all sectors of US society and society world-wide. There is no entity with the financial and personnel resources that could aid and abet our crises and help in the battle with the Hydra-Headed Dragon holding us now, except for philanthropy.

We are running out of time, and this is the Kairos moment for humankind. The alarm must be sounded, then arousal of the human energy needed to fight for our survival, the fight-or-flight mechanism. Following that, the alarm must be promulgated and spread quickly. Philanthropy must help, both in alarm and follow-through, and the scale is billions of dollars annually.

¹⁸⁴ Thesaurus.com, “all-embracing,” www.thesaurus.com/browse/all-embracing.

¹⁸⁵ Thesaurus.com, “all-encompassing,” www.thesaurus.com/browse/all-encompassing.

¹⁸⁶ Thesaurus.com, “all-inclusive,” www.thesaurus.com/browse/all-inclusive.

The follow-through process must respond to crises as they arise and re-constitute who we are and how we govern ourselves. It must revise and revamp our economic system with collective restraint embodied, not just accelerating growth as fundamental. Humanity needs to see and feel the full crises and pull together as a species with operating systems that can endure by measurable means. It is a reconstruction of a magnitude and immediacy never before attempted or accomplished by humans or any part of Life to this point.

But, we have the knowledge of what needs to happen to endure, the knowledge and motivation to modify destructive operating systems, and the capacity to understand clear and present dangers. Then, after arousing our most intense adaptive responses, our fight-or-flight mechanisms, to respond to the many claws and fire breathing heads of the Dragon that has us now, and to make a viable future together. It is a project worthy of the best angels of our nature and equal to the promises we have made in our original Constitution's preamble:

We the People of the United States, in Order to form a more perfect Union, establish Justice, insure the domestic Tranquility, provide for the common defence, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our Posterity, do ordain and establish this Constitution for the United States of America.

Let us renew this promise now, and assure a future viability of humankind, and free ourselves from the Dragon and the resulting delusions and contradictions that attend to its grasp. All of us need to seize this Kairos moment and vow to aid and abet all of us through these life-threatening crises that affect each and every one of us now and into the human future.



Appendix I, following immediately provides specific suggestions as part of the Climate and Ecological Emergency Campaign related to this essay's conclusions and implications. These suggestions can be done easily and quickly.

Appendix I

Specific Actions Steps to Fight the Dragon and to Lead to a Viable Human Future

Climate and Ecological Emergency Campaign Action Steps:

A. Send *Delusions and Contradictions* to your friends and family.

Mention you are helping to sound the alarm and that we are in the grip of a Hydra-Headed Dragon that is dragging us toward self-destruction. Copy and paste the five disaster factors listed below (from Part ∞) into your message. Part A takes a few minutes.

Sample message:

The essay I am sending you, titled *Delusions and Contradictions*, explains how we are in the deadly grip of a Hydra-Headed Dragon and disasters are looming—linked here: www.fightthedragon.org/. Five factors mark this Dragon:

- Climate disruption and global warming
- Ecological overshoot, overconsumption, over-pollution resulting in degradation of humanity's life-support systems.
- Plastic saturation of the environment
- The Great Acceleration
- Humanity and its domesticated animals now comprise 98% of the total weight of all mammals on Earth. All wild animals are just 2%.

Please review the essay and circulate it to others; we need to sound a general alarm so that we can fight the Dragon before we are destroyed.

B. Send a message to the philanthropies and political leaders below asking them to sound the alarm and amplify it across the US. Pick one or more following:

1. William and Flora Hewlett Foundation¹⁸⁷

Send e-mail messages to:

Vidya Krishnamurthy, Director of Communications
vidyak@hewlett.org

Liz Judge, Communications Officer, Environment
communications@hewlett.org

Ask them to forward *Delusions and Contradictions* to Larry Kramer, President of the Hewlett Foundation, and to Jonathan Pershing, Program Director for the Environment.

Sample message:

Dear Vidya and Liz:

Linked is an essay e-book titled *Delusions and Contradictions* for your review: www.fightthedragon.org/. It contains pertinent information for the Hewlett Foundation, explaining how the Hewlett Foundation is failing to meet its strategic program objectives related to its Environmental Program.

The failures are explained in the essay and I request that you forward the essay to President Larry Kramer and to Jonathan Pershing, Program Director for the Environment.

