

# Resurgence: Higher Education and a New Human Civilization

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*What follows is a “Resurgence Agenda” for humankind: a resurgence from the industrial era’s biosphere damage and from human social/economic distortions in equity. Like any “agenda,” it is an outline, a suggested direction, or guidance for action. My hope is that this Agenda, as limited as it is, will lead to a vital vector for action at this ecologically chaotic moment when humankind needs a direction and a plan of action.*

**Apologia:** I write the following so that humankind might re-form and thereby reclaim harmony with the earth over this century. In this Report, I am critical of global higher education only because I believe it can do much better than it is doing now, that it can function as one organized sector on behalf of human resurgence, and that it is the only human resource capable of reforming global human society to become sustainable and just. Higher education cannot lead resurgence as it is constituted now. This report explains how higher education can, itself, resurge by leading the world toward resurgence: the act of renewal is a renewal in itself.

By “resurge” I do not mean “return to normal” because for humans “normal” was disastrous. Normal was and is destructive to our abode, our environment. Our society was created without intention, but just grew. We, as a species, have been far too successful at growth and continue to be so, and therefore cannot act just as a mindless species bent on growth and expansion. We now must become a “super-species,” able to create a “conscious society,” one aware of its limits and requisites.

We cannot legislate our way to a “conscious society,” although we can give ourselves the opportunity to create a conscious society through legislation that mitigates greenhouse gas emissions. To become a different species, able to reflect on the consequences of our collective action, we need a re-thought education process so we can develop a new collective consciousness. Higher education can lead if it is re-shaped, re-thought, and re-built.

**The Last Humans**

We, humankind, are the last humans in the human (*Homo*) genus. But we -- *H. sapiens* or *H. digitalis* as we may be called now -- did not invent or discover our basic and irreplaceable abilities. Instead, we “smart ones” *inherited* those abilities. Africans long before sapiens appeared invented tool making, invented language, and discovered how to control fire and how to cook food. Without these fundamental abilities, especially language, we current humans could not have grown such a large society over the whole earth.

These African geniuses were an earlier species, probably *Homo erectus*, not *Homo sapiens*.

Without these abilities, we sapiens would be just another primate.

In other words, when we look at those among us with darker skin, we are looking at the face color of those who “founded” humanity. But this is not the only realization that is important for “us” to have at this moment of peril for the species.

This realization is a counter to the seeming pride we “last humans” have in our achievements when in fact we last humans (sapiens) have only built on the truly miraculous inventions of an earlier human species: we may not be the “crowning jewel” of the human genus we thought we were. We sapiens have brought our planet to near ruin. We can lament our “sin” or we can “clean up our act” quite literally. One realization has to be that since Africans with dark skin were the true geniuses is that our efforts to “clean up our act” has to include all humans -- “environmental justice.” Society is viable only when all members of society are viable.

The other part of the realization about who the true genius humans were is that humankind is worth saving. Should we betray our ancestors who gave us language and culture? We are the “rich kids” living off of our inheritance and it is time we acted less selfishly and irresponsibly.

We have acted atomistically, as if the collective didn’t matter. At this time, we find it easier to identify who we are *against* than who we are *for*.

To change from atomistic to cooperative (and perhaps sustainable), we look to the 250,000,000 humans involved with global higher education and realize we are looking at the “army” of those who will rescue humankind from its recent folly and create a **resurgence** of our species.

Yes, there really are two hundred and fifty million students/staff/faculty in higher education in the world.

With higher education leading, or at least committed to the Resurgence Agenda, we can and will create a young, **creative cohort** of imaginative and innovative problem solvers who can confront the immense problems the industrial era has created and find a way forward. There is no one solution to the unimaginable problems humankind will confront trying to reform ourselves and our society, so we do need an *army* of capable young people with the

right kind of orientation for this century, a century in which deep problems will seem *infinite*.

Higher Education in the world consists of around 19,400 institutions. Almost all of those now work *independently*. That must change immediately so that all of them work toward the one goal of developing that creative cohort who will re-shape civilization. When did higher education forget its duty to human society? When did it begin to think its only mission is to get jobs for graduates? This report explains how higher education can create a resurgence of humankind by once again taking up its duty to human society.

Working toward the Resurgence Agenda is not either/or -- higher education is already multi-faceted and will continue to be, but having one part of the mission of each institution that says it is committed to the Resurgence Agenda will provide the human numbers to transform society to become sustainable.

I write as someone who was hired by Michigan State University in 1963 as a faculty member. I write as someone who has worked as a professor or administrator at 8 universities and who has served as a technology and learning “thought leader” in higher education since 1985. But, I also write from the vantage point of an outside/insider since I am retired. I am free to write critically about the deepest assumptions and systems in higher education. I am a “whistleblower.” But, I hope, also an inspiration.

As an “insider” I know there is so much that is wrong about global higher education that prevents it from serving its civil responsibility but I also know there is so much that is *right* about higher education in the world that provides hope for the future that I am driven to write this Report.

Higher education may be in the process of a “big re-think,” but that big re-think has to be not just about higher education as a sector, but about humankind and how humankind functions. It is the responsibility of global higher education to re-form how humanity functions. Higher education does not have just a “civic responsibility” (to government) but a “*civil responsibility*,” that is, the duty to do a “big re-think” for all of humanity.

We are at the end of the industrial age, but we are also at the end of a time when we can trust politics alone to re-shape global society. We are at the end of the Holocene and at the beginning of the Anthropocene when the biosphere is no longer our friend. We are at the end of the time when humans are “the apex predator” because the virus is now preying on us. We are at the end of the time when we can think just of wealth, power, and growth.

We are at the beginning of a fundamentally new dominant technology (information technology) that affects how everything functions.

This is a profoundly confusing and sweeping watershed moment for humanity and the only institution able to metamorphize humanity is global higher education. The “big re-think” is about our species.

We academics cannot be thinking just about our own institutions, or just about higher education in our own countries, nor just about global higher education, but about our global species. The “big re-think” has to be far bigger than is now conceived.

Let me summarize the propositions in this report:

1. Earth’s biosphere is in chaos and the survival of humankind as a global inter-connected society is in doubt.
2. Governments and politics can *mitigate* the causes of the climate crisis by reducing greenhouse gas emissions but cannot change humankind at sufficient scale, or deeply enough, to create a truly *sustainable* global society even if climate change is mitigated. You cannot legislate a new consciousness.
3. Only higher education has the resources to create a new civil society, a conscious society, during this century that can live in harmony with the earth.
4. But higher education is mired in outdated beliefs that were never true, is oriented to a “MarketWorld” consciousness (a term in *Winners Take All* by Anand Giridharadas: <https://www.penguinrandomhouse.com/books/539747/winners-take-all-by-anand-giridharadas/>), does not recognize its responsibility to humankind, is perceived as nearly irrelevant and, therefore, is not up to the task of creating a sustainable global civilization. In its current instantiation, higher education cannot serve humankind as it must.
5. Human evolution studies reveal the secret of human survival: a nearly unique ability to both specialize in an ecology (or situation) and to generalize out of that ecology or situation and into a new one by taking principles from the first situation and applying them to the new situation. Humans have adapted to every ecology using this nearly unique combination of abilities to both specialize and generalize.
6. This specialize/generalize inherent trait is not widely understood, incorporated, or conveyed to students in higher education because higher education has veered toward only specialization during the industrial era. We are, therefore, not using the best leverage we have as humans -- our ability to be aware of our own actions and their repercussions -- to reform society so it is sustainable.
7. This human trait of specialize/generalize is a metacognitive trait that derives from learning experiences that require *reflection and transfer*.
8. Reflection and transfer can be built into learning experiences in higher education through a move to curricular generalization (interdisciplinarity). Reflection can be developed as a thinking habit by designing learning experiences that demand reflection.

9. Human evolution studies also reveal the other secret of human survival: social learning. Humans learn in groups. Current higher education is, unfortunately, built on educating individuals. That must change because it runs against how humans learn.
10. Once higher education has adopted a unified global goal to develop a creative cohort of students and graduates to preserve our global society, this cohort of millions will address the hundreds of problems that we face now as humans: not just a chaotic biosphere but a deeply disruptive technology, and an unsustainable civilization.
11. This cohort will work not only on the mitigation of the causes of the climate crisis but on adaptation to the effects of the climate crisis, and on local resilience to those effects, all towards a sustainable global society. All four -- mitigation, adaptation, resilience and sustainability -- are needed for humans to survive and to eventually live in harmony with the earth.
12. The technologies that have brought out the worst in humans -- industrial technologies -- led us to create weapons of war and led us to destroy our global ecosystem because there are no limits to industrial technologies nor to the human base desires driving destruction. Digital technologies, because they are *control* technologies, can help bring out the best in humans: global systems to balance human needs and natural systems.
13. This creative cohort generated in higher education will reform how our global society functions so that we humans can live in balance with the earth and with each other in an equitable and just society.
14. In localities around the world, population centers, or states, or however a local population is organized, a local leader will need to coordinate efforts toward adaptation and resilience. These efforts can be activated with college students through internships or other work and learning arrangements. Those students, active locally, can continue with jobs in their area, or of course use their experience to find "green" jobs in other localities. The workforce for the Resurgence Agenda is made up of college students (and younger students in many cases) and the local leadership may often be political but may also be a coalition of local environmental advocacy groups.

It is important for us today to realize that we are the last humans in a long line of human species and that those species gave us our best abilities, those abilities that allowed us to create our global civilization. We humans can empathize and cooperate with other members of our species -- not just within kinship relationships, but with any other human - and that is a unique human trait. These twin traits of empathy and cooperation make up the life force of our species. But, we have that additional cognitive trait of *reflection* -- the ability to abstract principles from one situation and apply them to a new situation.

Those three traits -- empathy, cooperation and reflection (adaptability) -- can get us through the multiple crises of this century if we allow them to.

The ground-level changes higher education must make to re-create humankind for this century:

1. **Unified Goals.** Work toward unified global goals, all 19,400 institutions
2. **Duty to Society.** Re-activate responsibility for the character, abilities and structure of society. Only HE can re-create humankind.
3. **Developing Learning.** Accept that its purpose is to develop the ability to learn, not to “deliver education.” Apply learning theory.
4. **Reject “MarketWorld.”** Pivot away from “MarketWorld” thinking -- as expressed in accountability, learning outcomes, retention, assessment, re-accreditation, data mining -- and return to a learning academy model. Higher education can serve its “business” purposes while at the same time also serving its larger purpose of re-creating humankind. The goal is not just staying in business but serving a social purpose.
5. **Metacognition.** Pivot from specialization to generalization. Use human evolution studies as the source for learning design. Multi-disciplinary thinking.
6. **Social Learning.** Base learning design on the group. Do not base learning design on the individual.
7. **Recognize the Resurgence Opportunity.** Higher education needs a galvanizing idea -- nothing could be more obvious than the opportunity that higher education has at this moment to re-energize the entire global enterprise on behalf of saving humanity. Put higher education back at the ethical and moral life force center of society; pull back from being just the handmaiden to MarketWorld, focusing on jobs, jobs, jobs.

**This publication presents global higher education with a mandate: do your civil duty. Lead the world toward sustainability. You in higher education are a large segment of global civil society, are influential, provide leaders and influencers for society everywhere, and have the research and human resources to not only save humanity during the climate crisis, but to create a better society.**

Higher education must itself metamorphize before global society does -- change its entire form at the most elemental level. And it must do this immediately. This report provides a *Resurgence Agenda*.

The following article makes the case for the approach offered in this Report:

<https://www.nytimes.com/2021/01/25/opinion/new-normal-climate-catastrophes.html?action=click&module=Opinion&pgtype=Homepage>

Here is just one excerpt from this article:

Going back to normal now means returning to a course that will destabilize the conditions for all human life, everywhere on earth. Normal means more fires, more category 5 hurricanes, more flooding, more drought, millions upon millions more migrants fleeing famine and civil war, more crop failures, more storms, more extinctions, more record-breaking heat. Normal means the increasing likelihood of civil unrest and state collapse, of widespread agricultural failure and collapsing fisheries, of millions of people dying from thirst and hunger, of new diseases, old diseases spreading to new places and the havoc of war. Normal could well mean the end of global civilization as we know it.

### **Acronyms for Resurgence**

This Report is about “resurgence,” not the “extinction” just described. Key to the Resurgence Agenda are several phrases and acronyms:

**MARS**=Mitigation, Adaptation, Resilience, Sustainability -- the four “legs” of resurgence.

**LRNG**=Local, Regional, National, Global (“LEARNING”) -- the levels of resurgence; MARS must happen at all four levels.

A third shorthand is about the current generation: “**generation R.**” The “R” is for resurgence, reform, re-creation, re-thinking, restoration, reflection and all the other “R” words that mean renaissance, a new beginning for humanity, a new species, a new consciousness about not burning up the earth for energy but using the power of the sun like plants do as we humans return to harmony with the Earth.

### **Generation R will engage in MARS at LRNG levels for resurgence.**

MARS at LRNG levels are dependent on the unique ability of humans to engage in metacognition: humans can arrive at global MARS at the local, regional, national and global levels through developing a creative cohort of learners (Gen R) capable of the metacognitive abilities to specialize and generalize.

All through this report, I will refer to **mitigation**: that refers to ways to reduce the causes of human destruction of our biosphere, most notably reducing our fossil fuel use. We humans can mitigate the sources of our destruction through laws and policies consistently enforced over decades. We can mitigate the fossil fuel sources through encouraging the move to renewable energy sources and by reducing our destruction of forests, our factory farming habits, our inefficient transportation and building practices and through many other efforts.

To see how the various mitigation efforts can reduce carbon in our atmosphere, see this MIT site: <https://www.climateinteractive.org/tools/en-roads/> This site allows us to see which efforts to mitigate climate change are most effective.

And, I will refer to **adaptation**, meaning physical and social means to adapt to the effects of climate change already upon us, such as the pandemic, an actual climate change effect that is not widely recognized as such. We see that we did not adapt very well to Covid-19, and we need to learn from this about how to better coordinate global human responses to disasters.

**Resilience** is planning for how communities deal with emergencies. Resilience is reached with plans for adaptation to disaster. Resilience is about response in real time.

**Sustainability** is when humankind has reached a permanent state of balance with the biosphere. We are now out of balance: the 6<sup>th</sup> mass extinction on earth is already underway. Global human sustainability may be reached by the end of this century but we could get close in a few decades.

At the MIT site noted above, we can see that the move to renewables, while necessary as a permanent change, will not have as much of an immediate impact as we might guess. Making buildings and cars more energy efficient has a more immediate impact on mitigation. Reducing methane emissions has a big impact. This simulator can guide planning for resurgence.

The second acronym, **LRNG**, refers to a simple but effective idea that is also common: for example, 350.org, the global organization working to mitigate the causes of climate change, has local chapters, so it is local, national and global, LNG and in some cases LRNG. I belong to the Rhode Island chapter called Climate Action Rhode Island (CARI). I am on the education committee for CARI.

LRNG -- local, regional, national, global -- which I pronounce "learning" since Resurgence is based on human learning -- reflects the common pattern of hierarchy for large human organizations. The U. S. is a federal system with semi-autonomous states making up "the United States." Within states, we have cities and counties. LRNG is a useful organizational model for civic action but is also a useful model for *civil* action. We need both laws and consistent enforcement of laws and guidelines.

To bring about harmony between humankind and the biosphere, we need both MARS and LRNG. We need a coordinated global effort for the entire MARS spectrum of response to our ecological crisis and that coordinated global effort needs to be structured as a LRNG entity. Higher education must take the lead working with governments at all levels and all pertinent and willing global organizations.

We can do a "MARS shot" by being active at all these levels: "LRNG."

**Resurgence of What?**

Humans lived in harmony with the earth up until we started farming. Farming, by allowing us to produce a surplus of food, led to the industrial era when human excess led to civic distortions, inequalities, wars and damage to the earth's biosphere. Now that this excess of production, consumption and greed has reached its hard limit (the climate crisis), we humans have to reform in every way.

We need a resurgence of civility, of local control, of adaptability, of balance, and of learning. We need a resurgence of empathy and of cooperation. We need a resurgence of good human evolutionary traits that determine the nature and character of society, replacing greed.

This resurgence will happen through higher education moving away from producing students seeking not just wealth but the *commonwealth*. Higher education succumbed to greed as its mission ("jobs") but has the consciousness to return to the creation of a civil society as was and must again be its mission. As we will see, "jobs" is only getting to first base and not scoring a run (excuse the baseball analogy).

### **How Hard It Is to See Objectively**

Many years ago, I read an analysis of why European civilization survived and became so dominant in the world. After all, the article's author said, many earlier civilizations had emerged, prospered, and then collapsed. What was special about European civilization from, say, 1550 to the present that made it a world power?

The theory put forward in this article was that political and mercantile power was *separated from* religious power -- the religious center of Europe was in Rome but the political and mercantile power became centered in northern Europe. Separate belief and action and you get civil energy. Radical thinking occurs away from centers of belief. (cf. *Range*)

This resurgence agenda also developed away from the center of belief about higher education: I have been away from a formal position in higher education for 5 years. I am northern Europe and the higher education enterprise is Rome. I can say things I could not have said 10 years ago.

What I say will make higher education better but what I say is critical at a deep level. I apologize to my friends and colleagues in advance. What I say is out of love for humanity and out of a belief in the strength of higher education, but, ultimately, all that I say is based in faith that my colleagues in higher education truly want the best for humankind.

Late in life, out of necessity of the moment, I personally faced some deep truths about myself -- I am old and was running out of time to "settle with my soul," to face a reality I had hidden from, but once done (painfully), I was freed of an anchor and grew inwardly.

For higher education, this is a “necessity of the moment” challenge similar to my own personal truth-facing. It is a “necessity of the moment” because higher education is the only institution that can save humankind but it is too weighted down with its own “deep [false] truths” that hold it back from its crucial task: it is organized to “deliver” an “education” but is not fundamentally organized to facilitate *learning*, at least not the learning that is needed in this century.

If higher education does not face its own pain, does not face down hard truths about itself, it will fail humankind and, as a result, our global society will be crippled. Global society can only change at its deepest levels if it acknowledges its own failed assumptions and practices, builds on vital trends already extant within higher education, and engages globally toward a unified goal.

We need a new kind of human for this century. Higher education can help develop this new kind of human.

See: <https://www.nytimes.com/2020/12/23/opinion/covid-schools-vaccine.html> to read about making schooling more “human.” One sample quotation from this article:

We often are in such a rush in school — from one class to the next, from one topic to another — that we don’t remember that the fundamental job is to partner with families to raise successful human beings. The pandemic is helping many of us to think about our students in a fuller and more holistic way; we should remember that when the crisis ends.