I ask that you help us avert the coming climate-ecological disasters related to the “Hydra-Headed Dragon” depicted and detailed in the essay. First, I request that the Hewlett Foundation sound an alarm throughout the United States. Second, I ask that the Hewlett Foundation plays a supportive role in helping to broadcast the reality of the threats we face.

Third, once Hewlett sounds the alarm and plays its appropriate role in awakening and galvanizing citizens, I expect that the Hewlett Foundation will help fund the follow-through civil discourse gatherings required to help all of us construct a healthy set of operating systems so that we are assured of a viable future. All of this is explained in *Delusions and Contradictions*.

Cordially,

(your name here)

¹⁸⁷ William + Flora Hewlett Foundation, “Environment Program,” www.hewlett.org/programs/environment/.

2. MacArthur Foundation¹⁸⁸

The MacArthur Foundation has recently moved in the direction of making “Big Bets,”¹⁸⁹ and striving toward transformative change in areas of profound concern. Their recent \$100 million award, 100&Change signifies that change in focus. MacArthur’s big bets include areas of concern related to climate and ecological issues.

Send e-mail messages to:

Jorgen Thomsen, Director, Climate Solutions

jthomsen@macfound.org

Milo Vodopic, Senior Program Officer, Climate Solutions

mvodopic@macfound.org

Kate Barnes, Senior Program Officer, Conservation & Sustainable Development

kbarnes@macfound.org

Sample message:

Dear Jorgen Thomsen, Mijo Vodopic, and Kate Barnes:

Linked is an essay e-book titled ***Delusions and Contradictions*** that is central to your program area concerns: www.fightthedragon.org/. Please review it and discuss among your MacArthur Foundation Directors and staff.

I ask that you help us avert the coming climate-ecological disasters related to the “Hydra-Headed Dragon” depicted and detailed in the essay. First, I request that the MacArthur Foundation sound an alarm throughout the United States. Second, I ask that the MacArthur Foundation plays a supportive role in helping to broadcast the reality of the threats we face.

Third, once MacArthur sounds the alarm and plays its appropriate role in awakening and galvanizing citizens, I expect that the MacArthur Foundation will help fund the follow-through civil discourse gatherings required to help all of us construct a healthy set of operating systems so that we are assured of a viable future. All of this is explained in *Delusions and Contradictions*.

Cordially,

(your name here)

¹⁸⁸ MacArthur Foundation, www.macfound.org/.

¹⁸⁹ MacArthur Foundation, “Big Bets,” www.macfound.org/pages/about-our-big-bets/.

3. Bill and Melinda Gates Foundation¹⁹⁰

Go to the Contact-us link:

www.gatesfoundation.org/Who-We-Are/General-Information/Contact-Us/Write-to-Us

Fill in Message Type by clicking “Other.” Then fill in your contact information. In the Message section, you might write something like this:

I would like to send an essay e-book, “Delusions and Contradictions” to Bill Gates, Melinda Gates, and CEO Susan Desmond-Hellmann. Please tell me the best way to do that, whether by sending a link to download or as an attachment.

When they respond to you, almost always by email, send them *Delusions and Contradictions* with a short introductory message that appeals to you.

4. Senator Bernie Sanders, Vermont

Go to the Comment section: www.sanders.senate.gov/contact/comment.

For Message Topic, select “Environment.” Then fill in your contact information.

For Subject, write:

I want to send you a crucial essay

Sample message to fill in Comments section:

Dear Bernie:

I am sending you, Katie Thomas in your office, and your staff an essay e-book titled “Delusions and Contradictions,” linked here: www.fightthedragon.org/. This essay supplements what you said on the presidential campaign trail, particularly the need for a full response to the looming climate destabilization threats we face.

The essay details the climate-ecological disasters in store for us and embodies them in the form of the Hydra-Headed Dragon depicted. Please provide me with a way to send you this critical essay that begs for comprehensive responses. Crucially, it provides a way to trigger the sounding of the alarm connected with fighting the Dragon that has us in its grip.

Thank you, Bernie for your work on behalf of all of us,

Cordially,

(your name here)

¹⁹⁰ Bill and Melinda Gates Foundation, www.gatesfoundation.org/.

5. Senator Sheldon Whitehouse, Rhode Island

Go to the email Sheldon section:

www.whitehouse.senate.gov/contact/email-sheldon

For the Subject, write:

I want to send a crucial essay on Climate and Ecology

Sample message to fill in comments section:

Dear Senator Whitehouse:

I am sending you and your staff an important essay e-book, titled “Delusions and Contradictions,” linked here: www.fightthedragon.org/. This essay details critical looming climate-ecological threats that our nation faces, many of which you have worked to avert, and depicts them in the form of a Hydra-Headed Dragon, given their interconnectedness and severity. Please tell me how to send an electronic copy for you and your staff.

I am asking you and your staff to help sound the alarm related to this Dragon, as the essay explains how we can get the alarm triggered. Moreover, please circulate this essay and its existential-threat implications to your family, friends, and constituents.

Cordially,

(your name here)

Contacting all three of the philanthropies and two US Senators in part B with cut-and-paste could be complete in 15 minutes or so.

C. Consult the ATL website: www.tree-of-life.works/.

Go to Take Action: www.tree-of-life.works/act, where you can find current action suggestions to “Fight the Dragon.”

Your suggestions for how best to Fight the Dragon can be sent to: FighttheDragon@tree-of-life.works. Questions and comments for Sophia Wisdom can be sent to the same address: FighttheDragon@tree-of-life.works, but send them to her attention. The ATL team cannot promise she will respond to your questions and comments.

Delusions and Contradictions is a project of the Association for the Tree of Life, its staff, member organizations, and allies. ATL is a 501c3 non-profit organization.

Appendix II

Additional Actions to Help Our Planetary Emergency

If you have completed the action steps in Appendix I and wish to go further, consider the **Job One Global Warming Plan** created by ATL's partner organization, Job One For Humanity.¹⁹¹

Today, the global warming reduction plans currently forwarded by most large environmental organizations and recognized global warming authorities will not simply not work **in time** to save humanity from the unavoidable worst consequences¹⁹² of irreversible global warming.¹⁹³ Unlike other global warming reduction plans, the Job One Plan squarely confronts these harsh new realities, with a step-by-step plan for effective individual and collective action.

The Job One Plan Global Warming Plan Is Designed to:

- Help you prepare and adapt your life, finance, and business strategies for the unavoidable reality of a severely global warming-damaged world.
- Help slow and lessen global warming's worst consequences in order to prevent extinction in what is called the **Climageddon Scenario**.¹⁹⁴

Get and Start Your Free Job One Plan:

- **Part 1:** Prepare yourself, family, and business for the worst consequences of global warming: www.tinyurl.com/JobOnePlan1
- **Part 2:** The best individual actions to help lessen the worst consequences of global warming: www.tinyurl.com/JobOnePlan2
- **Part 3:** The critical collective actions we **must do** to prevent the very extinction of future generations: www.tinyurl.com/JobOnePlan3
- **Part 4:** Radical new ideas on how we can get the collective actions of Part 3 done: www.tinyurl.com/JobOnePlan4

If you would like to learn more about global warming, consider reading the book *Climageddon: The Global Warming Emergency and How to Survive It* by Lawrence Wollersheim, Director of Job One for Humanity, which presents: original analysis, detailed consequence timetables, the background on how our current global warming predictions have been so grossly miscalculated, and eleven critical global warming tipping points. For more information, go here: www.joboneforhumanity.org/book_intro

¹⁹¹ Job One For Humanity, www.joboneforhumanity.org/.

¹⁹² Job One For Humanity, "The 20 Worst Consequences of Global Warming," www.joboneforhumanity.org/20_worst_consequences_of_global_warming.

¹⁹³ Job One For Humanity, "Global Warming Now Irreversible!" www.joboneforhumanity.org/irreversible_global_warming_is_here_now.

¹⁹⁴ Job One For Humanity, "What is the Climageddon Scenario of Global Warming?" www.joboneforhumanity.org/climageddon_scenario.

Appendix III:

Reflections on Scarcity vs. Abundance

Extracts from William Ophuls' *Ecology and the Politics of Scarcity Revisited: The Unraveling of the American Dream*,¹⁹⁵ with comments italicized.

William Ophuls published his second edition of *Ecology and the Politics of Scarcity Revisited* in 1992. Ophuls' analysis was highly cogent, prescient, and relevant in describing the very fundamental ideas which have shaped our nation and in providing warnings about our future. Provided below are key passages from the book, outlining some of the philosophical and underpinnings from which key delusions explored in this Delusion Series have derived.