An argument in favor of the collective action this Report suggests:

Reconstructing our democracy will be daunting, but it will also lift us up. Democracies are about more than elections every four years. Successful ones entail broad-based civic engagement with an array of civil society’s institutions; collective action is about more than just the government or public institutions. It doesn’t destroy individuality or freedom, but can strengthen them and enable *all* of us to flourish. -- Joseph Stiglitz.  
<https://www.nytimes.com/2020/12/08/opinion/trump-democracy-election-stiglitz.html?action=click&module=Opinion&pgtype=Homepage>

Bill McKibben: <https://www.newyorker.com/news/annals-of-a-warming-planet/where-we-stand-on-climate> -- summary of the situation.

Corporations are also part of civil society. General Motors just announced it is moving from internal combustion cars to electric cars (EVs). And General Electric has jumped into the renewable energy field with an impressive new wind generator:

<https://www.nytimes.com/2021/01/01/business/GE-wind-turbine.html?action=click&module=News&pgtype=Homepage>

**Generalizing: Avoiding the Cataclysm**

<https://www.universityworldnews.com/post.php?story=20201204092017670>

Higher education shows signs of re-assuming its necessary role of *shaping society* at a time of extraordinary need: the threat to human existence in this time of climate change, ecological crisis, pandemics and disruptive changes brought about by new technologies. “Columbia University has launched a trans-disciplinary Climate School, the first new school in Columbia in a quarter of a century,” according to United Nations Secretary General Antonio Guterres.

The Secretary General, speaking at Columbia in December 2020, made it clear that universities are essential to what I call “the great human problem of this century.” How do we re-make society to not only deal with the crisis of this century but to form ourselves into a sustainability civilization?

For this purpose, as another example of higher education in the U. S. addressing the crises of this century, Georgetown University is offering new “Core Pathways” that are designed consciously for students to become engaged directly and actively, across disciplines, in the twin challenges of climate change and new technologies, the challenges humanity is facing in this century. <https://corepathways.georgetown.edu>

Humans have survived for 2.5 million years in part because of our ability to specialize in any ecology (food sources and climate) but then generalize (i.e., transfer survival skills) from that ecology to the next. Because of this unusual capacity, humans have adapted to all ecosystems in the world.

We were nomadic people. We were mobile and adaptable. We were constantly learning how to survive in different situations. For almost all of human history, our nomadic lives *kept us on our toes*. But, once we started farming, created a food surplus, and created cities, we became stagnant. We were and are no longer nomads, agile and adaptable, but staid and fixed. Yet, we still have the nomad in us. We still can both specialize and generalize. We may be rusty nomads but nomads we are.

It is the nomadic combination of abilities that will save us now. But this combination of skills does not serve as the fundamental concept for higher education which has become too specialized. It is stuck in reverence for sacred knowledge. Some trends in higher education are actually hopeful, albeit far too slow moving and scattered to address the pace of the crisis we are facing.

In this report, I provide amplification for an incipient trend in higher education away from specialization and toward generalizing to address the issues of this century. With a newly appointed top-level U. S. climate ambassador -- John Kerry -- already in office, and with hopeful trends in higher education, we are at the moment of *resurgence* as a species.

One of our core human traits is specialization which has allowed us to accomplish the industrial era expansion (for good and ill) but the other species trait is generalization --

what we call in academia “interdisciplinarity” (“transfer” from one discipline to another to address a cross-disciplinary problem) -- and this is the time for our second inherent trait to emerge. This report provides the context and an agenda.

This is the time for nomadic *generalization* as we humans adapt to the transformed ecology of our planet and to the disruptive changes propelled by information technologies. We are staying in one place *physically*, but our ecology -- despite our immobility physically -- has itself moved from stable to chaotic change. We now must be nomads in mind and spirit if not in movement.

## The Problem

The problem: climate change is an immediate threat to humanity. See <http://www.thelancet-press.com/embargo/climatecountdown.pdf>. Compounding the problem is that the global culture and economy are seemingly not able to change quickly enough or wisely enough to deal with this threat to our existence. Humanity has had the luxury of centuries of growth based on exploitation of natural resources. Now, that luxury no longer exists and profound changes are instead required both in the short term and the long term.

We have reached a hard limit on thoughtlessness.

What we need in the short term: survival; what we need in the long term: changing how our species functions. This is a *species* moment, not just historical but evolutionary, and it requires species-thinking, reminding ourselves how our species has survived major survival threats in the evolutionary past. We are looking at a century-long adjustment to arrive at post-industrial sustainable systems.

Only higher education, through developing a **creative cohort** of active young people engaged in deep change before graduation and after graduation has the numbers, resources, influence, and global spread to address the profound changes humanity has to make to survive in this century and the next few centuries. The immediate challenge: mitigation of the causes of climate change. Reducing greenhouse gas emissions. Society is already engaged actively with this challenge through a number of organizations, global agreements, legal and civic efforts. Mitigation, alone, however, still leaves the atmosphere loaded with fossil fuel emissions at levels sufficient to continue disruption of the biosphere.

The caveat: though learning trends in higher education are promising -- active learning, real-world learning, internships, authentic learning, problem-based learning and other positive developments -- most of higher education is still mired in ineffective atavistic beliefs about learning and education. For higher education to help bring humanity back from the brink, it will need to itself change quickly.

Higher education, at 19,400 institutions and 250,000,000 students, is a powerful sector of humanity. Though it is essential and productive now -- and determines the character of humanity -- higher education’s true strength is still unrealized: as a sector, it is responsible

for creating a vibrant society, but that responsibility is rarely mentioned or recognized as the enterprise instead focuses on individual graduates getting jobs. While that function is necessary, it is insufficient at this time of peril for humanity. Higher education, instead, is now responsible to re-structure human civilization. No other institution can do that. It must now act toward a unified goal.

Who in higher education will bring all 19,400 institutions together to agree on one goal for all of humanity? This report presents the challenge. How can global higher education act as one human entity to rise to the needs of 2021? Which associations, which systems, which governmental units, which ministers or secretaries will coordinate globally to set higher education on the mission of re-shaping how humanity functions?

I ask these questions not because I have the answers, but I ask them so leaders in higher education will find answers.

Higher education can accomplish this necessary goal by simply bringing humanity back to how it has adapted, as a species in times of rapid ecological change, by generalizing. “Generalizing” seems a simple term, but its meaning is profound. Generalizing means to become “nomadic” once again. Nomadic in thinking and in action. Higher education needs to develop in students “nomadic thinking.” Nomadic thinking is the ability to constantly adapt. Nomadic thinking is interdisciplinary thinking. And, it is situational thinking, because right now our “situation” is constantly changing. We are nomads at high speed.

### **Freeing Humans from Stasis**

“Generalizing” at this moment in human history means breaking with deep habits and patterns hardened during the centuries of industrial excess and once again becoming, as a species, agile learners ready and able to adapt to the changed global ecology. It might seem that we humans have already made deep changes in the 20<sup>th</sup> century because of the wars and crises in that century, but, now it may seem instead that the 20<sup>th</sup> century was only a warmup for this current century when we face a different kind of man-made threat: a global natural ecology so out of balance as to threaten our existence.

If the millions of young people in education at all levels in the world can learn with more urgency, with more of a deep challenge, facing more real-world problems, and get away from the lazy rote learning so common today; if young people can be energized and equipped mentally to deal with the actual problems of today, our species will survive. Without this re-activation of the learning genius of the human species, we may not survive.

“Education” is a noun; “learning” is a verb. A noun is a thing; a verb is an action. We have been doing “education” for a couple of centuries but now we need to do “learning.”

This difference captures what humanity has to do at this moment when humanity faces not just the climate crisis but a profoundly disruptive shift to information technology (equally a threat as the ecological crisis but, if anything, harder to understand). Both challenges demand action and both demand active and deep learning throughout life.

All of human society is based in human learning. At this moment in human history, we have to move from a noun (education) to a verb (learning), from static to dynamic, from stability to rapid change. How young people learn shapes our civilization: if they are preparing for life as it was 30 years ago, they will not do well. Knowledge was still in its “great books” era and higher education was and is still based in beliefs about knowledge and learning that no longer apply. We don’t “deliver education,” we spark curiosity, we create engaging problems, we build on natural learning processes such as conversation and cooperation.

Learning is how we humans deal with issues; but learning right now in our global society is stuck in disciplinary ruts and hampered by an educational system unaligned with how humans actually learn.

We don’t have the luxury of “bad” learning design at this crisis moment. Learning can get us through the crises in this century if we re-structure the *design* of learning. Fortunately, we humans have an evolutionary trait for dynamic learning at scale -- generalization -- that is emerging at this moment in higher education.

We have been stuck in *specialization* as a learning enterprise for a few centuries -- something that humans are good at -- but our other evolutionary trait, *generalization*, is emerging within higher education with a focus on innovation, invention, imagination, and adaptation -- real world learning, problem-based learning, authentic learning, internships, and so on. We humans have often faced “existential threats” and have moved from specializing in an ecological situation to generalizing in the new, altered, situation -- reflecting this ability to move from static repetition of knowledge to dynamic learning of new knowledge.

We did that as nomads, over evolutionary time, moving from locale to locale, first specializing to adapt to the conditions of one locale, and then having to generalize (adapt) to the conditions of the new locale.

Our “locale” for a few centuries has been our industrial era and the stable global biosphere we had adapted to. Now, our “locale” is a changed biosphere that continues to change, and our other “locale” is information technology which also continues to change our society more rapidly than we have been used to. We are in the midst of two accelerants but we are not adapting to the new speed limits quickly enough.

This is why higher education has to move from teaching -- specialization -- to learning -- generalization. From static (fixed knowledge) to active (learning). Higher education is the engine of humanity but it is sputtering -- declining enrollments, loss of trust, sense of irrelevance -- and needs to “tune up,” and engage human learning as we humans have always done with a greater urgency and challenge. It is time for higher education to adopt the mission it is supposed to serve: energize and guide human civilization.

I have already made some large-scale claims: that the scale of the problem humanity faces right now is beyond the readiness of young people to address because they are not being prepared for that scale of problem (or that pace of change); that higher education is, in fact, changing to help develop learners who can deal with the problems of this century but it is doing so haphazardly and in an uncoordinated fashion; that human evolution studies reveals more precisely the traits we have within us to deal with those problems; and that if higher education as a whole, in a unified way, favors those inherent traits, we can experience a civilizational resurgence in this century.

Despite promising trends in higher education, and despite the size of global higher education -- 19,400 institutions around the world -- it will do little to help in this crisis of our species if all those institutions work *separately* without coordination. If their main job is to assure that higher education maintains the status quo (making sure graduates get jobs), then higher education will have failed humanity and we will in fact die off in large numbers. This is a moment of decision: higher education in the world can and will move humanity to a sustainable structure *if it all works on the one great problem of this century: our survival based in a new human consciousness.*

It can do jobs *and* save us -- this is not either or. It is just adding a new coordinated mission for the entire enterprise.

### **Transfer -- Our Human Generalizing Trait**

“Transfer” is a key concept in learning theory. It is at the core of the metacognitive abilities higher education develops in its students. How does a learner (or a person) transfer what you learn in one situation to a new situation? How do you even know what you learn in a situation? How do you reflect on the meaning of that experience? These are the thinking skills at the core of higher education and they are our species’ key abilities.

We need to develop the whole spectrum of thinking skills involved in adaptation. It is time to move from *teaching* to *learning* as our starting concept for how education is designed: education is where human society is generated, among young people learning both formally and informally. It is time to bring forth not the comfortable specialized learning we’ve sunk into but return to our evolutionary ability for generalized learning -- adaptability: it is the other formative human trait. We can’t lounge in specialization any longer as both our natural environment and our self-animating digital technologies confront us with hard limits.

Specialization depends on stability and predictability. We don’t have stability and predictability and won’t for a century or more. We need to *transfer* what we have learned in our specialization centuries -- the industrial era -- to a different era that demands quick action.

Only “education” -- almost 20% of all humans are involved in education in one way or another -- can produce the changes needed now with our hard limits facing us. But only education *as re-designed* can do that.

Higher education, where I have spent my life, is divided into disciplines -- departments, research specialties, tenure track positions, sinecures -- and those disciplines are “jealous,” making sure your research is the preferred research of the department if you are to be granted tenure -- and this means, in essence, that scholarship is siloed at the worst possible moment in human history. At the very moment we need the second human trait that has allowed us to survive and thrive -- *generalizing* to solve problems and adapt -- we are sunk in *specialization* not only in higher education but in all ways in our society.

In learning terms, the move from specialization -- knowing very well how to operate in one situation -- to generalization -- knowing how to operate in a new but different situation -- is “transfer.” This is what human society must do: *transfer* its expertise and abilities from the “staid” industrial era to the new dynamic digital era which has higher speed limits and a shifting landscape.

Learning to “transfer” is a hallmark of college/university education. There is no more important skill today in the job market, but there is also no more important skill for our whole society as we reach our hard limits.

To make the shift from a “noun society” to a “verb society,” (reclaiming our nomadic mindset) higher education globally must lead. All 19,400 institutions of higher education/post-secondary education must commit to human survival and resurgence in this century. That commitment will revive the education enterprise as well as humanity. In the U. S. alone, nearly 25% of all global higher education institutions are located. It is not only a public sector but a business sector in the U.S.: many institutions run businesses and are themselves businesses, albeit non-profit (except for a few). It is a powerful sector of the American economy.

We can see encouraging signs of American higher education “awakening.” It is in a slump during the pandemic because of necessary deep adjustments, and it is in a slump culturally because of distrust and disappointment from student debt and job insecurity, but despite these slumps, American higher education will bring a resurgence to the U. S. and help in this century’s resurgence of the human species. The U. S. is set to resume leadership in the world regarding climate action and perhaps in other ways as well.

### **The Painful Paradoxes of This Century**

The myth of human omnipotence presents the most painful of the paradoxes. While we have the power to destroy almost all life with nuclear weapons, we die from an invisible virus. While we think of ourselves as the apex predator, in fact we are, once again, prey.

Our very crowning achievement, our large societies, has made us vulnerable to “community spread” of disease, a common fatal problem for a monoculture.

Our most painful paradox is that while we now believe we “own” land, own a particular part of the earth, and so therefore are no longer nomads as we humans have been for

almost all of our evolutionary history, the ecology we live in is changing so dramatically, we are faced with the same challenges as nomads: how to adapt to a new ecology constantly?

We have made ourselves into *stationary nomads*, a paradox so profound as to be ironic. We have compounded this irony by creating a technology (information technology) that amplifies the natural chaos with cultural chaos, the chaos of too-rapid change.

In other words, we ourselves have created our own evolutionary challenges as great as the Ice Age challenge. We have challenged ourselves to once again prove that humans can survive disaster. We are ourselves the paradox: it was not enough that we could survive all that nature threw at us, we had to up the ante as if our species had become bored with success: we have thrown down our own gantlet. We have both created natural chaos and the chaos accelerator technology that, still, may allow us to deal with being nomads-in-place.

We have set the terms of the new evolutionary game: ecological chaos and the technology to play the game that is itself a challenge.

### **Our Hard Limits**

Humanity faces two hard limits but we are not organized to deal with either one: first, the ecological crisis (“climate change”) that has already produced the Covid-19 pandemic and severe climate effects and, second, digital technologies that have accelerated the pace of change beyond the capacity of most people to adapt. Digital technologies have a life of their own just as industrial technologies did. Neither hard limit -- climate or technology -- is going away.

Over evolutionary time, 2.5 million years for the human genus, humans have faced hardships and have adapted because of a particular genius of being able to both specialize and generalize.

Applying that particular genius is a bottom-up solution, not just the top-down solution to climate crisis we’ve attempted through politics. The bottom-up solution has started but needs a push. We need to push toward a human resurgence in the face of crisis by activating the generative power of higher education.

The advantage of having higher education playing a lead role globally is that higher education can quickly commit to permanent change extending over decades whereas politics cannot. Politics is vulnerable to disruption and changing priorities; politics can be chaotic so cannot guarantee the long-term commitment to the deep changes needed in human society that higher education can. If we want to adjust to the needs of this century, we need to engage the entire global society and that will happen most reliably through a global program of human development in our educational systems.

### **The Scope of Those Hard Limits**

The 6<sup>th</sup> mass extinction on earth is underway as species die off because humans have altered the climate so abruptly. Greenhouse gas buildup continues. Human orientation toward growth is at its hard limit. This is widely understood and recognized, but our efforts to get past this hard limit have been preposterously insignificant so far. Just reducing greenhouse gas emissions, while necessary, hardly prepares us for a century of deadly climate and ecological crises.

Information technology is now our dominant cultural technology and it determines the pace of change and the quality of that change. Most people are not equipped to adapt to the changes in our economy and nature of work, so are being left behind, resulting in deep human divisions. This is our second hard limit -- a human technology that has brought about too-quick changes threatening the livelihood of a large number of people.

Neither of these hard limits will go away nor will they soften. Humans are not organized to deal with either one.

Why? Human society has specialized in growth, expansion, wealth accumulation, and have specialized within the cocoon of our built-out societies, our homes and cities and nations, our artificial human worlds. We also specialized for growth at the industrial pace of change measured in years. We let our nomadic selves *weaken*.

The industrial age cocoon is now threatened because the seas are rising and some of our cocoon will be flooded, because wildfires are burning and part of our cocoon is burning, because new diseases are spreading in the ecology we disrupted and those diseases are spreading around our cocoon, because storms are blowing our cocoon down. We have kept "nature" at bay but it is now out of our control. We know that.

And, in that cocoon, our technology has also created conditions hostile to many people who cannot compete or even survive in an economy so disruptive.

We humans have specialized too long -- centuries -- but that is not all we can do as humans. We also have the evolutionary ability to generalize (adapt) and right now we humans have to generalize like crazy to adapt to our hard limits.

We all specialize and generalize in our daily lives, so this duality -- specializing and generalizing is not mysterious.

We learn, as youngsters, how to buy something at the store on the corner. We learn that you pick something out, you pay for it, and you then can take that something with you. Then you learn, at another store, that the same procedure works.

You have generalized your expertise from your own corner store to another store. You may have specialized in how to line up and wait to be helped at your corner store in the particular way your store deals with customers. But, at the next store you go to, the checkout procedure is different. You have to adapt your specialized knowledge from your corner store to this new store -- you have to generalize.