From the introduction, **Scarcity**:

"The habitual condition of civilized people is one of scarcity. Goods have never been available in such abundance as to exhaust peoples wants; more often than not, even their basic needs have gone unmet. The existence of scarcity has momentous consequences, of which one of the most important is the utter inevitability of politics. The philosopher David Hume argued that if all goods were free, as air and water are, any person could get as much as he or she wanted without harming others. People would thus willingly share the earth's goods in common "as [do] man and wife." However, without a common abundance of goods, "selfishness and the confined generosity of man, along with the scanty provision nature has made for his wants," inevitably produce conflict; thus a system of justice that will restrain and regulate the human passions is a universal necessity (Hume 1739, III-2-11). The institution of government, whether it takes the form of primitive tabu or parliamentary democracy, therefore has its origins in the necessity to distribute scarce resources in an orderly fashion. It follows that assumptions about scarcity are absolutely central to any economic and political doctrine and that the relative scarcity or abundance of goods has a substantial and direct impact on the character of political, social, and economic institutions." (Page 9)

Comment: *Ophuls follows this definition of scarcity, an intrinsic condition of civilization to the time of the Enlightenment, with stating the exception to scarcity:*

"However, [Scarcity] has been undermined over the past three centuries during which a unique period of abnormal abundance has prevailed."

Comment: *With the discovery of the New World, scarcity has been obscured. Given our voracious appetite for extraction, consumption and pollution, along with the burgeoning of our numbers, more than a ten-times explosion of our human population since 1750, a full world, with accompanying scarcity is making its reappearances over many regions of our world.*

¹⁹⁵ William Ophuls, "Ecology and the Politics of Scarcity Revisited: The Unraveling of the American Dream," W H Freeman & Co, 1992, pp. 9, 190-192.

In Chapter Four, "The Great Frontier," Ophuls explains the long but recent period within which we have seen abundance for the developed industrial world, and the implications of now-dwindling resources:

"[The more wealthy and developed world has enjoyed abundance for almost the last three centuries. This was because of] the European discovery and exploitation of the New World, Oceania, and other founts of virgin resources (for example, Persian Gulf oil); the take-off and rapid-growth phases of science-based, energy-intensive technology; and the existence of vast reservoirs of "free" ecological goods such as air and water to absorb the consequences of our exploiting the new resources with the new technology. However, the first cause is clearly the most important.

"Before the discovery of the New World, the population of Europe pressed hard on its means of subsistence, and as a result, European societies were politically, economically, and socially closed. But with the opening up of a "Great Frontier" in the New World, Europe suddenly faced a seemingly limitless panorama of ecological riches. The land available for cultivation was suddenly multiplied about five times; vast stands of high-grade timber, a scarce commodity in Europe, stretched as far as the eye could see; gold and silver were there for the taking, and rich lodes of other metals lay ready for exploitation; the introduction of the potato and other new food crops from the New World boosted European agricultural production so sharply that the population doubled between 1750 and 1850. This bonanza of found wealth lifted the yoke of ecological scarcity and, coincidentally, created all the peculiar institutions and values characteristic of modern civilization — democracy, freedom, and individualism.¹⁹⁶

Indeed, the existence of such ecological abundance is an indispensable premise of the libertarian doctrines of John Locke and Adam Smith, the two thinkers whose works epitomize the modern bourgeois views of political economy on which all the institutions of open societies are based. For example, Locke (1690, paras. 27-29) justifies the institution of property by saying that it derives from the mixture of a man's labor with the original commons of nature. But he continually emphasizes that for one man to make part of what is the common heritage of mankind his own property does not work to the disadvantage of other men. Why? Because "there was still enough and as good left; and more than the yet unprovided could use" (para. 33). His argument on property by appropriation is shot through with references to the wilderness of the New World, which only needed to be occupied and cultivated to be turned into property for any man who desired it. Locke's justification of original property and the natural right of a man to appropriate it from nature thus rests on cornucopian assumptions. There is always more left; society can therefore be libertarian.