Human tribes, in evolutionary time, were nomadic, moving to where the food could be found during different seasons. They might stay for a time next to a river where a certain fish was plentiful for a few weeks, then move on to a hillside a few miles away where a seasonal berry was available and then to another location where roots could be dug up. As they moved from location to location, the tribe would find ways to survive.

As humans moved across the globe, they had to adapt to new localities, new food sources, new dangers, new climatic conditions. They had to “generalize” what they had learned in their previous locations to new conditions. Humans, uniquely, have been able to adapt to all parts of the globe by using this specializing/generalizing ability.

Of all the special abilities humans have -- tool making, language, culture, creating large societies -- our most important ability right now is this specializing/generalizing ability. Except that we have had the luxury of specializing for so many centuries that we, collectively, all settled and bent on arguing with one another, have forgotten that we still have to generalize to survive. Our specialized cocoon protects us no longer.

In the last few centuries, we humans have specialized, at a species level, in *growth* and have therefore exploded in numbers and in our technological abilities. This specialized growth - - the industrial era -- produced its own end game -- ecological chaos --and now we no longer have our cocoon and must generalize our way out of our own self-imposed hard limit.

We can do this. It is our species’ genius to generalize ourselves out of hard limits. How else did we survive the glaciation that occurred 20,000 years ago?

But, to generalize now, we have to get out of our comfort zone of *fighting* with each other. We have specialized in growth and one of our specialties has been war. But other humans are not the actual problem. Our “national security” is threatened by climate, not people. Let’s lay down our cards/arms and end the game of politics and war.

### **Civil Versus Civic**

Specialization, by another description, is “being stuck in a rut.” Specialization has produced a vaccine in 2020 to combat Covid-19 (SARS-CoV-2), so we obviously still need specialization, but not to the overwhelming degree of today. I am not arguing against fields of research. I am arguing in favor of a new learning design in higher education that inculcates a creative cohort of generalists who can re-shape society. Specialized research must also continue of course.

Civic society benefits from specialization because civic society (our vertical legal and governmental order) functions on wealth and power. But civil society benefits from generalization -- horizontal cooperation -- because civil society aims for (or can aim for) the common good. In 2020, Americans voted for Joe Biden for president to counteract the raw selfishness of Donald Trump, the raw greed and narcissism: we can be saddened that

we have to vote for someone to protect us from the excesses of civic society (concentration of wealth and power in a few hands).

A definition of civic and civil society:

Civic Society: is the sphere of a person's public life within the state that includes his or her role as citizen, i.e. as voter and political agent, and as someone beholden to governments' laws and regulations. In this way, a person's life in civic society is abstract: all citizens (theoretically) have equal identity and status in this realm and their personal uniqueness and life circumstance are irrelevant.

Civil Society: is the sphere of a person's public life that is exempted from state definition, in which a person's uniqueness and subjectivity is manifest through personal choice, expression, and affiliation. Religious institutions, commercial firms and organizations, community groups and cultural affiliations, nonprofit and advocacy organizations, universities and educational institutions, various membership organizations, and arts organizations are all vital spheres of civil society. Civil society thus allows for a multitude of public spheres to emerge in which diverse voices can share their experiences, express their opinions, and organize others to influence public policy and other civic society institutions.  
<http://loreguide.org/info/civic-and-civil-society>

Civil society -- the whole non-profit sector along with corporations and government agencies working collaboratively toward life-positive goals, and across borders, can move global civilization toward a sustainable model of organization. Civic society continues to fail to do that.

It has been reassuring to see the global medical community working to share information as doctors and researchers hunt for a cure. Yet there is no denying that this border-blind enemy [the SARS-CoV-2 virus] appeared just when the term "de-globalization" was entering our lexicon — thanks to the rise of nationalism, protectionism and general skepticism about cross-border cooperation of all kinds.  
[https://www.washingtonpost.com/opinions/global-opinions/its-time-to-return-to-globalization-but-this-time-lets-do-it-right/2020/04/27/b5e8b442-88b4-11ea-8ac1-bfb250876b7a\\_story.html](https://www.washingtonpost.com/opinions/global-opinions/its-time-to-return-to-globalization-but-this-time-lets-do-it-right/2020/04/27/b5e8b442-88b4-11ea-8ac1-bfb250876b7a_story.html) King Abdullah of Jordan

Instead of "de-globalization" — as some are advocating — I see us all benefiting from a "re-globalization." This time, though, we must concentrate on getting it right, aiming for a renewed integration of our world that centers on the well-being of its people. A re-globalization that strengthens and builds capacities within our countries and ushers in true cooperation rather than competition. A re-globalization

that recognizes that a single country, acting alone, cannot succeed. One country's failure is every country's failure. [same URL]

## **The Futility of Top Down**

In this Report, I distinguish between civic society -- government and laws -- and civil society -- our actual daily lives. I claim that civic society by itself has failed, so far, to address climate change in any significant way. But, just since I started writing this Report in early 2020 (it is now a year later), local governments in New England and the organizations influencing local governments in New England (where I live) have become incredibly active in addressing mitigation -- reducing fossil fuel use through legislation. Environmental advocacy organizations in Rhode Island and New England have seen their memberships explode in numbers. I sit in on Zoom meetings of local and regional non-profit environment organizations and see young women (it's mostly women) who not only work full time in their jobs on behalf of the environment but run other non-profits as volunteers in the evenings and weekends. There is an upwelling of action in New England (and presumably around the U. S.) on behalf of mitigation.

So, I have to qualify all that I say in this Report about the failure of civic society because my remarks apply to civic society at the ***national*** level but seemingly not so much at the local and regional level. While ideology gets in the way at the U. S. national level, it does not seem to at the local and regional level. This gives me hope.

Still, despite the local and regional activity, it is still focused on *mitigation* and not also on adaptation, resilience and sustainability (albeit with mitigation we do have a better chance to arrive at sustainability).

I am seeing, therefore, a resurgence in Rhode Island that is what must become the norm: young people creating a more conscious society, a more reflective and responsible society, a society aware of the whole panoply of bad practices humans have engaged in. It is happening in Rhode Island and New England, though this local and regional work does not yet involve higher education as a way to formalize and perpetuate the reforming of society.

## **The Comedy of National Politics**

Donald Trump was the product of our comedy called "politics," the game we play as a way to avoid making any changes in our cocoon -- that is, blame those we elect who then can deny major problems on our behalf. Politics is, in part, the game of denial. It is the game of distancing ourselves from our own challenges. That game is over.

Top-down *legislation*, of course, is necessary. Laws can be made permanent through politics. Laws are very useful for mitigation -- limiting fossil fuel emissions, for example -- but are not very useful for adaptation, resilience or sustainability - the latter three require societal changes. Legislation is critical but can also be superficial if society does not itself form a new consciousness.

## Resurgence

How to describe higher education's role in resurgence? "Lead" is the wrong word to use for what education will do -- how can one institution consciously reform culture? A better term is "infuse," as in "*infuse* the human population with young people adapted to this paradoxical century." The changes we need to make as a global civilization are fundamental -- a civilization based on "growth" is very different from a civilization based on "sustainability." We can see growth in new parts of the economy that are sustainable. Our over-all bottom line might not be GDP but might become PPM (parts per million), or GDE, gross domestic emissions.

If education itself reforms, culture can and will follow as a result of an infusion of the creative cohort. Education can address the immediate need for humanity to survive and can also, at the same time, reform culture and civilization. It will do this by developing the creative cohort I've been talking about. This creative cohort will resume the nomadic trait humans have to adapt to anything. They will do this by experiencing learning in a constantly challenging series of real-world problems while they are enrolled in formal education.

This century of crisis -- ecological disarray and destructive weather effects including rising sea levels and pandemics -- forces humanity to re-think its entire enterprise. There is no one solution, no short-term adjustment, no partial reform. Instead, humanity must have a new consciousness. That can only come from education. But education itself is of the past - - it is not structured around nor based on beliefs appropriate or useful for this century. It is centered on a noun -- "knowledge" -- not on a verb -- "learning."

This century is all about moving from nouns, the language of the industrial era, to verbs, the language of the digital era and the climate crisis. This century is all about humans taking up life as stationary nomads, staying in place while moving in our minds so we can adapt, constantly adapt, to changes we have created ourselves. We must be nomadic thinkers.

A culture reflects its driving technology. The technology has changed -- to digital technologies -- but thinking has not, or not yet. Our consciousness is of the past, not of the present. Information technology drives change at a much faster pace than during the industrial era -- and thus it is disruptive to all aspects of society, culture and the economy.

Starting with education, in particular post-secondary education -- since it is able to change tomorrow, or the day after -- humans can form a new consciousness. This century needs a resurgence of the human soul in the face of potential extinction: humans have adapted to everything; we can even adapt to the earth that we have altered. In doing so, our species will experience a resurgence.

This is not about politics, although politics will play a major role; it is not about religion, although fundamental beliefs about who we are as humans is a part of it; it is not about business or capitalism but *how we create* wealth and value is, of course, a part of it. By changing how young people learn, we will change humanity.

## **Humanity at this moment:**

We are, collectively, guilty of denialism: we are facing extinction but our thoughts are on continuing to do what brought us to extinction.

The climate has *already changed*, the biosphere is *already in free-fall*, the 6<sup>th</sup> mass extinction started years ago, and human civilization *is already* dealing with record fires, storms, and novel viruses. What more do we need to have happen to recognize that our civilization is in crisis right at this moment? What one disaster would make us all say “ok, ‘climate change has started’”? Does anyone know? Because, in actual fact, we are already past “climate change” and into the crisis and chaos predicted for years.

And, once we all recognize that we are in crisis at this moment and will be for the rest of this century, we can start on the resurgence. Addressing the crisis will also mean we can, possibly, have a new civilization, a resurgence of humanity in this century.

## **Can We Humans Actually be “Sapient”?**

We humans will resurge in the face of a disturbed biosphere by learning. Learning is what humans do, individually and collectively. Just being alive, for humans, means learning. We humans are able to do things no other species can do. This doesn't mean we are more mighty or dominant physically, as individuals, but it does mean we can support a large society dependent on our own technology and be dominant in that way. We are dominant *in the collective*.

We humans have arrived at this level of capability by learning. We learn from each other, we learn from the collective knowledge contained in our culture, and we learn from problems. If we humans are alive, we are learning.

But, the culture of the moment wants *conformity*, wants its collective beliefs to be perpetuated, and tends to sanctify those beliefs. Our educational systems *bend* learning to those beliefs, some of which are based on evidence and some of which are based on a consensus derived from *preferences*, not necessarily evidence-based. Our educational systems, as a whole, do not encourage learning itself but a particular kind of learning and learning within constraints. I say this as a retired faculty member so I say it with reluctance and care. But, I do say it. I have to because those constraints leave our greatest resource -- young people -- without the capability of dealing with this century.

As long as our world was relatively stable over time, our culture bending learning to its purposes and preferences -- often despite reality -- was ok: we survived. But, no longer.

Doing “ok,” means continued exploitation of resources and continued growth of the species in numbers. We have reached the limits of exploitation of natural resources (or at least the kinds of natural resources that have upset our biosphere) and the limits of our growth in population.

We face the rebellion of our environment so fierce that we could experience damage to our civilization and its systems during this century. To survive this century, we need to move from *teaching* (our culture bending learning to its purposes) and toward *learning -- discovery* --the freedom to find out for yourself. Nothing is stable any longer -- “teaching” is counter-productive at this point -- instead teachers need to be creating conditions for what we might call “free learning.”

Free learning is problem-based learning or project-based learning or authentic learning or active learning. It is design learning. Free learning is when learners are responsible to their peers in groups for their grades; free learning is when students are “free” to fail. Free learning is when learners are responsible for their own learning and *own* that learning. Free learning is when teachers are NOT teaching but getting out of the way. Free learning is when teachers only set the learning context but then mentor the process of addressing real world issues or problems in that context. Free learning is when teachers *design* learning experiences for students.

We humans will fail if we continue to just teach; we will succeed if we unleash the power of learning to address real world problems: that is, if all learners are engaged to some extent in working on this problem: **“how can human civilization survive in this century and become sustainable?”**

“Teaching” at this moment is treading water. We are treading water in higher education while a tsunami of natural effects is swamping us. Teaching right now is a form of denialism. As the saying goes, “when knowledge is stable, teach; when knowledge is changing rapidly, learn.” That applies to faculty as well as students.

I call on higher education to make its mission, collectively, to create learners who will change the basic structures, beliefs and habits of civilization during this century. Politicians, we have seen, will not fundamentally change human civilization because politics is about maintaining the status quo. The resurgence will come from the 250,000,000 students and faculty and administrators and staff who make up higher education -- “post-secondary education” -- in the world. It is a question of life or death, literally.

### **Humanity is a (Civil) Collective**

The collective got us here and the collective is facing extinction: it is the collective that must re-make itself; politics does not create culture; it’s the other way around: politics is a refinement of culture, a product of culture, often an expression of the worst instincts or impulses in the culture, often a *distancing* from those impulses, a way to express them without guilt. Donald Trump expressed the anger and frustration of a large segment of the U. S. population who have seen their income decline for years (MIT study: <https://www.nytimes.com/2020/11/17/technology/digital-economy-technology-work-labor.html>) the report: <http://workofthefuture.mit.edu/wp-content/uploads/2020/11/2020-Final-Report.pdf>

Our collective, our culture, will not fundamentally and totally re-imagine itself just because it *should*. It will do that because *there is no other choice*. Human civilization, the collective, has lived with scarcity and a struggle to survive for almost its entire history -- and so survival and growth have been at the core of the collective. Only in the last 100 years has that core of the drive for survival and growth become destructive. We went from scarcity to glut, from too little to too much, from struggle to excess, and that change happened too fast.

Learning is what humans do. Our species has been called "*Homo sapiens*" but, in my mind, "*sapiens*" is not *wise*, but rather *clever* or *handy* or *smart*. No creature that fouls its nest is "*wise*." At this moment, however, we do need to be "*wise*." Both clever and wise.

We humans do, in fact, learn, whether we use our learning stupidly or not. For humans, learning is like breathing: it goes on all the time. This basic fact is vital to us now. Learning is not something that turns on in a classroom and then turns off again. Just as we breathe all the time so we learn all the time.

This basic fact that learning is a constant process, critical and natural -- is what will now lead to resurgence. It will happen by re-constructing all education on the fact that life IS learning and education works by tapping into that natural torrent, not by damming it up as we do now, but by accelerating and directing it. In particular, directing it at the Great Human Problem of this century -- climate chaos and human survival.

Resurgence must happen or we instead face "The Great Extinction." The climate crisis is here. We can learn our way through it.

### **Who Are We Humans?**

To understand our dual threats and the resurgence, we need to address a very fundamental question: who are we? To answer this question so vital at this moment, we need to not just think of the past four years, or just the past century, or even the history of nations, but we have to expand our context to who we are as a species -- this moment demands "big context" thinking because we are facing "big context" problems.

We humans are a cluster of traits but the question is which traits can become dominant.

We are at the end of the industrial era, as is widely accepted, but the industrial era is also the end of our 2.5-million-year celebration of "tools" or technology or weapons. We are at the inevitable end of the 10-thousand-year agrarian era of surplus-driven excess; we are at the end of the 300,000-year growth of sapiens' large and complex societies because we have reached the limits of supporting nearly 8 billion humans on earth. We are at the end of one phase of globalization that has had unfortunate consequences and necessarily at a new moment of globalization. I could go on -- this moment is a big context moment full of foundational changes and we therefore need to think big context.

Are we the apex predator? That could be argued. Or an invasive species? That could be argued as well. Those are two sides of the same myth: on one side, we like to think we humans are powerful and “the fittest,” but on the other side, we hesitantly admit we have killed off a lot of species and so we should feel guilty about our destructiveness. Some might even say we are so destructive we are not worth saving: “if we have so altered the climate as to damage the earth, we deserve to die!”

But that myth of being “the fittest” is wearing thin: the Darwinian view of human, or what we ascribe to Darwin as “the Darwinian” view of human -- “a dog-eat-dog world” -- is now moot. We are neither the apex predator nor the invasive species but a monoculture at risk of extinction. The hunter has become the hunted.

The scale of our ecological destruction is so great it is beyond our ability to reverse; we can only mitigate the damage over a few centuries. We need to act for our own survival as a species. Humans are worth saving. We can get through this century and we can actually experience a resurgence of our global civilization. Let’s take this problem/opportunity seriously.

The other fundamental fact that we humans have to face is that politicians alone will not realistically do anything to help with the ecological crisis (or the technology crisis). The threat is to our survival, so passing the buck to politicians is admitting that we won’t do enough, that we will stop with mitigation and not go on to a new human consciousness.

This sounds extreme, but think about it -- what have politicians done since 1988 when “climate change” was revealed and indisputable facts supported it as a major threat? (Most recently, the U. S. left the Paris climate accord and then re-joined, showing how politics may be too chaotic to address a permanent existential threat).

Let’s keep on the politicians, but let’s also be realistic: this is a civilization-wide threat and only the whole civilization can deal with the dual threats -- “saving the earth” and “saving us.”

## **Politics**

So, let’s start with acknowledging that politics alone will not address this global problem (but note the caveat I made above about local and regional politics -- local politics are different from national politics). The Paris accord or any other agreement addresses only mitigation but not adaptation, resilience or sustainability. This Report suggests a way to address those other 3 parts of the problem. One can mitigate and mitigate and still die, to paraphrase Shakespeare. (“Mitigation” means reducing greenhouse gases in the atmosphere which will take centuries; humans, meanwhile, could die out, so we also need adaptation, resilience and sustainability).

This Report makes clear we have a hundred-year problem (reversing buildup of greenhouse gases) but we expect political leaders who may have only *4 years in office*, give

or take a few years, to do something. A long-term problem of this scope cannot be reliably or effectively addressed in fits and starts and reversals.

In other words, we have to question whether national political leaders can have any lasting effect at all. We have a *dramatic imbalance between problem and solution*. Our global ecology is out of balance and it is no longer amenable to human life. If politics can't fully address this problem, where do we turn?

When a system is so out of balance as is our global ecology -- our life system -- humanity needs a steady and consistent hand, year after year, to right the balance *over a century*. Humanity as a whole cooperates at a global scale only selectively and certainly not on a problem of the scope of the climate crisis. We humans did address the hole in the ozone layer by simply emitting less of the gas that was causing it, but that was a relatively easy fix. We now have to face a problem demanding a fundamental alteration in how humanity functions.