"The economics of Adam Smith rests on a similar vision of ecological abundance. In fact, Smith is even more optimistic than Locke, for he stresses that the opportunity to become a man of property (and therefore to enjoy the benefits of liberty) now lies more in trade and industry than in agriculture, which is potentially limited by the availability of arable land. Indeed, says Smith, under prevailing conditions, simply striking off all the mercantilist shackles on economic development and permitting a free-for-all, laissez-faire system of wealth-getting to operate instead would generate "opulence," which would

¹⁹⁶ Of course, the idea of individualism antedated the discovery of the New World, but before that time there had been little opportunity for its concrete expression. However, once the boom permitted it to be expressed, individualism became the basis for almost all of the most characteristic features of modernity: self-rule in democracy, self-enrichment in industrial capitalism, and self-salvation in Protestantism.

in turn liberate men from the social and political restrictions of feudalism. Smith's *The Wealth of Nations* (1776) is therefore a manifesto for the attainment of political liberty through the economic exploitation of the found wealth of the Great Frontier.

"The liberal ideas of Locke and Smith have not gone unchallenged, but with very few exceptions, liberals, conservatives, socialists, communists, and other modern ideologists have taken abundance for granted and assumed the necessity of further growth. They have disagreed only about how to produce enough wealth to satisfy the demands of hedonistic, materialistic "economic" men and about what constitutes a just division of the spoils. Karl Marx was even more utopian than either Locke or Smith, for he envisioned the eventual abolition of scarcity. He merely insisted that, on grounds of social justice, the march of progress be centrally directed by the state in the interest of those whose labor actually produced the goods.

"But the boom is now over. The found wealth of the Great Frontier has been all but exhausted. And technology is no real substitute, for it is merely a means of manipulating what is already there rather than a way of creating genuinely new resources on the scale of the Great Frontier.

"[Moreover, as we saw in Part I, technology is encountering limits of its own.] Thus a scarcity at least as intense as that prevailing in the pre-modern era, however different it may be in important respects, is about to replace abundance, and this will necessarily undercut the material conditions that have created and sustained current ideas, institutions, and practices. Once relative abundance and wealth of opportunity are no longer available to mitigate the harsh political dynamics of scarcity, the pressures favoring greater inequality, oppression, and conflict will build up, so that the return of scarcity portends the revival of age-old political evils, for our descendants if not for ourselves. In short, the golden age of individualism, liberty, and democracy (as those terms are currently understood) is all but over. In many important respects, we shall be obliged to return to something resembling the premodern, closed polity. This conclusion will be reinforced by a more detailed exploration of the political problem of controlling the competitive overexploitation of resources that has produced the ecological crisis." (Pages 190-192)

GLOSSARY / ABBREVIATIONS / ACRONYMS

BECCS: Bioenergy with Carbon Capture and Storage.

Biological capacity (“biocapacity”): The capacity of a given biologically productive area to regenerate an on-going supply of renewable resources and to absorb spillover wastes from human consumption. Unsustainability occurs if a population of an area’s consumption exceeds that area’s biocapacity. See also: **Ecological footprint analysis, Box 8: The Ecological Footprint** and **Box 9: Ecological Footprint vs. Biocapacity for USA.**

Bottleneck (population): A sharp reduction in the size of a population due to environmental events, including overshoot. See also: **Ecological overshoot.**

CO₂ (carbon dioxide): The most significant long-lived greenhouse gas in Earth's atmosphere. Combustion of fossil fuels, deforestation, and certain other human activities have caused the atmospheric concentration of CO₂ to increase about 43% since the beginning of the Industrial Age. For more, see: Wikipedia, “Carbon dioxide,” en.wikipedia.org/wiki/Carbon_dioxide.

CO₂e (carbon dioxide equivalent): A term for describing different greenhouse gases in a common unit, carbon dioxide. Each greenhouse gas has a different global warming potential and persists for a different length of time in the atmosphere. For any quantity and type of greenhouse gas, CO₂e signifies the amount of CO₂ that would have the equivalent global warming impact.

Commons: The cultural and natural resources accessible to all members of a society, for example: air, water, and a habitable earth—resources held in common, not owned privately. Groups of people can manage commons for individual and collective benefit by employing governance mechanisms such as informal norms, values, or formal rules. Unfortunately, commons can be destroyed when multiple users acting in self-interest behave contrary to the common good of all users by depleting or spoiling that resource through their collective action—for example, climate damage through the unrestrained burning of fossil fuels. For more, see: en.wikipedia.org/wiki/Commons.

COP (Conference of the Parties): The governing body of an international convention. In the case of global warming, it is the Party to the United Nations Framework Convention on Climate Change (UNFCCC).

Earth system science: Earth system science considers interactions between the Earth's “spheres”—atmosphere, hydrosphere, cryosphere, geosphere, pedosphere, biosphere, and, even, the magnetosphere—as well as the impact of human societies on these components. At its broadest scale, Earth system science brings together researchers across both the natural and social sciences, from fields including ecology, economics, geology, glaciology, meteorology, oceanography, paleontology, sociology, and space science. For more, see: Wikipedia, “Earth system science,” en.wikipedia.org/wiki/Earth_system_science.

Ecological footprint analysis: The Ecological Footprint measures human impact on Earth's ecosystems, showing how big humanity's demand is compared to what nature can renew. The Footprint is defined as the biologically productive area needed to provide for humanity's consumption: agriculture, fish, wood, fibers, CO₂ absorption from fossil fuel use, and land use for buildings and roads—an area's "biocapacity." Footprints and biocapacity can be assessed at the individual, regional, national, or global scale. For more, see: **Biological capacity ("biocapacity"), Box 8: The Ecological Footprint, Box 9: Ecological Footprint vs. Biocapacity for USA.** and Wikipedia, "Ecological footprint," en.wikipedia.org/wiki/Ecological_footprint.

Ecological overshoot: When a population exceeds the environment's carrying capacity that population is in overshoot. Global overshoot occurs when humanity's demand on nature exceeds the biosphere's supply, or regenerative capacity. Such overshoot leads to a depletion of Earth's life supporting natural capital and a buildup of waste. At the global level, ecological deficit and overshoot are the same since there is no net-import of resources to the planet. Local overshoot occurs when a local ecosystem is exploited more rapidly than it can renew itself. See also: **Bottleneck (population).**

ESPM systems: Economic, social, political, and moral systems.

Gigatonne (also gigaton): One billion metric tonnes.

GtCO₂e: One gigaton of carbon dioxide equivalent.

Great Acceleration: The body of research that charts the acceleration in human activity from the start of the Industrial Revolution in 1750 to 2010, and the subsequent changes in the Earth system, in a set of 24 indicators such as greenhouse gas levels, ocean acidification, deforestation and biodiversity deterioration. The most dramatic shifts have occurred since mid-20th century, now considered the start of the Great Acceleration. For more, see: **Box 11: Acceleration of Trends Since Mid-Twentieth Century, Box 12: Human Impact in Three Dimensions,** and Science News, "New planetary dashboard shows 'great acceleration' in human activity since 1950," www.sciencedaily.com/releases/2015/01/150115142223.htm.

IPCC (Intergovernmental Panel on Climate Change): A scientific and intergovernmental body under the auspices of the United Nations, dedicated to the task of providing the world with an objective, scientific view of climate change and its political and economic impacts. The IPCC issues major reports every 6-8 years. However, because the reports are drawn from existing published research, they already outdated when they are released. Moreover, they have consistently underestimated the pace and impacts of global warming. For more on these issues, see: Job One For Humanity, "35 Years of Global Warming Reduction Failure," www.joboneforhumanity.org/why_35_years_of_reduction_failure
For more on the IPCC in general, see: Wikipedia, "Intergovernmental Panel on Climate Change," en.wikipedia.org/wiki/Intergovernmental_Panel_on_Climate_Change.

Kairos: An ancient Greek word meaning the right, critical, or opportune moment. The ancient Greeks had two words for time: (1) chronos, referring to chronological or sequential time, and (2) kairos, referring to an opportune time for action. Kairos is a fleeting moment when an opening appears, and if success is to be achieved it must be driven through decisively. For theologian Paul Tillich, the kairos

are those crises in history which create an opportunity for, and indeed demand, an existential decision by the human subject. For more, see: Wikipedia, “Kairos,” en.wikipedia.org/wiki/Kairos.

Life-Support Systems: The distinction between living world and Life-Support Systems is this: the living world is that which is alive, while the Life-Support Systems are that which support Life, for example: water, land, air, and a livable climate. The soil is both a living world system and Life-Support System. In this essay, the phrase is capitalized to emphasize the foundational importance for life’s survival.

Mitigate: To lessen the severity of the climate crisis. Climate change mitigation consists of actions to limit the magnitude or rate of long-term climate change. Climate change mitigation generally involves reductions in human emissions of greenhouse gases. Mitigation may also be achieved by increasing the capacity of carbon sinks, e.g., through reforestation.