In this Report an approach is offered that will reverse not only the imbalance between short term political solutions and the long-term problem, but the imbalance in our global economies so that humankind can survive and thrive.

[A side note: the rollout of the vaccine against Covid-19 in 2021, with wealthy nations hoarding the vaccine, and within wealthy nations, privileged people "jumping the line," we see that cooperating within human society does not happen without strong guidelines. We similarly cannot trust climate MARS to political leaders solely].

## Getting to MARS

MARS is **mitigation, adaptation, resilience and sustainability**, the four goals necessary for resurgence in terms of the ecology. I am hopeful we will arrive at resurgence because humans have the resources and proven ability to adapt to almost anything. I am also hopeful because I am offering, in this Report, ways to approach our problems that, if implemented, will lead to not just a survivable world but a *better* world. We can organize by doing MARS. But, first, more on the scale of the problem.

Eco-chaos: It is not global warming, not climate change, not any of the vanilla terms we've been using and largely ignoring for decades: we are now in a period of **ecological chaos**. Humans have so upset the balance in nature -- our ecology -- that we can no longer predict what events we will face each month and each year for decades: fires, droughts, crop failures, disruption of global systems, pandemics, heat waves, storms, floods, and so on.

Chaos means *unpredictable* weather and climate effects and events that then lead to unpredictable consequences including, potentially, a quickly cascading effect-on-effect series of events leading to mass human extinction. We can't fool with chaos.

As this is happening and threatening the existence of humans, at the same time politics and government -- our civic society -- is proving it is not quite up to the task. Governments

pander to the common instinct to deny and hope the problem goes away. We humans need to alter how we are facing eco-chaos.

MARS -- mitigation, adaptation, resilience and sustainability -- encompasses massive efforts but each is a different part of the overall plan for this century. MARS is underway in a patchwork fashion, a so far futile effort (the Paris Climate Agreement, for example) to re-balance our life system.

### **Lacking Urgency**

Though scientists present us with the need for urgency to preserve humankind, that urgency is not expressed in action.

We can't set goals for 2050, as politicians are doing, because we simply can't confidently assume our society will be functioning the same way in 2050 as now. Saying "carbon neutral by 2050" is almost like saying "we give up." It is too weak a goal; it does not recognize the need to take dramatic action immediately.

At the same time, global higher education is suffering its own chaos brought on by the pandemic and other continuing underlying issues that are familiar to all who care about higher education. Some say higher education has become irrelevant. And, yet, global higher education is where we turn to lead and populate MARS efforts around the world. It is not irrelevant but *vital, indispensable*, our best hope.

The Last Humans Project has one solution for both humanity and higher education: the solution is, simply, learning how to live with chaos. Higher education must develop in students the ability to deal with chaos! Yes, we can actually do that. By the education enterprise re-thinking itself and confronting eco-chaos head on, it will also, coincidentally, create a far better learning system. We humans have produced ecological chaos through our mindless quest for growth, in part and ironically driven by education, but now, if we quickly turn education to addressing the great human problem of this century, education (the idea of how learning occurs) can repair itself and also repair the imbalance during this century. Education, re-directed, will save humankind.

### **A Creative Cohort**

Higher education, the sector of education I know best, can help with both its own chaos (loss of revenue, declining enrollments, and an increasing perception of its irrelevance) *and* ecological chaos: it can create an informal but powerful **creative cohort** of students who are engaged in environmental action during their college careers, or who have been engaged with multi-disciplinary active learning, sometimes in coordination with primary and secondary education, and lead humanity to adapt to global ecological chaos. If this cohort is made up of just 10% of students at all levels of education, it would be a cohort of 200 million young people (primary, secondary and post-secondary) in all parts of the world. This cohort would activate a MARS project in all localities in the world. This would be a groundswell of activism on behalf of life.

The cohort is not just a temporary commitment, but a life-path -- it is a career path, a way to make a good living by helping to transform humanity from its dead-end economic systems to a sustainable path. It is a new jobs initiative, a new learning initiative, a way for humankind to be sustainable over time. In other words, you will be part of the cohort if you are studying certain courses, are heading toward a career in a renewable energy field, or in environmental work, or in building resilient communities, or in any endeavor changing human activity toward sustainability.

The cohort may follow certain learning paths starting in primary school that lead to an enlightened citizenry; it may receive badges for some kinds of work; it may be certain majors or courses of study in higher education; it may be led by existing organizations and associations -- in other words, the cohort may be a human lifeline to the 22<sup>nd</sup> century. The cohort will implement MARS programs in communities everywhere.

Not only can education form this cohort, it must. Humanity has a shared global problem. The cohort would be a massive global "workforce" to enlist in solving the great human problem of this century.

The cohort is not *instead of* formal learning but is a *path to* better and more pertinent formal learning: the course of study for the cohort will still lead to jobs, but also to careers, and to a much better world. Engaging students in addressing the great human problem of this century is a way toward a renaissance for learning *and* for humanity. The challenge is not in implementing this new array of problem-based learning at all levels of education in the world, because we can easily do that, but in *coordinating* the cohort around the globe to work toward shared goals. How do we get education, primary, secondary, and post-secondary, around the world to agree on a shared agenda?

Here is the thumbnail: the human genus, at least 2.5 million years old, has spread over the earth as a number of different species (15 to 20 separate species) and has managed to adapt to all ecologies on earth, save Antarctica, by being both specialists and generalists. This is important: we adapted to each ecology by *specializing* in survival strategies in each -- whether hot, cold, dry, or wet -- by learning specific abilities and using specific tools to thrive. We were specialists. But, when we nomadic humans had to move to a new ecology because of population pressure, we humans were able to transfer skills from one ecology to another by *generalizing principles*. We have the ability to both specialize and generalize.

We were good at the narrow requirements of one locality but then quickly adapted to the narrow requirements of a new locality: nomadic thinking is adaptation, thinking on your feet, situational thinking. We have it in us.

This is how human groups survived, thrived, and spread over the world.

But, now, the global ecology we have specialized in and become comfortable in and can't imagine ourselves not enjoying as we live in our houses and drive in our cars and fly in our airplanes -- we thought we had tamed nature and that we humans were masters of the

earth -- is changing in ways we can't escape in our ecological cocoon. The cocoon (cities, towns), it turns out, are not as self-supporting as we thought: Nature is still necessary and if nature is in chaos, our cocoons have collapsed. The pandemic does not care about our cocoons.

The advantage of the cohort idea is that it can start immediately and can have an effect immediately. It is not pie-in-the-sky but reality: in some ways it is already happening.

Higher education in the U. S. and elsewhere during the pandemic has had to tighten belts drastically, has had to eliminate courses of study, layoff staff, even lay off tenured faculty, as enrollments are down and revenues shrinking: this is a time to re-consider the whole enterprise. Do not educate students to deal with a stable, predictable world, but to deal with constant and deep changes: the key cognitive trait is *transfer*, a form of metacognition at the core of being a generalist.

*All education must have an element of reflection on experience and transfer of principles to a new experience. All education must be interdisciplinary in spirit at least because the great problem of this century is interdisciplinary.*

All humans have to be generalists in this century. We have to be able to adapt and that ability requires creatively transferring what we know from the disappearing stable ecology we've known to the new chaotic ecology we've created. This challenge is almost unthinkable: how do we adapt to a global ecology that has changed so radically and that demands an entirely new economic model?

Is higher education organized to produce generalists? Not really. We've had the luxury of working in narrowness, in siloes, living in a "tame" world. But, now that has changed. Now required: major in a particular specialty but learn to think how that specialty will change and how to adapt to that change. How? Every "specialty" becomes an *interdisciplinary* major: if you learn how to take ideas from various thought-siloes and apply those ideas to one general interdisciplinary problem, you can become comfortable with *transfer*.

Human culture must change in many ways. The primary change is in beliefs: realizing we must and can act to mitigate chaos effects. But, an entire spectrum of beliefs and attitudes has to shift radically so humanity can live in balance with the world. At some future point, our global ecology may become once more stable, not chaotic, and a re-shaped, re-engineered, and re-thought human civilization will have a future.

I don't need to look off 10 or 20 or 40 years from now, I just need to look at the current state of our world to offer a way for humanity to gather and think and plan and act. What I offer in this Report is so obvious that I am not clear why others have not already offered the same. We humans are at the beginning of a great new enlightenment that will bring us back in balance with nature.

All that is included in this book, all the ideas and suggestions, is inspired by my 4 years of research in human evolution studies (taken up post-retirement), an amazingly rich field of

study in all its scholarly iterations. After all this reading and reflection, I can boil my view of “humanity” down to the following brief poem:

### **Stumbling onto our Past**

Primates walking on 2 legs  
On the Savannah, looking out  
Over the Grass.

On 2 legs picking berries from a dry bush.

Or, holding hands with a child.

From hand to hand, sharing a gourd.

Wandering, they find new plenty  
And sit in circles as they chew.

And chew.

For two and a half million years, this primate lived  
On the plenty of Africa,  
Differentiating into many species as it wandered  
The continent, its wandering leading it  
Toward the north and out into the  
Levant.

And outward from Africa over the earth.

A *Homo* somewhere by chance,  
Using a rock to grind seeds for food,  
Happened to hit two rocks together  
Flaking off part of the rock  
And used that sharp flake to cut  
Through the meat of a tuber.

A new being had emerged: the tool maker.  
The earth did not know that its rock,  
Cleaved in half,  
Would eons later darken it and bring  
Death to its creatures.

Hands shaping rocks  
Moving in repetitive motions  
Abstracted into sign, became  
A syntactic code that unlocked a force

That then unlocked the nuclear  
Power latent in all matter.

These rock-shaping species moved over the earth.  
They went east and east and east and found all  
Continents.

Yesterday, as it seems in evolutionary time,  
The last human species -- all others had  
Disappeared from the earth -- made a fatal decision:

“I will keep this fertile land for my own  
And defend it from others as I produce  
Food for my children.”

The earth, home to millions of natural species,  
Bounteous, with plenty for all, blinked at  
This hubris, wondering how one creature  
Owned the earth ahead of all other species.

That creature grew so numerous through  
Agriculture that it ran out of space.

Some left to find new land to claim.

In a new land to the west, they  
Stumbled onto *themselves* who had gone  
East long ago instead of West.

This east self believed God owned the earth.  
But the proud west-expanding self said “no.”  
“We own the earth.” They also said they  
Owned other selves. They believed God  
Had chosen them to be masters of the earth.

And hubris led these masters to build  
Great machines that gouged the earth  
And burned the rich fuel of the earth  
To darken the skies and alter all life.

These masters do not see their error  
Or their danger. God owns the earth  
And the earth-God is not pleased.

**We Signed Before We Spoke**

Within this poem is my claim that the first human language was sign language, an obvious conclusion for someone like me who was around deaf people for 30 years and who used sign to communicate with students (and who pursued a post-doc in linguistics), and that we humans started using language at 2.5 million years ago and that us inventing language that long ago is the source of our abilities, not some recent miraculous cognitive shift -- language is miraculous enough. Placing the origins of modern humans 2.5 million years ago when they invented language seems obvious to me -- how could we have passed on tool making skills and fire making skills and cooking skills for a couple of million years without language?

“Human brains and technology have been coevolving for at least the past 2.6Myr since the appearance of the first intentionally modified stone tools . . .

[“https://royalsocietypublishing.org/doi/full/10.1098/rstb.2008.0001](https://royalsocietypublishing.org/doi/full/10.1098/rstb.2008.0001)

But, I will leave it to specialists in human evolution studies to *disprove* this claim of language origin at the same time as the first tools: the story of humanity does not make sense without recognizing that humans had sign language for most of our evolutionary history and that our sign language ability morphed into spoken forms as our vocal abilities allowed. This report is not about language origins, but it is based in human evolution, and so I am interested in a story of human evolution that makes sense.

Until human evolution researchers get past their bias against sign language as a real language and one that realistically preceded spoken language, all speculation about the story of human evolution is shaky. If language is not the source of “human,” then what is?

So, let’s assume language is in fact humankind’s most important ability and the reason why humans have become the world’s most numerous large animal. Seeing humans as language-using beings primarily and not weapon-wielding beings changes our “Darwinian” view of ourselves as social, not aggressive -- we have predominated because of communication not brute strength, because of words (signs are “words” too), not weapons.

### **Aspiring for Hope**

To change the basic assumptions, beliefs, attitudes and aspirations of all humans on earth so we humans can live in balance with the earth, we need the creative cohort, but we also need to engage *personally* with MARS -- the goals of Mitigation, Adaptation, Resilience and Sustainability at a personal, local, regional, national and global level. The usual “they” -- political leaders -- will not address the eco-crisis alone; it is mostly up to you and me. Organizing society around MARS goals demands global cooperation through civil society. This means our species acts not competitively as we have done during our whole history, or not AS competitively, but more cooperatively in a collaborative effort.

Engaging with MARS can save the Earth. MARS is a plan for preventing the extinction of human civilization in this century. Right now, humanity is heading toward “blissful extinction.” Blissful extinction is denialism -- if we ignore a problem, it will go away. In one sense, “blissful extinction” is the best way to describe what global politics will bring us to.

Blissful extinction is an inchoate goal -- not really formed: an unconscious goal. It is not said but strongly implied: "we can still wait longer; the solution is too painful; we will lose money if we make fundamental changes; someone else will solve the problem; someone else will sacrifice; we can get re-elected if we campaign on denialism;" and so on. It is the trap of the status-quo. We cannot continue to accept the unspoken goal of blissful extinction.

Politicians stay in power if they don't disrupt the status quo too much. We are faced with a global problem that demands the status quo be overturned but politicians cannot always operate at that extreme.

add ref to : <https://www.insidehighered.com/views/2020/10/22/colleges-should-encourage-students-serve-contract-tracers-their-communities-opinion>

### **Are We a New Species?**

Tools have created us -- even language arose from teaching novices how to make tools. This is our human **big context** period -- because we have to think big context -- and this period starts, in evolutionary history, with the first human tools 2.5 million years ago and leads to now, the beginning of a new human species ***Homo digitalis***. Tools led directly to language and then to culture and large societies, and that is the history of human civilization in 12 words. We are now "*Homo digitalis*" -- a term now appearing in various places. The new term is in recognition of digital technologies.

This report is about the unprecedented opportunity for humanity to go forward not blindly, as we have done, but intentionally, as we must do now. Education and civil society, in coordination with civic society, must lead the way.

### **Let's Be Civilized: The Second Human Era**

*In California, fire tornadoes broke out this year. New studies show that more inland areas in the U. S. are prone to flooding than we had thought; coastal areas around the world are vulnerable. We have seen global supply chains disrupted this year (2020) and must realize those supply chains are more vulnerable than they should be. Globalization has only made our species more vulnerable. Our situation is dire but not unsolvable.*

*In fact, humanity has the opportunity to create our second era. This Report and the Project offer a way for humans to re-create human civilization so we can live in harmony with the earth instead of being at war with the earth.*

*I announced The Last Humans Project at the Association of American Colleges and Universities annual conference in Washington DC in January 2020. Last Humans was and is focused on global higher education serving as the lead institution in civil society for human resilience and sustainability during the climate crisis.*

**Colleagues in Education:** let's get together, world-wide, and move our communities toward sustainability. If we do this as a global plan, not only will our communities in every country be more resilient to climate change damage and disaster, but we can create a new consciousness through "Resurgence thinking:" engage a proportion of students in real-life sustainability work (such as in internships and other forms of active, real-life learning) in your community so they can participate in and lead the whole community in each locality toward sustainability planning. This is a new *consciousness* because it moves away from *exploiting* the earth to *cooperating* with the earth. Sustainability is the **great learning opportunity of the century** and may actually preserve civilization toward the goal of a more "humane" relationship with earth.

There is not one way to create sustainability in all communities, but there is one way to form human resources in all communities to address their own specific challenges. That one way is through education. Environmental education is, in fact, growing rapidly; in higher education, environmental studies as an interdisciplinary course of study is quickly expanding. The MARS movement is underway. We need to accelerate it.

I have spent my life in higher education, so I know that global higher education, all 19,400 institutions around the world, have both the human resources and the mindfulness to lead humanity through the climate crisis, a problem beyond the capacity or inclination of civic society (governments) alone to address. It is a global problem, a human problem that is beyond politics as usual. Please consider the approach offered in this report as a way to not only survive this century but to emerge as a new kind of society.

Higher education can change most quickly so must lead. Primary and secondary education can change as well, perhaps inspired by, and in cooperation with, higher education.

Civic society, the government society we have now -- government determining to a large degree the character of a state or nation -- has prevailed in one form or another during human evolutionary and historical time up to now. We face the *problem* caused by this social organization -- the climate crisis -- while, ironically, this way of organizing society has proven to be unfit to fully solve the problem: it can't undo what it did.

Social organization around accumulation of wealth has an Achilles heel: it is too good at exploitation of the earth and thus fails at sustainability, because it comes up against its own hard limits. Right now is the million-year pivot point for humans. We all need to be less "vertical" (civic) and more "horizontal" (civil): working within vertical hierarchies maintains the status quo; working horizontally across hierarchies brings change. Vertical is wealth and power; horizontal is social good. We need an interdisciplinary (generalist) approach that we might call horizontal learning (generalizing for out of the box solutions).

### **What Kind of Learning Aligns With This Century?**

The following is about young learners, not college students, but applies to our discussion of "the classroom:"

Ms. Levine taught high school English on the South Side of Chicago before Stanford. She said that despite the life of privilege she sees around her now, “the danger we’re exposing students to in English classrooms is just as bad for kids in Palo Alto as for kids in Chicago with many fewer resources. We’re teaching them that literature is not for them, because they aren’t a part of what they read. I don’t mean because they feel, ‘I don’t see Black and brown faces in my literature,’ but ‘I’m supposed to write an argument about a motif,’ and not do what kids do outside of the classroom: read and enjoy the experience.”

<https://www.nytimes.com/2020/09/04/opinion/sunday/empathy-school-college.html?action=click&module=Opinion&pgtype=Homepage>

“Remote learning” can then be considered as what happens in the classroom: we distance students from their natural learning patterns. The pandemic has forced higher education to rethink the structures of learning. This is very difficult, of course. And many students are missing real life learning through social interaction on campuses or school playgrounds, so I don’t mean to demean classroom learning but only to re-consider how we see it. We academics are learning a lot about how students can learn outside of the classroom. This can be a valuable time despite the loss of live social interaction.

Learning designs are partially shaped by an implicit religious and philosophical bias that is *unacknowledged* (humans are inherently sinful and will not learn on their own), and partially shaped by an understanding of the essence of “human” (humans are “Darwinian”). This is the point of the entire argument in *The Last Humans Project*: we can improve learning by getting past those biases at the same time that we enlist students and teachers in the great human problem of this century. Or, “we can improve learning at the same time *because* we enlist student and teachers in the great human problem of this century.”

### **Agrarian Sin: Humans and The Earth**

How did humanity become so destructive of our own ecology, our earth? We have despoiled our own habitat. I don’t think any individual human thought to despoil it but, collectively, we have done so. Our drive toward greater comfort, more food, and larger societies has led to unfortunate consequences. Even though humans killed off large prey animals before our species turned to agriculture just 10,000 years ago, we did not wreak havoc on the earth until just the last few centuries. How did we get onto this path of destruction?

### **The Actual Original Sin -- Agrarian Addiction**

The idea of original sin is perceived as a religious belief that some people abide by -- that we humans are “bad.” In Eden, or what I am calling “Eden,” the earth up until 10,000 years ago, the sin we humans literally committed was a new belief that we “owned” the earth. The idea of owning the earth is one way to understand human “sin.” It was a “sinful” thought that led to disastrous outcomes.

Humans emerged in Africa around 2.5 million years ago. For almost the entire period of human existence, we were nomadic. Only in the last half of a percent of that time -- 10,000 years -- have humans engaged in agriculture. For 2,490,000 years, we humans lived by sharing the earth with all other creatures. Only very recently did we start believing we “owned” the earth and that belief has brought about our approaching destruction. Let’s step back and think about that. If we “own” the earth then we can do what we want with “our” property -- and that is hubris at its most extreme.

Agriculture has been romanticized. I spent my summers as a child on a farm and learned to love farming and gardening, so I, too, am enraptured by images of crops and harvesting. I love the smell of freshly plowed soil; I love the straight lines in the fields with crops coming up. I was and am as much of a sucker for agrarian nostalgia as anyone.

The brief agrarian period of human history now seems like the foundation of human civilization. It is easy to be nostalgic about family farms and the “simple life” we imagine people lived on farms. It is much harder to think of that agrarian period as the incubator for the human destruction of the planet. The idea of owning the earth corrupted us but the agrarian period also produced food surpluses that accelerated the rapid growth of the human population. It allowed us to create cities as people left farms because humanity produced enough food for most people to engage in occupations other than farming.

Creating a large and complex society provided the “distance” necessary for people to feel comfortable with leaders playing out their worst impulses on behalf of “the economy” or “jobs.” Beneath all of this distancing of evil, however, was the original sin of believing we humans “owned” the earth. That was a corrupting influence; we had made the earth into an object for our manipulation; with agriculture we owned the earth. This was our “original sin.” We had displaced a concept of the earth belonging to God with a new belief that we humans owned the earth.

### **I Own Those Trees?**

Many years ago, I was walking around the 6 acres of woodland I had purchased in Garrett County, Maryland, at 2,600 feet altitude, just 2 miles from the eastern continental divide. I looked at the large cherry trees nearly a hundred feet tall that bordered a meadow in the middle of that woodland. I thought, “how can I own those trees? They are older than me and far larger. How can I presume to “own” them?” That suddenly seemed a foreign thought, an odd thought, and it threw me back on my heels. “My ownership only means I can protect these trees from other humans,” I thought. “I am a temporary steward of those trees.”

And that thought applies to all humans on earth, now, in the 21<sup>st</sup> century: it begs for you to know how awful the idea is that we “own” the earth. That thought has led us to irresponsible behavior toward our “possession.” We cannot own the earth: it is far more powerful than we humans. Instead, how can we be better stewards of the earth? How can we protect the earth from damage? We are no longer “owners” and never were. We can only be stewards.

We arrived at this notion of being masters of the earth far too fast to develop a consciousness about what it meant. We opened a Pandora's Box. The earth and its chaotic ecosystem is now the largest Pandora's Box imaginable -- it is colossal. What have we released?

### **Higher Education: The Collective**

In "civilization," the "collective" has been key: collective learning means learning over time: we learn from the collective knowledge and skills of those who went before us. Collective learning is *passed on* learning. Collective learning is how we humans have survived. Passing on vital knowledge from generation to generation is the only way human society has survived. Without collective learning, our inventions would be lost.

Learning is also the source of our creativity and adaptability. Now, as we look at possible human extinction, learning is our lifeline. Global education, the largest sector of humanity, is not organized around one specific goal. Now, it needs to be. Education is what makes a civilization function. Now that humanity must move back to being truly civilized after the destructive tendencies and the industrial excesses of the past few centuries, it must turn to education to create the second era of human.

### **The Sleeping Giant Who Can Save Us**

Nearly 2 billion humans are involved in education, including primary, secondary and post-secondary education. Education is a sleeping giant. Much of education is focused on helping students become literate in our culture's consensus knowledge and then helping them get a job. Educators think they are teaching individuals even though humans are completely social learners and social beings learn within groups, not as individuals.

Education is a sleeping giant because it does not operate in a *coordinated way* to further civil society's goals. Each school, each institution contributes research, educated people, and are often working for social good through community action, grants, associations and so on. But, at the same time, now that humans are facing possible extinction, education is left flat-footed. Education is the obvious place to turn for global leadership, but is it capable of responding?

### **To Save Humanity, Higher Education Has to Wake Up**

For all the time I've been in higher education -- I was hired by Michigan State University to the faculty in 1963 -- I have been frustrated. For me, campus was my refuge from the world that seemed itself crazy -- Michigan State was well run and the days were predictable and people were smart -- but the longer I was in higher education, the more and more it also seemed crazy. Not crazy as in mentally unstable but "crazy" as in not making sense.

And it still does seem "crazy." Just think about it: higher education is supposed to shape society and culture but the institutional mission statements are vague about how they do

this and do not, generally, reflect the urgency necessary at this moment in time. See the University of Michigan's mission statement:

The mission of the University of Michigan is to serve the people of Michigan and the world through preeminence in creating, communicating, preserving and applying knowledge, art, and academic **values**, and in developing leaders and citizens who will challenge the present and enrich the future.

<https://president.umich.edu/about/mission/>

Who can argue with any of this but what does it mean or what actions would it lead to or what responsibility does it specify? How do we "enrich the future" if the future is in doubt?

Here is MIT: "The **mission** of **MIT** is to advance knowledge and educate students in science, technology, and other areas of scholarship that will best serve the nation and the world in the 21st century." <https://policies.mit.edu/policies-procedures/10-institute/11-mission-and-objectives>

Stanford: "**Stanford's mission** is clear—to advance knowledge and contribute to society through research and the education of future leaders—and as president, I assess opportunities within that framework." <https://stanfordmag.org/contents/the-mission-that-drives-us>

"Contribute to society . . ."??? How about "shape society," or how about "keep society alive"? Society is not separate from higher education! Society is *dependent* on higher education -- society does not just roll along on its own, but is *shaped by* higher education, *supplied* by higher education, is *alive* because of higher education. Higher education has a much greater responsibility to society than just to "contribute."

The University of Alabama: "The **University of Alabama** will advance the intellectual and social condition of the people of the state, the nation and the world through the creation, translation and dissemination of knowledge with an emphasis on quality programs in the areas of teaching, research and service."

<https://www.ua.edu/about/mission>

These are random selections and are not meant to be critical of these particular institutions,. They are just meant to show examples of mission statements that are so general that they are meaningless. Where do we see a statement like:

**The University will shape society so it will move from ecologically destructive actions to sustainability over time by developing in students a belief in their responsibility to humankind to create a better society, economy and culture?**

Higher education is on cruise control, dedicated to helping students get jobs in an economy that is recognizably destroying the earth and putting humankind at risk. It would be nearly impossible to find any mission statement that even recognizes current reality.

Beyond the institutional haze about mission and purpose is higher education's absolute confusion about learning -- the purpose of higher education is learning yet it does not require faculty members/professional staff to know anything about learning theory. How can this be?

In the 1990s, a movement emerged called The Scholarship of Teaching and Learning (SoTL) and is still active: <https://www.stlthe.ca/sotl/what-is-sotl/> However, has this movement resulted in higher education leaders or practitioners making learning theory part of a job description? One must be a disciplinary specialist but not a learning specialist. One must be scholarly about a field but not about how humans learn. As I said, "crazy."

And, do we think of higher education being *responsible* for the vitality of our society? This is a really good question. In the media, we read and hear mostly about how much money college grads make compared to those who are not college grads. It's all about jobs, jobs, jobs.

To say again, we have 250,000,000 students enrolled in higher education at any one moment, these students are the future of humankind, and must be prepared for a lifetime of disruption of all social systems, yet are at institutions that do not officially recognize the disaster we are in, do not know how to develop the learning habits and skills needed in this century, and are almost entirely organized just to get graduates jobs. Our best resource for human survival is being wasted. We cannot continue to be so irresponsible and, yes, "crazy."

### **Don't Learn what Anthropologists Did, Learn to do Anthropology**

Learn to do a discipline, not what those in the discipline did. In my senior year in high school, my social studies teacher taught us just enough about World War I so he could then assign groups to work on the question "What caused World War I?" My group met and we talked about this question, and, of course we realized that if gunpowder had not been invented centuries earlier, there could not have been World War I as it was fought. But, we then realized we could go all the way back to cavemen to look for causes.

So, we learned a bit about historiography -- how far back do you go for causes? We decided that probably it only made sense to look for proximate causes. The rise of Germany as a country, the growth of population in Europe, the claims of England, France and Spain to empires, and so on.

My teacher did not just talk to us each day in class about important dates or battles, he instead invited us to be historians. I never forgot that lesson.

Higher education students now need to DO disciplinary scholarship, not just learn what disciplinary scholars did. This is a time of deep challenge, deep danger, and many college students are aware that their world will be fraught with unprecedented disruption. They want to do something. Each class should be about how you use the particular way a discipline carries out research to address a current issue. Each class should assume the students are in a real-life challenge because those real-life challenges are actually there and available for participation. Each course must present problems that are grounded in the discipline but are focused on the world now.

If it were not for the danger to human life, we could see this century as the greatest field of learning opportunities ever. It is that, of course.

That same high school teacher did something else that has always stayed with me: one day, as the class started, he walked to the board and wrote a few words we kids used in our hallways conversations, words we had made up or altered for our own purposes, our own argot of weird words. He wrote those few he knew then asked us to add other neologisms. He then asked us to define the words. We had fun because those were OUR words, OUR language, and we thought it was cool that our teacher knew about the words and that he was legitimizing our language. We did not know that he was showing us the principle of how language grows and changes; we did not know he was letting us know that language is alive and always changing.

His acknowledging us as active agents in a living language was genius. He did not “own” English; we did, or we were owners along with adults. This simple exercise one day in my high school class stayed with me. Knowledge was not immutable. I had a role in cultural change. There was not right or wrong uses of language but only good communication. Knowledge was not dead, it was living.

This simple 15-minute exercise was an epiphany for me. My teacher had stepped out of the “sacred knowledge” silo and into our world of reality. He showed how we could specialize in accepted uses of language but generalize to new uses as those uses became newly accepted. He showed us how knowledge is alive, and how we were part of that life.

His acknowledging us as knowledge participants through the two examples I have mentioned can serve as a guide to all educators. Invite students to be researchers and make clear to them they own knowledge.

The mission of every university in the world has to state, in part, that the university is preparing its students to actively alter humankind at a local, regional, national and global level to survive this century. Short of that, and higher education is derelict in its duty to humanity.

### **The Last Humans Project**

The metamorphosis I say higher education must undergo is the purpose of The Last Humans Project that I formed a few years ago. It is a project, so far, only in producing recommendations, in critiquing higher education, and in serving to inspire hope for humanity.

I say “so far” not because I know The Last Humans Project will become a specific larger project but only because there is no limit to what I hope it will become.

Having students work actively while humans shift from exploitative energy technologies to sustainable energy technologies, and manage this shift with digital technologies, means

students are participating in the most profound change humans have ever experienced. Becoming stewards instead of exploiters is a shift in consciousness.

This is the kind of shift that *only* higher education, working as one unified whole, can bring about: a change in consciousness in humankind.

This Report is about ecological chaos and how education at all levels can help humanity survive, but it is also about how higher education can reverse its decline in enrollments and regain the trust of society by leading the ecological chaos response. Organizing to deal with ecological chaos is also organizing for better learning. If we want vitality, veracity, and relevance in humanity's educational enterprise, we have to turn it toward the great human problem of this century.

### **Higher Education is a “Country” That Crosses Borders**

Higher education, in the world, includes (pre-pandemic) about 250,000,000 students, faculty, professional staff and administrators. This number of people is larger in population than almost all countries. There are institutions of higher education -- post-secondary education -- in all parts of the world. Higher education, as research centers and educators of society's leaders, has the power to move all of humanity toward dealing with climate chaos.

Governments are not constituted to deal with a shared global problem because government is most fully a way to moderate competition for wealth and power within countries and a way to compete with other countries (at least governments at the national level). They will not help humanity survive this century unaided. They need a massive push from the only institution capable of that massive push: higher education and all other levels of education in the world. Together “education” makes up almost 2 billion people. That is the source of the creative cohort that will change how global humanity functions.

How?

Recently, in the fall of 2020, two authors published an article in Inside Higher Education suggesting that “we need a contact tracing army” and that college students can be that army: <https://www.insidehighered.com/views/2020/10/22/colleges-should-encourage-students-serve-contract-tracers-their-communities-opinion>

(Recently, an effort was made to enlist students in vaccinating people in a U. S. state -- but the students vaccinated other students instead, so of course this idea of an “army” is no good if the “army” is not disciplined!).

The idea of forming an “army” is similar to my own suggestion to form an informal creative cohort of students around the world to work on the one great human problem of this century, the climate crisis and how humans can survive.

Why should education at all levels in the world work on this one great problem?

1. Because we need a massive number to work on this problem and education has the numbers
2. Because working on the one great human problem is an *incomparable* learning opportunity
3. Because education would immediately become “relevant” and “crucial,” especially higher education, and would gain in enrollments
4. Because this one great problem can be used in all fields of study as a unifying goal
5. And, because if we don’t engage education to preserve human civilization, we will unavoidably face mass (but probably not total) human extinction.

To be effective, higher education in particular has to re-engineer its fundamental beliefs and legacy assumptions, its business model and its implicit learning theory.

To be clear: the creative cohort will not decide as a group how to solve ecological chaos and do it. No, the creative cohort will act as all college graduates do: find ways in the world to succeed, but this new cohort will have learning abilities aligned with a century of chaos, will have a consciousness about the danger humankind is in, and will in many cases actually work for organizations involved with environmental action. The change in our society we be more like lighting a million candles, not one bonfire.

### **New Terminology for Higher Education**

Words themselves can distort reality.

Let’s finally, finally get past the terminology and concepts of behaviorism. Let’s finally, as we are forced by the pandemic to include online learning outside of classroom time and space, see learning as a holistic life experience, learning as life and life as learning. Let’s distinguish between formal learning and life learning, as we must, but let’s integrate the two instead of valuing one and ignoring the other.

Instead of saying teachers “deliver” education (it is not a product), let’s say that teachers design *learning experiences*. Teachers don’t deliver, they *design*. (My high school teacher provided a very simple design: use our own neologisms to legitimize our own creativity.

Within a good learning design, students do *research* to work on the problem within the learning design. The student is the active agent; the teacher is the designer.

In behaviorism, the teacher is the active agent and the student is passive. This is basically the notion of the priest as intercessor between God and congregation: the teacher as intercessor between knowledge and the student. However valuable that vision and belief

might have been at some point in human history, it is now completely misleading and ineffective. Knowledge is not something to be delivered but is ubiquitous in our world.

Since knowledge is ubiquitous (through experiencing problem solving in the real world) and easily accessible because of the internet, the challenge for learning now is finding and *interpreting* knowledge in the world. The challenge now is being an active researcher. The challenge now is for teachers to “get out of the way” of learning. To design experiences, to guide, to assess, to re-direct -- the “guide on the side, not the sage on the stage” as the old saying goes.

Life is the classroom. In life as a classroom, the most important events are around rapid change and climate crisis and the greatest challenge is to learn from these events.

### **A New Starting Point for Educational Planning and Design**

The best way to understand learning and how higher education can improve learning is to ignore all existing structures in higher ed as the starting point for reform and instead start with how learning occurs in life. Start with life, not with the artificial structures that distort the natural learning process.

Learning goes on all the time, every day, every hour, and expands within natural forms arising from human culture as has happened for 2.5 million years. Forget the religion-based conceptions of learning imposed in the 15<sup>th</sup> century -- “you have to HEAR the word of God to be saved.” Yes, this was an actual explicit belief. Thus, the sacred lecture: I say this not with animosity, because I thrived with lectures myself, but I say it as a classic “early adopter,” one of those people who simply have to be trying new things, have to be challenging the status quo, and as someone who is crucial to higher education now -- a whistleblower. It is time for higher education to wake up.

I say this (ignore current structures) as one who found, by accident, that when I could manage an active conversation among students through the neutralizing medium of a network, students learned far better than if I was the only active agent. This happened in January 1985 for me, as a kind of miracle. It was my Vygotskian moment ([https://en.wikipedia.org/wiki/Lev\\_Vygotsky](https://en.wikipedia.org/wiki/Lev_Vygotsky)).

I had launched a discourse experiment without knowing it. With a grant and a linguist co-researcher we learned that learning is centered in the learner as a social being in conversation with fellow students. We learned the power of social learning and how the reduction in the role of the teacher unleashed learning energies. See: <https://files.eric.ed.gov/fulltext/ED527439.pdf> Also: <https://www.amazon.com/Network-Based-Classrooms-Realities-Bertram-Bruce/dp/0521457025>

I had created the ENFI Project and the idea was adopted around the country. We used a computer lab approach for a studio-writing method -- fluency in writing is best developed by writing to each other socially: you are writing to a real audience with a real purpose in

real time, socially, conversationally, and therefore tapped into how humans had always learned, in conversation with each other and most often in groups. Social learning is at the heart of civilization and we need to stop subverting this natural form of learning by distorting it as “classroom discussion” that overwhelmingly depends on the teacher.

A classroom discussion led by the teacher has its place, but it is a minor place, meant to get the conversation going, not to replace it. Let’s not continue to know, privately, that the teacher is always learning the most in a classroom -- what an admission! -- that is not the goal. Students need to be learning as well. Let’s get things straight.