NDC (Nationally Determined Contributions or NDCs): As part of the Paris Agreement, NDCs are contributions that each country intends to make, in order to achieve the worldwide goal and are determined by all countries individually. They are supposed to be ambitious, represent a progression over time, and are reported every five years. However, there is no mechanism in the Agreement to force a country to set a specific target by a specific date, or to actually achieve what nations intend.

Operating system: In this context, operating system refers to the overarching human-made system by which we run our world. The economic, societal, political, and moral spheres are interrelated, interacting sub-systems within the whole. Interacting with and affecting our operating system are our worldviews, our cultural mythologies, our stories, and our life narratives; all provide fundamental assumptions that organize how we perceive and create our human world and affect our interactions with it.

Paris Climate Agreement (also Paris Climate Accord or Paris Agreement): An agreement within the United Nations Framework Convention on Climate Change (UNFCCC) dealing with greenhouse gas emissions mitigation, adaptation, and finance starting in the year 2020. The agreement was adopted by consensus on 12 December 2015. The Agreement aims to keep a global temperature rise this century well below 2°C (3.6°F) above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5°C. Each country determines and reports its own contribution to mitigate global warming. All nations have joined the Accord, however President Trump has announced US withdrawal. For more, see: Wikipedia, “Paris Agreement,” en.wikipedia.org/wiki/Paris_Agreement.

Philanthropy: A modern definition is “private initiatives, for the public good” (focusing on quality of life). By contrast, business endeavors are private initiatives for private good (focusing on material gain), and government endeavors are public initiatives for public good (focusing on provision of public services). Philanthropy can be distinguished from charity, though there is some degree of overlap. While charity aims to relieve the pain of a particular social problem, philanthropy attempts to address the root cause of the problem.

Planetary Boundaries: A concept of nine Earth system processes that defines a safe operating space for humanity. Once human activity passes certain thresholds or tipping points, defined as “planetary

boundaries,” there is a risk of irreversible and abrupt environmental change and corresponding damage to humans and human prospects. Humanity has already crossed several boundaries listed: genetic diversity, nitrogen, and phosphorus; and is approaching the safe limit for climate, land systems degradation, and ocean acidification. See also: **Box 5: Planetary Boundaries**. A description of the boundaries is here: Stockholm Resilience Center, “The nine planetary boundaries,” www.stockholmresilience.org/research/planetary-boundaries/planetary-boundaries/about-the-research/the-nine-planetary-boundaries.html.

Pollution sinks: A natural reservoir that will absorb human-made pollution as part of its normal cycle. The poison, contaminant, or toxicity is absorbed into a permanent or semi-permanent repository, or else transformed into another substance. Sinks are especially crucial for the absorption of greenhouse gases. For example, plant photosynthesis, soil, oceans, and other water bodies all absorb CO₂. Importantly, natural sinks can only absorb part of the CO₂ emitted by humans, so levels are accumulating in the atmosphere every year. See: THE ENVIRONMENTAL LITERACY COUNCIL, “Sources & Sinks,” enviroliteracy.org/air-climate-weather/climate/sources-sinks/.

Reality: Reality, in this essay (capitalized), means the state of things as they actually exist, as opposed to an idealistic or notional idea of them. Reality is verifiable and confirmable; it exists outside of any belief systems or worldviews. Reality exists whether you believe in it or not.

Scale: In this context, the ability to ramp up operations to the level or size necessary for the situation.

Scope: In this context, scope means the extent or range of an operation—that is, its breadth, depth, or reach.

Scope, scale, and urgency: A comprehensive understanding of the magnitude of what is needed—in this context, to confront the interconnected and interacting crises of global warming and ecological overshoot.

System: A regularly interacting and/or interdependent assemblage of items forming an integrated whole—and can be either natural or human-made. Systems can be massive, like our federal government or small, like a family. **Systemic** is an effect or factor spread throughout a system. **System change** involves comprehensive, system-wide transformation, going far beyond limited fixes that do not address root causes of problems.

Systems thinking: A way of approaching problems that focuses on how various elements within a complex system are related to and influence one another. Seeing the relationship between the parts of a whole is as important as seeing the parts themselves. Changing one part of the system usually affects other parts.

Tinkerbelle-Effect: An American English expression describing things that are thought to exist only because people believe in them. The effect is named after Tinkerbelle, the fairy in the play Peter Pan, who is revived from near death by the belief of the audience. For more, see: Wikipedia, “Tinkerbelle effect,” en.wikipedia.org/wiki/Tinkerbelle_effect.