A useful resource for readers:

<https://medium.com/@daniel.whitlock/100-ways-to-reverse-global-warming-3d92dcac21ce>

(Solar and wind and trees appear 6 or 7 times in the top 20 -- ) Also, see: <https://drawdown.org> where this list is from.

### **Information Technology Puts Learning Back Into Real Life**

With information technology, the whole earth has opened for learning. Once information and analysis could be collected anywhere, “real life” learning was no longer a mere slogan. Educators at all levels of education now confront the idea of “remote teaching.” I wonder at that phrase! How about “learning authentically while the teacher is ‘remote’?” Don’t automatically put the teacher at the center of learning -- that’s a fundamental mistake made by teachers and faculty.

The emerging learning technology -- renewable energies (yes, we can think of renewable energy technologies as learning technologies) -- can be installed everywhere and offers the best technology-enabled or facilitated learning I know of.

### **A New Learning Technology**

What if there was a refrigerator-sized technology that would allow learners from primary, secondary and post-secondary levels to not only learn the most important life lessons for this century, but to have new career opportunities? What if this technology would also help colleges and universities increase enrollment? What if it could also help institutions receive more public funding, more grant funding, and more corporate donations?

Here is the grand reveal: (this is just an example of one brand of this amazing new technology) <https://www.whiteleafenergysystems.com>

And here is a national program started 14 years ago: <https://www.nrel.gov/docs/fy08osti/41966.pdf>

And these states already have this marvelous new technology embedded in learning designs: [https://openei.org/wiki/Wind\\_for\\_Schools\\_Portal/Turbine\\_Data](https://openei.org/wiki/Wind_for_Schools_Portal/Turbine_Data) The database

includes these twelve states: Alaska, Arizona, Colorado, Idaho, Illinois, Kansas, Montana, North Carolina, Nebraska, Pennsylvania, South Dakota, and Virginia. <https://windexchange.energy.gov/windforschools>

Below are steps in adopting this new “refrigerator”:

As you read this list, you may realize that your own state is included and that a university in your state already is using this amazing learning technology.

1. Small wind turbines can form a basis for a resilience plan for your locality, anywhere in the world. The turbines collect data that can be processed at the National Renewable Energy Lab in Golden, Colorado.
2. Combine the small wind turbines (or large ones) with solar installations, and hydro energy devices, and you have the technology basis for the most important learning project possible at this moment -- organizing local efforts to keep functioning no matter what disruption occurs -- pandemics, fires, floods, heat waves, storms -- so that human society survives intact.
3. Working within a locality on a community-wide resilience and sustainability plan offers a range of internships, work-study, service-learning, and even paid part-time work for many of the 250,000,000 students in higher education and millions more primary and secondary students. No matter the student’s age, local activities on behalf of the environment are everywhere.
4. Small renewable energy technologies, therefore, can serve in similar ways to portfolios, the technology AAEEBL focused on, as moving learning into the world.
5. Higher education has moved into the world because of covid-19. Colleges that opened for in-person learning with caution, in many cases, nevertheless have had to close down again (but maybe re-open soon?). Primary and secondary schools may face the same problem. Let’s see this pandemic period as an unplanned experiment for a fuller understanding of learning -- there is not a wall between formal and informal learning: it is all part of the same whole.

### **Human Evolution Studies as A Basis for Learning Theory**

As a life-long educator who explored theories of learning during the decades -- 1980s and 1990s and after -- when academia moved to digital technologies, and one who found “situated learning” (<https://www.instructionaldesign.org/theories/situated-learning/>) theory a valuable guide for adapting to the new technology-supported learning and knowledge dynamics in our culture, my dive into the recent literature in human evolution was profoundly informative for me. Technology re-situates learning. Since learning always occurs in a context and since a classroom is an artificial context while “life” is a real context, and “life” provides an infinite array of contexts, situated learning is a way to understand learning and create the best learning experiences for learners.

Situated learning theory arose as information technology became the dominant technology in our culture. It is perfectly suited for the big rethink in higher education that is going on now not just to respond to our new dominant technology (that changes everything) but to respond to the new necessity to support “pandemic learning”: remote learning.

Human evolution studies tell us about what we are like, how we learned (and how we learn now), and how we developed the traits we have. It also makes clear that we are social by nature. Human evolution studies offer another view of human situated learning in ecological contexts. The crucial task is always “un-situating” learning: transferring principles from one context to another.

Human evolution studies makes clear that the idea of “individualism” is a very recent notion that does not align with the story of our evolution and that our current radical individualism is antagonistic to a functioning society. Human evolution studies are a corrective to misconceptions about the enterprise of higher education, misconceptions that are rooted in recent legacy beliefs about knowledge, learning, and the mechanistic (behaviorist) models for higher learning masked as “business.” Human evolution studies are also a corrective for misconceptions about human nature.

Every educator at any level of education must read at least one book about human evolution because we are at a **species turning point** and, as the saying goes, if you ignore the lessons of the past, you are destined to make the same mistakes again. We can only understand this century in terms of our species’ history -- it is that big a moment.

Education as an enterprise was built out in the industrial era and, as is widely recognized, the industrial model and the needs of industry strongly influenced how education has been formed. But, we are well past the industrial era, that heavy, belching, slogging era of smoke and fire, and into the digital era of lightning fast electrons and virtual reality. Education in a digital era, especially now when fast and profound change in our society are necessary, must be very different.

We cannot afford to think “in the box” (that is, our short-sighted dedication to the idea of “the classroom” for example) instead of opening ourselves up to learning in life, over the whole course of a person’s life, and seeing this new vision with awareness of why humans have been so successful as a species.

Human evolution studies provide the necessary context for higher education to re-think itself.

## “Jobs”

As an example of our deep dedication to continuous unquestioned belief in (and therefore destructive) economic growth: the word “jobs” has now become unchallengeable in higher education. No one can question “jobs.” It would seem you were questioning someone’s livelihood, someone’s family, or the very foundation of our country or world. And, to

clarify, I am not against “jobs” either, but it is important to look more deeply into that term and what cultural force it represents and what our dedication to “jobs” means.

“Jobs” represents an economic activity that produces wealth for the person doing the job and for the person hiring out the job. When we think of “wealth,” and its pursuit as the force that drives humans to grow and consume, and when we think of “grow and consume” as driving human civilization toward destruction of our global habitat, then “jobs” takes on a new color. It becomes a cover for excess. It is good in the short term and at the individual family level, but in the aggregate, as applied and practiced by 7.5 billion people, we have reached an ecological limit that forces us to ask, “what kind of jobs?” and with what ecological cost?

“Jobs” and wealth, in our culture, do not include *a sense of limit*. When would we ever say we humans are generating *too much wealth* to the point of catastrophic excess? We, in general, have not said that yet. “Jobs” is still sacrosanct no matter the effect. At a personal level, of course, jobs are admittedly sacrosanct but at a societal level it may be a formula for collapse.

I tried to bring up this question at an academic conference, in a small group discussion, and I was lambasted as though I had questioned motherhood. There is no discussing or questioning “jobs” with educators without setting off alarms. It represents, in a sense, the global human religion. It is just what we humans have done for 300,000 years (the lifespan of *Homo sapiens*).

Even in that higher education discussion, no one said that the mission of higher education is the ability to think, not jobs. And, this discussion was at a conference for a liberal arts association! Jobs is only one goal for higher education; the larger goal is to develop the ability to think and to contribute to society. “Jobs” as the *only* goal is reductionist in a higher ed context. I was dismayed that no one got that.

### **“Jobs” is Getting to First Base, Not Scoring a Run**

If we in higher education slip into the easy notion that we are helping our students get their entry-level job, their first job, and we lose sight of educating the whole person -- developing in that person the learning abilities for a full life, a full career -- then we are aiming only for “first base” and not a team win.

Excuse the baseball analogy -- in baseball, a player has to run all 3 bases and then get to home in order to score a run. Getting to first base does not score a run. Getting to first base is mostly an individual ability: seeing the ball and reacting quickly enough to get the bat on the ball, then running fast enough to first base before the other team can get the ball to the base. That’s an individual skill.

But, getting to second base involves other members of the team: the next hitter. A player might “steal” second, but in most cases a player will get to second base or beyond if the next hitter hits the ball safely. It is a team effort. Getting to third base and home is,

similarly, a team effort. More and more skills are involved for a team to score more runs than the other team. More coordination, strategy, cooperation, team spirit; more skills that are adapted to different situations.

The analogy is this: a dedication to “jobs” is a dedication to help students get to first base -- their first job, not a dedication to a successful and full life -- scoring runs. It is short sighted and will not “win the game.”

There is the larger problem of our society’s dedication to wealth accumulation, but at the individual level, in higher education, if we are to graduate students who can deal with this century, we have to get out of the “jobs” mental trap. It is beneficial to hear from employers that new hires from college can’t write or work well in groups, but the follow up is not to just add a writing course (as helpful as that would be) or to assign another group project, but to think more holistically -- “why can’t our students write well?” Are they being limited by their own focus just to get to first base?

### **Wealth at the Micro- and Macro-Level**

The belief in seeking wealth as the purpose of humanity has sunk into the soul of the species. That belief has led to the 6<sup>th</sup> mass extinction on earth. But that disastrous outcome of “jobs” as the higher education mantra -- that realization of how destructive the belief is -- has not changed the culture or its soul: the disaster has not been interpreted or understood fully enough.

The pandemic has led many of us to question how society is structured, especially in the U. S. where political failure is implicated in the scale of death from Covid-19. One might wonder if politics can save us from politics, another paradox.

Let’s move from “jobs” to “jobs+.” Let’s move from “getting to first base” and move to “winning the game.” That little plus sign after “jobs” means jobs is only one goal for higher education. The second and third goals are developing the ability to think and contributing to the social good. Jobs alone, as the goal of humanity, created the climate crisis. Goals number two and three can save humanity.

### **What is Higher Education’s Role in Human Sustainability?**

Higher education produces humanity’s leaders but what about higher education itself being a leader? Why leave the mission of higher education *as a whole* unsaid, as I asked above? Why not have a global purpose and mission for all 19,400 institutions of higher education? Especially now that we desperately need such leadership? Sonny Ramaswamy, a leader in accreditation in higher education -- [https://en.wikipedia.org/wiki/Sonny\\_Ramaswamy](https://en.wikipedia.org/wiki/Sonny_Ramaswamy) -- offered this as the goal of higher education: “improving the human condition.” Yes, let’s adopt that.

And, isn’t higher education trying to sustain its value and relevance? Isn’t higher education looking for learning opportunities that lead to the future? The creative cohort for MARS

(mitigation, adaptation, resilience and sustainability) is a logical response for global higher education to a shared global problem.

If 10% of college students worldwide follow a course of study in environmental studies that lead them to internships locally in environmental action -- such as in the renewable energy field or in conservancy and other non-profit areas -- and then graduate into careers related to the human shift from carbon to renewable energy or other transformative jobs -- humanity as a whole could be MARS certified. That would be about 10 million students and graduates joining the MARS creative cohort *each year*. This is the scale of effort we need to re-engineer how human society functions.

### **A Vision of the Possible**

I can see a possibility: no one entity will address all the overwhelming problems humanity will face during this century as our all-encompassing natural context continues to be chaotic. So, the actual possibility is that higher education graduating a creative cohort might increase the chances of more people surviving the chaos. We need a massive solution for a massive problem. The problem is too massive for any one solution -- shifting to renewables is only one part of the changes human civilization must make in this century. Our civilization, built on ever-continuing growth, reached its limit a long time ago. How do we reconfigure the lives and actions of 7 billion people?

### **“Jack of All Trades, Master of None” No Longer Applies**

The idea of generalist is not superficiality. Instead, a generalist finds principles in various fields that they can combine to form an interdisciplinary field of research. My own Ph.D. was in American Studies and combined deep research in the history of religion, in American history of a particular period, and in textual analysis (in the Rare Book Room at the Library of Congress). Working at a Ph.D. level in three disciplines was risky, of course, because I had to understand the academic discourse in religious studies, history, and English. Three fields and three different ways of constructing an argument.

But, through this combination of specialties, I was able to understand New England culture and thinking from 1680 to 1740. This grounding provided a lens through which I could understand other periods of American history, and eventually helped me with my work in technology in higher education, a deeply interdisciplinary project: how to understand ways of learning with technology in all fields on a campus? I did that and still do that. As a specialist, I had one tenured position for 30 years; as a generalist, I had 6 jobs in the past 23 years: if you were not fired as a technology leader, people thought you were not doing your job. (Interestingly, today, people similarly advance in their careers by applying for new jobs just a bit higher up in position than their current jobs).

### **How Higher Education Leads the World to Sustainability**

To change how society works so humans can live in peace with the earth, we need a workforce to bring about that change. Higher education, because it is more independent in

many ways from government than other institutions, can provide that workforce both while students are undergraduates and then after they graduate. If even 10% of students in higher education get engaged during their education in local activities, initiatives, partnerships in a work-study relationship and then some percentage of that 10% goes on to work actively toward regional sustainability, they can make a critical difference in the future of our species. 10% is 25,000,000 students. That's 25 million. Higher education is spread over the world. This creative cohort will alter local economies everywhere. Renewable energy is *local* energy. Localities becoming sustainable will guarantee more people surviving the climate crisis: depending solely on "government" will almost certainly not.

### **The Goal: Human Sustainability**

Sustainability is most commonly understood as the human move from fossil fuels to renewable energies. And this understanding and goal is obviously necessary and urgent. We cannot have any kind of sustainability without the move to renewables such as wind and solar.

But, this goal, as fundamentally crucial as it is, is necessarily long term: the amount of CO<sub>2</sub> in the atmosphere now will continue for centuries to be disruptive to the global ecology. Our habitat -- the earth -- will be in climate crisis for that whole time. The climate will continue to change in dramatic ways. It is not certain that most human communities will survive intact.

Sustainability then must take on a second meaning: "immediate sustainability." This means, for example, what happened in the US states of California, Oregon, and Washington in September 2020 -- where communities had to evacuate and then people had to wonder where to evacuate to -- where to go to wait out the fire. Or where to go now that their homes were destroyed. The States did "sustainability on the fly." Portland State University opened its hotel to PSU faculty and staff for housing during the fires. This arrangement should become a permanent part of Portland's sustainability plan, as well as a number of other components.

This is one example of how a resilient effort can result in community sustainability.

### **Resilience**

Sustainability as a term and a concept needs to be fleshed out because it is the goal of Last Humans. We can use two terms, "resilience" and "sustainability" to clarify.

In a sense, the goal of sustainable development could be described as bringing about a state of balance in the world which must be kept as stable as possible. According to many experts, this objective is extremely difficult, if not impossible to achieve, as shown by the [U. N.'s] Sustainable Development Goals, especially given the current climate which brings with it new and complex challenges to development, along with a great deal of unavoidable changes and disruptions already taking place. This

is where **resilience** comes in, defined by the experts at the Stockholm [Resilience Center](#) as “the capacity of a system, be it an individual, a forest, a city or an economy, to deal with change and continue to develop”. “It is about how humans and nature can use shocks and disturbances like a financial crisis or climate change to spur renewal and innovative thinking”, add the experts, with the Sustainable Development Goals in mind. <https://www.barillacfn.com/en/magazine/food-and-sustainability/sustainability-and-resilience-refer-to-two-different-concepts/>

Resilience means surviving a climate disaster -- all the important systems in a locality continuing to function, including the economy. A “locality” can be a city or a county or a state, or other delineations for localities that can naturally plan in a coordinated way. Sustainability means developing a balanced system that can continue for years into the future.

The Last Humans Project uses these terms in this way: resilience planning is very specific, such as the Portland, OR example above, of Portland State University opening its hotel for refugees from the wildfires. In that case, Portland will also need (if they don’t already) to publicize and make available maps of roads leading to refuges. What roads are likely to be open during wildfires? How will people get updates on road closures? How will refugees have access to water and food? Dealing with climate disasters can be a logistics nightmare: it is hard to predict natural events such as fires and how the fires will affect communities.

## **UN Sustainable Development Goals**

1. No Poverty
2. Zero Hunger
3. Good Health and Well Being
4. Quality Education
5. Gender Equality
6. Clean Water and Sanitation
7. Affordable and Clean Energy
8. Decent Work and Economic Growth
9. Industry, Innovation and Infrastructure
10. Reduced Inequalities
11. Sustainable Cities and Communities
12. Responsible Production and Consumption
13. Climate Action
14. Life Below Water
15. Life on Land
16. Peace Justice and Strong Institutions
17. Partnerships

<https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

This list seems to cover just about all human activities and needs. It suggests to me that “sustainability” for the world demands a broadly holistic conception and plan. The Last

Humans Project works within each of the 17 goals because the Plan offered in this report envisions each locality, led by its institutions of higher education -- all 19,400 -- customizing their local plans based on the general outlines offered in this report. In the aggregate, The Last Humans Project will probably include all U. N. goals. The challenge is for all 19,400 institutions to collaborate on how to make the earth sustainable. Lowering the carbon footprint of the institution itself is only the first of many necessary steps.

How do we live “in balance” with the world ecologically, but also how do we live with each other in peace? In the normal world, so to speak, that we left behind a few years ago, all 17 UN goals would be admirable, ongoing, and acceptable. That would be “business as usual.” Always striving for a better world. In the “never normal” world that we inhabit now, each goal takes on urgency, each goal demands urgency, because without global cooperation the “business as usual” souls will not succeed in this “never normal” world.

Higher education has about 250,000,000 students enrolled who will be living in the “never normal” world of today for all of their lives. Many of those students are already active in climate action through organizations they join. Recruiting them to work locally in work-study arrangements with climate action, installation of renewable energy sources, development of resilience plans, and so on is not only a rich learning experience but preparation for jobs in the renewable energy sector and in the economy as it is evolving.

### **The Idea of “Individualism”**

Not only has academia become highly specialized, strongly favoring research siloes, rewarding research within those siloes, and creating siloes within siloes within siloes. Not only do we see the climate crisis as a fight against other humans (those who profit from oil and gas) -- unfortunately a comfortable paradigm -- but we have no idea about how to collaborate in any meaningful way against a common threat. And, within many societies, especially in the U. S., the idea of “individualism,” a useful legal concept a few centuries ago, works against social cooperation because we have reached a point where individual rights have become paramount for many instead of the society. As a divided society at all levels, trying to coordinate at a global species level, is daunting: nationalism, on the rise, views humans as competing, not cooperating.

In other words, the human species, at this point, is not only unprepared, but *disinclined* to deal with the climate crisis. In academia, we do collaborate across borders, and because higher education is almost entirely non-profit, it is dedicated to the “bottom line” of social good. Higher education is more “inclined” toward global cooperation than governments that live and die with borders and social and political hierarchies. The difference between civil society -- in which education is the largest sector -- and civic society is sharp and deep.

The Association for the Advancement of Sustainability in Higher Education offers one path. But, have you ever heard of AASHE? Your institution, if you are an academic, may be a member. And you may be aware of your institution working to reduce its own carbon footprint, but at the same time doing little to address global “climate chaos,” a term some

have suggested is more appropriate than “climate change.” <https://www.aashe.org/about-us/who-we-are/>

## **The Myth of the Individual**

But, not only has higher education formed itself on a Hobbesian view of human nature (corrupt), but has adopted an idea from the Enlightenment that is equally contrary to actual learning: the idea that we are teaching individuals and not groups of students: remember that humans learn best as *social learners*.

I had a conversation recently with a prominent leader in higher education and this person let me know that the myth of the individual and its adverse effects on higher education is recognized. But not broadly enough, of course. Higher education has taken the worst of Hobbes (human nature is corrupt) and the worst of Rousseau (we are good) to create the flawed higher education sector. Why higher education has, counter-intuitively, succeeded so well over the centuries seems to be a result of factors other than the classroom. Maybe just getting a large number of smart young people on a campus to have conversations is the real magic?

## **People Act Against Their Nature: The Quagmire of Radical Individualism**

We Americans are accustomed to the phrase “rugged individuals.” The phrase evokes “the frontier” and our “pioneers” (both phrases are inaccurate) and our “can do” country. We Americans make things, we innovate, we take on the impossible: land on the moon and leave footprints! I personally both love and distrust this general “cowboy” meme.

I have come to not only distrust but actually recoil from the use of this meme in support of ones “rights.” It is easy to shout about your rights while ignoring responsibilities. Why has America failed to deal with the pandemic? Not just Trump, but this twisted idea of “rights.” People say “this is a free country” but mean “I can do whatever I want!” The anti-mask movement is really an anti-social movement -- not just being “anti-social” as in not being friendly but being “anti-social” as in wanting to kill other people.

Radical individualism in this country produced Trump, the ultimate radical individual. He apparently does not even conceive of other people existing as people. Trump is the great American icon: he represents the gradual slumping of America into the mud of a fragmented society.

He is what unfettered capitalism brings us; capitalism is not bad but adding in the fracturing effects of media brought us Trump.

He represents our own patterns of behavior, our thoughts and beliefs, he represents the affordances of technology to fragment society, he represents a new American icon. Lincoln has come to be revered as an honorable and wise American icon and we use his image and his name to represent what we want the country to be. Trump is just the opposite icon, but

one we must understand. Stop trying to analyze Trump's psyche and instead analyze what in our culture and our society produced him.

### **Where Did the Idea of the Individual Start?**

Once people stopped believing in the divine right of monarchs, and therefore sought to limit the power of sovereigns, seeing society as not necessarily hierarchical with God at the top, then they/we were faced with the dilemma of "how is society organized?" If society was not organized from the top down -- and it was important to limit that "top down" in view of excesses -- then how was it organized? The idea of the "individual" emerged. Far from the original meaning of "indivisible," the word "individual" came to mean the opposite.

The U.S. constitution contemplates individual rights as a means to guarantee a better life for all. The idea was a very effective corrective to the excesses of, for example, King George the Third, the "mad king" who sparked the American Revolution which, then, in turn influenced the French Revolution. We today see the Bill of Rights as a description of the natural rights of all people -- a far cry from the Calvinistic ideas the settlers held in 1630 Boston, which was a hierarchical concept of society that God had predestined.

"Individualism" is a recent term in human history, about 300 years old in our part of the world. The term, now, ironically, has been ostracized as a concept leading to the fragmentation of society and to anarchism, but also adopted as a convenient justification for laissez-faire. In the U. S. today (2021), individualism has been radicalized to mean that people have a right to be anti-social. That is, people have a "right" not to wear a mask in a pandemic, or get vaccinated.

In evolutionary studies, humans always lived in social groups and, in fact, grew in numbers because of the unique ability of homo sapiens to create large and complex societies. "Survival of the fittest" in that context refers not to individual people but to their genes or to their society: "survival of the fittest gene or society." Individual humans in nature would have died out long ago.

Using the context of human evolution and recognizing that cooperation and empathy are the greatest strengths that humans have, we need to simultaneously realize that the radical individualism of today is ultimately nihilistic -- it leads to nothing, literally. We treasure the idea of "individual rights," but it is a double-edged sword -- an individual should have legal recourse in many cases, but, collectively we are members of multiple groups within society and that is our reality, philosophically, scientifically, and psychologically. Our existence is social.

### **The Idea of the Individual Cannot Define the Structure of Higher Education**

Higher education, if it is to be relevant and a force for good in this century, must move away from individualism. Students must be cultivated to work within society for the good of all, not cultivated to compete in the quagmire of individualism mixed with the mud of

imagined Darwinism. While capitalism is good at generating wealth, it is not a good model for civil society. Students work best within social groups.

### **Classes as Social Groups**

In my own teaching, I came to see the value of understanding my classes as social groups. I researched family therapy and grasped the theory of power dynamics within a family and how family therapists worked to disrupt those dynamics as a way to improve them. That led me to think of working in the opposite way: not disrupting dynamics within my class, as they had almost none yet, but *creating* social dynamics within the class. The more students in my class felt that they were attached to the class as a group, the more engaged they would be. I had unwittingly tied into evolutionary traits in my class, going against higher education beliefs and therefore animating learning.

Many of the best practices in higher education now accept this idea of the social nature of learning. That is gratifying for me to see retroactively long after I experimented with a “nomadic class” with that purpose in mind. Actually, I intended to disrupt something with that class: the “classroom mindset.”

### **My Nomadic Class and Situated Learning Theory**

I was tired of asking a question, waiting the rule-bound number of seconds before I answered the question myself (if I violated that rule, my class would get uneasy: “what is he waiting for?”) Our roles in the classroom were far too rigid. I had developed a strong sense of how unnatural a classroom setting can be if the students are not already connected socially.

It was 1970. I simply launched out with my plan based on instinct only: what if we simply met outside the classroom to eliminate those rule-bound behaviors in the classroom? So, we did. I announced to my class that we would meet in the lounge at the student center for the next class meeting.

For a whole semester, my class met at various places around the campus. This class got to know each other well and formed friendships. Our class discussion changed radically: they now felt special and connected and, I thought, more “natural.” I had by accident discovered the concept of “situated learning,” or at least one aspect of it. My class had reclaimed its evolutionary reality: humans learn socially. I had stumbled into an evolutionary truism. We had fun learning together.

**Situated learning** is a theory that explains an individual's acquisition of professional skills and includes research on apprenticeship into how [legitimate peripheral participation](#) leads to membership in a [community of practice](#).<sup>[1]</sup> Situated learning “takes as its focus the relationship between learning and the social situation in which it occurs”.<sup>[2]</sup>

The theory is distinguished from alternative views of learning which define learning as the acquisition of propositional knowledge.<sup>[3]</sup> [Lave](#) and [Wenger](#) situated learning

in certain forms of social co-participation and that, instead of asking what kinds of cognitive processes and conceptual structures are involved, they focused on the kinds of social engagements that provide the proper context and facilitate learning.<sup>[3]</sup> [https://en.wikipedia.org/wiki/Situated\\_learning](https://en.wikipedia.org/wiki/Situated_learning)

My own article about situated learning: <http://www.theijep.com/pdf/IJEP34.pdf>

Situated learning research is abundant and it provides a much richer picture of how learning actually occurs in real life. This learning theory can serve as a guide to The Big Re-Think in higher education.

Now, higher education needs to take the next step so its learning design embraces social learning fully: don't do "social learning" but then grade students individually: you are mixing social Darwinism with evolutionary traits (they are opposite views) and therefore losing the value.

Technology supports learning in the world, learning in a variety of settings, learning in various groupings, cooperative learning, real-world learning. I have experienced reluctance in higher education to embrace learning using technology in socially and rhetorically enlightened ways and have done so over the past 35 years, but now I am impatient because the stakes are just too high to allow academic timidity to prevent change.

Either education saves humanity or we risk extinction. We cannot succeed with outdated and inchoate learning theories based in habit: see this URL to learn more about design learning: <https://dschool.stanford.edu>

Students don't need to be enrolled at Stanford to benefit from design learning: the principles can be applied for any age and in any setting. They can be used to meet any learning standard and any learning outcome. They can be used for learning around the human move to small technology; they SHOULD be used for learning around the move to small technology.

### **We are too good to be good.**

We homo sapiens are so good at sociability, "friendliness," empathy, and cooperation as individuals that our numbers, over the last few thousand years, grew too large, so large that we humans collectively damaged the global ecosystem and caused the 6<sup>th</sup> mass extinction on earth, the extinction that brought us covid-19 and will continue to bring us climate disasters in many forms.

*Homo sapiens* appeared in Africa after other human species had migrated around the world for the first 2.2 million years of the human (*Homo*) genus. Sapiens is the latecomer who then out-populated other human species and maybe drove other species to extinction, leaving us sapiens as the last humans as of 40,000 years ago.

The Last Humans Project's ideas and goals are shaped by the realities of human evolution. Sapiens have very particular traits that have made us successful in terms of pure population numbers. The Last Humans Project asks "what are those traits and how should higher education be designed to fit those traits?" Higher education is in fact not designed to fit who we are as a species or to engage our traits for learning, as this Report has already established.

Human evolution studies provide a corrective to the distorted learning structures and beliefs in higher education today -- we are social learners and we are good at discovery and adaptation.

Instead, higher education is designed to fit beliefs about humans that arose "recently" -- the past few hundred years -- and to fit an industrial model and business model that have almost nothing to do with who we are as humans or how we learn best. If higher education is to save humanity, it has to reform much more quickly than it is doing now. Even without a climate crisis, higher education would need to speed up its transformation away from the distortions of old beliefs and industrial organization.

### **Higher Education has a *Civil* Responsibility**

People in all cases in the world are citizens of some legal entity. In the role of citizen, people obey the laws and pay taxes. Some people do national service in the military. Others run for office and become part of the government. As citizens, we are expected to be aware of our civic responsibilities. -- pay taxes and obey laws, for example. However, we act as "citizens" -- in literal terms -- during only *part* of our lives. While we always have to obey laws and pay taxes, our real lives are played out in civil society. We are on the *civil* society ship that must stay within the channel markers put up by the *civic* society.

We live in a *culture*, a civil life in addition to our civic life as citizens. The cultural activities of our lives -- our family, friends, work, volunteer work, church membership, memberships in organization, all of our social interaction, our beliefs and hopes: our *lives* are as members of the culture: the civic part is a relatively (background) part of our lives.

We all live within cultural rule-bound behavior -- if you hold a door open for someone, if you stay respectfully in queue in a store, how you talk to strangers as you pass, who gets out of the elevator first, how you speak on the phone -- all of human behavior is influenced or dictated by informal social rules that determine the quality of our daily life. This is our life in civil society.

Civil society, our real lives, is our human reality. Governments come and go, are good or bad, are competent or not, and they are swayed by special interests, tend to tilt to the top layers in income brackets, and make "political" decisions often based on if certain people will be re-elected or not. Governments receive bribes of one kind or another. It is clear, also, that often, those who rise to the top of civic society may not be the best people morally or ethically.

In other words, we must live within civic society (the rule of law), but acting for the common good through civic society alone seems to lead to as many bad outcomes as good. In fact, now that the earth is dying and on fire, it would seem that civic society has led us to disaster.

The Last Humans Project envisions higher education, as one element in “education,” the largest part of civil society globally, about 20% of the entire population of the earth, leading humanity to a new era of sustainability, in balance with the earth, not in defiance of the earth. Humans acting as civilians in a cooperative global effort, and including government as a partner, can reshape humanity by bringing out the best in humans.

### **Learning as Design, Not “Delivery.” The Teacher as Designer; The Learner as Researcher**

Higher education can’t act on behalf of humanity yet, however. Global education is organized and conceived by outdated and misleading assumptions and beliefs. This is why it is a “*sleeping giant*.” It is incorrectly structured because of vestigial religious beliefs based on the idea of sin (you must hear the word of God to be saved); and it is incorrectly conceived because of misunderstanding about human learning stemming from wrong assumptions about human nature. I have touched on both already. See Higher Education’s Big Rethink at <https://ldt.georgetown.edu/higher-educations-big-rethink/>

Traditional thinking in education is teacher-centered and classroom-centered, as if learning is fixed in place, as if learning is not continuous for all learners, as if the learner learns nothing out of reach of the teacher. As if the family is not the center of learning. As if just one part of a holistic life-long learning process is important, that is, time in the presence of a teacher. On the contrary, no learning is “distant” or “remote” because learning is always *centered in the learner*.

Education must realize a fundamental fact about human learning: it doesn’t need you. Learning IS human life. Human babies at a very young age can outperform adult chimpanzees. Our cognition, as any learning researcher knows, goes through developmental stages. Parents and the extended family are the first educators and, in many ways, always the most important and influential educators in any person’s life. Peers become important at a certain point in the early teens and are probably more influential “educators” than teachers during that time.

So, since all humans learn all the time, what is the point of education? There is a point, but it is not understood: it is both undervalued and badly designed, based more in vestigial religious beliefs (“sacred knowledge”, the pulpit model of teaching) and social purposes (conformity) than in actual learning; primary and secondary teachers understand learning theory but are ineffective in employing it because of civic intervention in how kids are taught. College faculty and professional staff do not, mostly, understand learning theory. “Content delivery” is not a learning theory and is a massively wrong-headed concept. Deliver? Higher education can “deliver” an *opportunity* to learn, as it should, but it cannot

“deliver” learning any more than it can “deliver” breathing. “Content” is not learning. It is an opportunity to learn.

Why is there confusion about what education does? Let’s get back to the vestigial religious beliefs arising from the fact that education over the centuries was grounded in religion. People centuries ago believed deeply in God’s presence in our world -- no problem with that, of course -- and also believed in most cases that God’s Word came to people through intermediaries such as the Pope or the priest, minister, rabbi, imam, and so on around the world. In the American colonies, the part of the world I’m familiar with, a belief in New England -- an influential fountain of American thought -- said that you literally had to *hear* the word of God to have a chance to be saved.

By extension, knowledge itself, cultural knowledge, came to be “sacred” because a lot of it was based in religious belief and not on research or documentation. Since much of U. S. higher education was based in denominations or in Roman Catholicism in the 19<sup>th</sup> century when higher education spread around the country, the notion of someone having to speak sacred knowledge for students to be enlightened (“saved” in earlier terms) persisted and we educators placed the lecture at the core of higher education, having lost awareness of the connection of the lecture to religious belief: scientists, ironically, often teach science based on a religious idea of learning.

Real learning is actually based in life experience; *formal* learning aims to develop the metacognitive thinking abilities in students through using accumulated knowledge as test cases -- “problems” -- or projects based in an academic field. The ultimate goal is not to make every student a biologist or historian, but to help every student develop *reflective thinking* so those students can go through life seeing principles to use in life -- this is the core of all higher education. The exception is for those few students who DO become biologists or historians or other specialists.

In other words, higher education’s goal is to take life learning to a specific cognitive level, the ability to reflect on experience. That’s it. Memorization does not help much. Lecture works with only a small percentage of “natural learners.” A new emphasis on social learning does help; the new emphasis on authentic learning helps as does emphasis on experiential learning. Higher education is moving, but far too slowly, in the right direction.

## **Behaviorism**

Traditional thinking about formal learning is still based in behaviorism, a widely discredited approach to understanding how humans learn. Behaviorism claimed that teachers would provide uniform “treatments” to students so they could change their behavior. Behaviorism is comfortable with the idea that schools and colleges and universities “deliver” education (that is, a “treatment”). Behaviorism also has roots in, let’s face it, the implicit belief that sacred knowledge is provided as a treatment, like a blessing.

Religion has its place in our world, of course -- praying can be seen as one way of reflecting on your life, for example, and meditation is a way to focus. The social value of religion is

widely understood. But, still, we have to replace vestigial religious ideas at the foundation of how we see education with more current awareness of cognition and learning theory.

Looking only at cognitive function, however, our culture and higher education needs to separate out learning designs based on less helpful aspects of religions such as assuming humans are born with sin, are corrupted without hearing sacred knowledge, and can't be trusted to learn on their own because, well, human "good" is only a veneer.

In *Humankind, A Hopeful History* by Rutger Bregman -

<https://www.littlebrown.com/titles/rutger-bregman/humankind/9780316418553/>

Bregman recounts a real-life "Lord of the Flies" story about 6 boys actually stranded on an island in the Pacific that gives the lie to William Golding's book. Instead of acting out corrupt human impulses as in Golding's fiction, the real boys acted out the best in human traits -- cooperation, rescue, and protection of each other.

The boys survived 14 months on the island before they were spotted and rescued. Bregman also recounts the same human traits coming to the forefront during the Blitz in London and during Hurricane Katrina in New Orleans: humans are not essentially bad but just the opposite. <https://www.theguardian.com/books/2020/may/09/the-real-lord-of-the-flies-what-happened-when-six-boys-were-shipwrecked-for-15-months>

Bregman goes on to distinguish between a Hobbesian view of humanity as expressed in *The Leviathan*, humans needing to be strictly controlled by an autocrat because people are basically evil and will destroy society unless strictly controlled and, alternatively, the opposite views of Rousseau. In his writings, such as *The Social Contract*, Rousseau provided a thought basis for the enlightenment. He saw humans as naturally good.

But, the author also points out that the Hobbesian view is much more useful to government and to religions because that view justifies strong control and the accumulation of wealth and power.

That aspect is indeed a problem because of how it has led human civilization toward extremes in exploitation of the earth for the benefit of the few: government is mostly based on preserving the status quo and benefitting the chief "stakeholders" in society -- the wealthy. A strong central government may seem to be necessary if we believe that humans are bad, but that belief can also justify an unnecessary and destructive concentration of wealth in just a few people. Hobbes did not do us a favor.

But, that view has also corrupted higher education in its views of learning and learning designs. The core idea of "delivering content" is just another way of saying "preaching sacred knowledge." The podium as pulpit. The "Cathedral of Learning" in Pittsburg.

Our sacred knowledge now -- our "content" -- should be viewed as valuable as *context* within which learning experiences can happen, but always the goal is not just to "know" the content but to use the content as a learning space, as particular kinds of problems to address, as particular ways to form an argument, as specific ways to research phenomena --

our content is a lab in which students can learn to think creatively through *experience* in that thought domain. The goal is almost always *outside* of the content, not within it.