Tipping point: When a process or stimulus at a certain point triggers a sudden, significant change in the status of an ongoing process or system—the crossing of a threshold—causing it to jump from one stable state to a new, significantly different state. Tipping points are often irreversible. Climate tipping point risks increase with rising temperatures. Also see **Box 6: Global Warming Tipping Points**.

Tonne (also metric ton): A metric unit of mass equal to 1000 kilograms; it is equivalent to approximately 2,204.6 pounds.

Triage: The determination of priorities for action. It often refers to the process of determining the priority of patients' treatments—in a battle or disaster—based on the severity of their condition, to increase the number of survivors. This rations patient treatment efficiently when resources are insufficient for all to be treated immediately and completely.

UNFCCC (United Nations Framework Convention on Climate Change): An international environmental treaty adopted in 1992, by almost all of the nations of the world, including the US, and entered into force in 1994. The objective is to “stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system”. The framework sets non-binding limits on greenhouse gas emissions for nations. It also outlines how international treaties may be negotiated to specify further action towards the UNFCCC’s objective. For more, see: Wikipedia, “United Nations Framework Convention on Climate Change,” en.wikipedia.org/wiki/United_Nations_Framework_Convention_on_Climate_Change.

Wisdom: The ability to think and act using knowledge, experience, understanding, common sense, and insight, especially in a mature manner. It also involves the ability to: (1) see oneself as part of a larger whole, (2) judge rightly in matters related to life and conduct, (3) deal with difficult questions in life, and (4) engage constructively with complex life problems. For more, see: Wikipedia, “Wisdom,” en.wikipedia.org/wiki/Wisdom.

Worldview: The fundamental cognitive orientation encompassing the whole of an individual’s or society’s knowledge and point of view. It also refers to the framework of ideas and beliefs forming a global description through which an individual, group, or culture watches and interprets the world and interacts with it. Worldviews are constructed to operate efficiently at a conscious level. However, core worldview beliefs are often deeply rooted, and so are only rarely reflected on by individuals, and are brought to the surface only in moments of severe individual crises. Worldviews are altered substantially only in the most severe existential crises, i.e., wartime, brushes with death, life-threatening diseases, death of intimate loved ones, community disintegration, or community disasters.

Acknowledgements

The Association for the Tree of Life cannot acknowledge or thank all of those who have helped in contributing to the final first edition of *Delusions and Contradictions*. Many in the Association were part of the story, many helped write it. It is a composite, like many stories. Future works of the Association are likely to follow a similar pathway and end up again being a blended product. There are a number of people that we must thank for their extensive support. The story and its meaning could not exist without you, and the Association will be forever grateful. A heart-warm thank you to each and all of you:

Dr. Kevin Anderson, Professor of Energy and Climate Change at the School of Mechanical, Aerospace and Civil Engineering, University of Manchester, UK

www.kevinanderson.info/

Dr. Louis Arnoux, CEO & Catalyst, nGeni

www.ngeni.co/

Steve Bhaerman, aka “Swami Beyondananda,” host of Wiki Politiki Radio Show, coauthor of “Spontaneous Evolution”

www.wakeuplaughing.com/

www.wikipolitiki.com/

Peter Carter, Director, Climate Change Emergency Medical Response

www.climate-change-emergency-medical-response.org/

Peter Cornish

Michael Dowd, aka “Reverend Reality,” host of *The Future Is Calling Us to Greatness*, author of “Thank God for Evolution”

www.michaeldowd.net/

www.tree-of-life.works/greatness

Paul Ehrlich, Joan Diamond, and Erika Gavenus

Millennium Alliance for Humanity and the Biosphere (MAHB), Stanford University

www.mahb.stanford.edu/

Derrick Jensen, author of “Endgame,” coauthor of “Deep Green Resistance”

www.derrickjensen.org/

Judy Lord, Environmental Ministry, First Unitarian Church, Salt Lake City, Utah

Jill Merritt, Executive Director, Elders Rising

www.facebook.com/eldersrisingforintergenerationaljustice/

Kathleen Dean Moore, moral philosopher, author of “Great Tide Rising,” co-editor of “Moral Ground”

www.riverwalking.com/

Randy Vining, poet and visionary

Lawrence Wollersheim, Director, Job One For Humanity

www.joboneforhumanity.org/