See *Range* by Epstein -- generalization before specialization is better.

## Marching Orders for Education

We charge education with a new global mission. But, is education up to this mission? Here is more about the new mission.

1. Colleges and universities must now devote themselves to **preventing human extinction**: how can higher education not recognize this responsibility? Higher education has to adapt to the actual world we are living in: change was rapid before Covid-19 because information technology runs most systems in the world and information technology is much faster than analog systems; but, with climate change, we have a second accelerator. One must learn to *adapt*, not just play out the same life script as always.
2. Being IN education puts people **in a box** — I remember — you can be only so radical without losing your audience, reputation, or your job. Protect your position in the hierarchy. So, transformation that is necessary is hard from within.
3. And, being IN **academic discourse is also a box**: as brilliant and wonderful as teachers and faculty are, they still talk about “teaching” instead of learning and still use the word “pedagogy” which is not a learning theory, or almost never based at all in learning theory, and is merely a *teaching method* that the professor feels comfortable with. “Pedagogy” does not mean “learning theory.” It is an empty phrase specific to only the person saying it. It is not replicable or even open to analysis. It seems the only intention is to make a person sound like they are serious about their teaching. The word is a gesture toward learning theory but only a gesture. Note: I have used the word myself in the past so I am not guiltless. “Pedagogy” is a teaching practice, not a learning theory. No academic could be so imprecise within their own field as they are when talking about learning.
4. Instead: the umbrella term for the purpose of higher education is “learning,” and under that umbrella are two activities: “teaching” that should be maybe 20% of the activities, and “learning experiences” that should be 80% of the activities. There is value in teaching, but not as the *only* activity.

A side note on the obvious: in higher education, career success for faculty members/professional staff most often is based not on teaching but on publications. This is skewed heavily toward reputation (“research” and publication) and not toward creating effective learning experiences. Since we can see that “content” in this century is most important as a venue for learning how to learn and learning how to think, then the premium must be on how effective faculty/professional staff are in advancing learning. This argument for a greater emphasis on teaching and

learning has been raging for decades but has not resulted in a sufficient shift.

5. Instead of starting with “the classroom” as the baseline of comparison — because there is no baseline (how do we know “the classroom” works?) — start with “life” as the baseline.
6. Life — the oldest and most effective means of learning is **conversation**. Second is **curiosity**. Third, **experimentation**. And, fourth, **reflection**. (These are my own claims). <https://www.kdplatform.com/four-stages-learning/> : this source says the stages are:
  1. **Unconscious incompetence** (you don’t know what you don’t know).
  2. **Conscious incompetence** (you know what you don’t know).
  3. **Conscious Competence** (you know what you know)
  4. **Unconscious competence** (you don’t have to think to do)

My four steps are necessary for a learner to go through the 4 stages above

The first two - conversation and curiosity -- happen in life all the time. The third requires critical thinking (how do you test a hypothesis?) The fourth, reflection, is what formal learning must develop. In formal learning, as opposed to real life, the conversation can start with teaching. Curiosity can be galvanized by interesting questions. Experimentation is actual experience. And then reflection asks “what do our results or discoveries mean and how can we apply them?”

7. **The best way to understand learning is to study human evolution.** Why not? We need to know who we are if we want to understand learning. Knowing that we actually invented language 2.5 million years ago instead of 50,000 years ago (the current consensus) provides a very different picture of humanity: we are not the weapon-wielding hominid but the conversational and social member of a human group. The notion of “survival of the fittest” is about the survival of the fittest *society*, not individual. It is inappropriate and misleading to use that notion of humans as weapon-bearers in learning design. We are not competitive at our core but *cooperative*. We are social, not rugged individuals. Seeing language as the originator of “human” helps us understand learning far better. We are not “STEM” people, we are “STEAM” people.
8. Learning: since human learning is based in conversation because we humans have evolved with language, we need to frame thoughts about learning as conversation, the most fundamental means of human learning (along with imitation):

We can now sustain an enlarged and distant “conversation” with the internet so an academic conversation is no longer necessarily broken into 3 45-minute segments a week, creating a gap in the conversation but, instead, the conversation can be continuous. **Continuity of academic conversation is one of the great benefits of**

## **technology.**

9. In other words, “the classroom” is an artifice whose design is based on logistics and the church model of hundreds of years ago when the belief was literally that you had to HEAR the word of God to be saved. Think of that! That model has gone unchallenged for centuries. Why? Because the few who could thrive in a “teaching mode” became teachers and professors themselves. And because of the business model of higher ed. And because of logistics. Almost nothing we now think of as the only model of learning is based on learning theory but is instead based in religious beliefs and practicality.
10. So, let’s get away from “classroom” thinking and instead start with LIFE (Look, It’s Fairly Easy). People learn almost everything from their life experiences. Let’s study “natural” learning and then base our transformation efforts in academia on that perspective.
11. Assessment: grade students both as a group grade and as an individual grade: the individual gets the grade the group is awarded only if the individual has completed her deliverable for the group project. We are social learners primarily. Businesses use this model because they have found it works best -- not awarding grades of course but raises and positive reviews.
12. Finally, we have no spare time: college is not now preparing students for the chaotic world today and in the years ahead. Let’s stop fooling around, running around, in the same box we’ve been in for centuries. Round and round we go . . .
13. Summary:
  1. Stop using “teaching” and replace with “learning” as our overall mission in higher education.
  2. The baseline for our planning is how humans learn in daily life based on learning theory
  3. Think “conversation, curiosity, discovery, and reflection” as the “LIFE” model. Lecture can *start* this process; that is its most valuable role. Every student can be a researcher.
  4. Dedicate each institution to help create a resilience plan for its locality and provide undergrads and grads to implement that plan.
  5. While each institution must have a business model to stay functional, that business model cannot drive learning design.

Current vocabulary in higher education circles militate against the success of education in this moment of crisis.

If higher education reforms itself to develop creative, active learners, the problems of humanity will be injected with vitality, enough vitality to be itself reformed. But, now, the

major source of vitality in any society -- education -- is not itself sufficiently vital. We need to change that.

### **Higher Education Is Crippled by Misguided Discourse and Vocabulary**

The most influential segment in human society is education. About 1.2 billion students are enrolled in primary and secondary education in the world, and a quarter billion more are enrolled in post-secondary, making a total of nearly **1.5 billion students** at one level or another in the world.

No other sector in human civilization has those numbers or influence. Education is *supposed to* shape human civilization. This is nearly a quarter of the human population on earth and includes some of the most intelligent and potentially influential people and yet “education” as a sector has little idea of a shared general mission for good other than to make sure individual students get jobs. This is a failure of imagination *beyond* imagination. “Getting a job” should be expanded: “getting a job dedicated to social good” should be part of that description. Getting a job that leads to a satisfying career. Getting a job that makes you a full human. Getting a job that allows you to enrich our culture. Come on!

We are not drones with our heads down on a STEM assembly line! We are humans. We will survive this century if we use our human abilities.

At no time has the human species needed a shared global mission to reverse damage to our earth more than now. How to organize behind the mission is not hard and can be done almost immediately; in fact, in some localities in the world, people are already working on the shared mission: building resilience to survive the climate crisis.

However, education is so broadly misconceived for this crisis moment in human history that it is doing less than it could (higher education provides the core energy and talent for research, of course, but I am referring only to learning) to help human civilization survive.

We blame the fossil fuel industries for causing our crisis but we have not yet realized that education can provide the means for our survival in this century at the same time as we wean ourselves off fossil fuels. As I have written about this over the past four years, I am constantly flabbergasted that we humans have not asked this of education yet -- we think governments will do it but they have failed for 33 years and will continue to fail. Let’s stop hitting our collective heads against the wall of the government/industry/wealth complex and turn to the social and economic sector that can act.

The action is: create local resilience and sustainability models around the world to assure survival; this work provides excellent learning experiences for students at almost every level of education and, most importantly, may pull human society out of the fire.

### **A New Education Vocabulary for “The Disrupted Century.”**

Culture, the economy, the financial system, employment opportunities, values and all of life is changing faster, at a more foundational level, and encompassing more people at a deeper level, and more quickly than at any time in the history of the human genus.

How to adapt? How to survive the mass extinction underway? How to create global resilience communities?

Is higher education up to the task? Yes, but only after some re-forming of the language we use to talk about learning. What higher education does not know fully enough is that our outdated discourse about our major mission -- helping young people learn how to learn -- is hampering our ability to adapt to this volcano century.

Here are some changes that must be made in all discussions of the mission of higher education if education as a sector is to develop leaders attuned to the needs of now:

1. "Teaching" is replaced with "learning" in all contexts. Our mission is about learning: "teaching" is only one part of a learning design. (That is, "lecture" is a part of the learning design, not a replacement for the learning design.)
2. "Pedagogy" -- see list above
3. The word "deliver" is forbidden. If our mission is to help young people learn how to learn, the onus is on the learner. No one can "deliver" a process, but one can "deliver" or design a series of experiences that WILL help young people learn how to learn.
4. Testing is reduced to a minimum as the de facto assessment tool, and "deliverables" placed at the center as real-world assessment.
5. The "Individual" Delusion. Humans are inseparably social; it is how we live. The idea of "individual" is a cultural myth that has led to the disastrous belief today among a large part of the American electorate that individual rights supersede the needs of society. This belief, this radical individualism, is a destructive, nihilistic idea and has led to a fractured society in the U. S. where the myth of the "rugged individual" has taken its most extreme form. Higher education cannot, nor should it think of itself as, "teaching the individual." Instead, let's say that higher education facilitates social learning, the natural human process. We should not grade the individual but grade the group -- each member of the group will share in the grade if they complete their deliverable. Let monetization adapt to learning instead of the other way around.
6. "Curriculum" might better be described as a "working action plan." Curricula that don't adapt as students respond within the learning design is not a working action plan.

7. This century offers us infinite real-world problems; these problems are not “out there,” but are directly affecting students. “The classroom” as a model of learning is now too limiting. Authentic learning is the base model, not “the classroom.”
8. “Remote learning” or “distance learning” are contradictory terms: if the student is the center of learning, as the student is, then she is not remote or distant but centered. Learning with “remote resources” or “distant resources” is more theoretically valid as a descriptor. A teacher is the instigator of learning, most valuably, but not the center.
9. Learning outcomes, as a concept, fails to help learning significantly. While the movement to learning outcomes responded to “accountability,” it was not a theory-based movement and so, ultimately, only a small help. We might conclude that it was largely a political movement, an attempt to respond responsibly to a demand. Instead, higher education must focus on placement *during enrollment* in active learning experiences. **The “outcome” is successful placement in a problem-related group project situated within a real-world problem.** Placement results in contributions to society; learning outcomes not so much. And placement in an authentic problem structure is, in many ways, the *start* of a career well before graduation. It is an outcome embedded in an outcome. Outcomes must be embedded within civil responsibility in this century. An outcome is not just a “job,” but a contribution to a better society.
10. Higher education institutions are not “businesses” but are dedicated to social good. While there are business offices, and their purpose and function important, the institution must be organized to align with its mission of learning, not controlled by monetization efforts. Retention, or the study of retention, to the extent that study and retention efforts lead to learning engagement, is valuable but “retention” as in “keeping customers” does not contribute significantly to the social mission of education.
11. Higher education does have a “civic responsibility,” but that is the wrong term for this human pivot moment: its primary responsibility is to *civil* society, to support and amplify the social good within civil society. Civic society is politics and politics is too strongly influenced by power and wealth. Education is the largest sector in *civil* society and the most influential by far.

## **Humans ARE Technology**

Without our technologies, we primates in the *Homo* genus would still be cowering in caves: we are only a dominant species because of technologies: tools, machines, clothes, houses, fire and so on. We humans therefore ARE technology: it is not separate from us but part of our being. Our technology is our lion’s teeth and jaw, inseparable existence and essence.

The Industrial Revolution, made possible by agriculture -- enough people could leave the farm to create cities and therefore the density needed to create workshops and eventually

factories -- caused the climate crisis by pumping so much carbon into the atmosphere that it then caused the mass extinction occurring now.

The digital revolution can and will solve the problems created by the industrial revolution if enough of civilization can survive this century to make that happen. We can generate enough of our energy from renewable sources to mitigate the worst effects of the climate crisis and we can manage those renewable sources efficiently with digital technologies.

More pertinently for higher education and the goals of this Report, technology is transforming how students learn. The pandemic pushed education into “going remote.” This move is seen as negative, in general, but some are realizing that a multi-venue learning design has advantages.

### **A Story of Technology in Higher Education**

I spent a lifetime in American higher education. When I stepped down in 2017 from the higher education non-profit I had founded (with a partner) in 2009 and then led (with another partner) for eight years, I continued on with academic research. My field is cultural history but I had evolved, with the technology revolution in higher education, to a field within cultural history, the history of technology, and, in particular, how to use information technology to create learning experiences for college age students.

As an “early adopter” who saw first-hand how extensively information technology changes the dynamics of social learning, I found myself within a new community in higher education that was made up of those who had also had an epiphany about teaching and learning because of their use of technology.

Within a couple of years, we tech people were seen as change-agents or simply the people who could boot up a computer. I was an English professor but now found myself at sporting events in luxury booths rented by tech companies -- they saw higher education as a natural path to widespread adoption of technology: get college students using computers and they will use technology all their lives and get others to use it too.

### **The Community of Early Adopters**

In the late-1980s, those who could speak with insight into the effects and potential of information technology in higher education were few and far between -- very much “far between” because many of us had only met through email.

It was always an amazing experience to meet someone in person who you had only known through email text for a year or two. “Oh, this is what you look like! I had pictured you so differently!” (One person told me “you are better in writing than in person.”)

I even made it onto public television. I was “newsworthy” for being just a hair’s width ahead of my colleagues in higher ed regarding technology. I was lucky enough to be teaching deaf students at Gallaudet University in Washington DC and was thus spurred to

find some way to help deaf students become more fluent in a language they could not hear - English. (It's analogous to teaching sign language to blind people).

It was an almost unsolvable problem -- developing fluency in a spoken language to deaf college students -- until we had computer networks that could support a real-time conversation in English. It is through conversation that humans learn. Deaf people had had to use sign language and gestures and lip reading to communicate with hearing people; they had been deprived of the natural form of English, spoken English, and could see only the secondary form of English, written English. Without the sounds of English in their heads, written English was a lifeless form, akin to Latin, as I said at that time. The computer network, for the first time in all human history, made English conversation *visible* on the screen to deaf people and therefore "alive." My students loved it.

This discovery, an actual human historical event (deaf people being able to see and participate in the language of the culture in real life action), led me to a career change as an "early adopter," a techie.

### **Humans and Technology Evolve Together**

One perspective we started to use for understanding technology was that "humans and technology evolve together." It was a shorthand way to say that the human USE of technology was the determining factor for value, not the technology itself: over time, our habits evolved and the technology evolved to fit that evolution -- or the technology evolved and we changed our habits. It's hard to say whether humans or machines caused the changes so it really was and is "co-evolution."

Did we humans evolve adaptations to the new technologies? Yes. Did the technologies have to adapt to how humans use the technologies? Yes.

We were understanding how the affordances of technology would drive both ends of the evolutionary spectrum -- the machines and us. The potential uses that are implicit in technology are called "affordances." What do they allow us to do, or afford us the ability to do?

And that word, "affordances," now applies to my argument in this document. I am writing about the scary possibility of "blissful extinction" and, in that context, "affordances" is at the core of the argument. Human affordances allow us to be many things, good as individuals and often bad as societies, it might seem. For a long time, the affordances we have followed (human affordances = what we are able to do) let us create large societies to the point of exceeding the capacity of the earth to support our numbers. No other animal our physical size has grown to 7.5 billion individuals in the history of the earth.

But human affordances also allow us to be smarter and kinder and more commodious to our environment.

### **Giving the Finger to the Earth**

There is a story behind that questionable subhead. The story, unlike the subhead, is meaningful beyond a double-entendre. A finger is a digit and the thumb is “the first digit.” The idea that human species have an evolutionary advantage, the opposable thumb, is true: we humans could pick up stones and use them as tools with more felicity and agility than other species.

And, when some human discovered, by accident we can assume, that they could hit two rocks together and flake off a part of one or both rocks, and when they realized the flake was a better tool for preparing food -- cutting root crops or fruit or gourds -- and later, to cut meat -- the use of human stone tools determined evolutionary success beyond imagination. How could a relatively weak and slow primate become so dominant? By “giving the finger to the earth.”

The double meaning has more layers: yes, we “contributed” our digital talent to the earth, so to speak, but using our digits in such complex ways and then, having to teach novice humans how to make stone tools required a language. Since we were using our hands to make tools and needed to show novices how to use their hands for tool making, hand gestures became the language (sign language) of teaching essential skills among humans. How better to teach tool making than to employ hand movements that you use in tool making? (Since this speculation about our first human language makes more sense than “we did not have language,” those researchers who make that absurd claim are on the spot to prove their speculation about a language-less species developing a culture).

Important: when we learned how to make tools, we did not have -- yet -- the vocal apparatus to make the nuanced sounds necessary for a spoken language. Our only option was sign language.

But, wait, as they say on TV, let me offer you an even further layer of “giving the finger to the earth.”

As we used tools, invented language, then a few hundred thousand years later, learned to control fire and cook (1.8 mya), we humans used our digits and hands to make weapons, to become successful team hunters, and were thus able to reduce “chewing time” with cooking from 6 hours a day to 1 hour a day and therefore collect and kill more food than before cooking. (Richard Wrangham).

Since our brains consume 20% of our total energy effort now, on average, it’s clear our brains are energy hogs. Cooking seems to have helped boost the size of our brains. We had successfully given the finger to the earth’s food sources and “tamed” them.

And, yet, another couple of meanings for “giving the finger to the earth:” when *Homo sapiens* emerged as a new human species only 300,000 years ago, and we sapiens inherited tool making, fire, cooking and language, we sapiens combined that array of human traits and abilities with an inherent sense of empathy and cooperation to the point that sapiens

out-populated all other human species in Africa and around the world and are now the last humans.

We had “given the finger to the earth” by forcing all of our cousin species to extinction. We were too good at evolutionary success to be “good” in a broader sense.

Another of those meanings: with the industrial era, a seemingly logical outcome of sapiens’ success over the millennia, we again “gave the finger to the earth,” producing and consuming to such an excess that we have brought about a mass extinction.

The earth has “given the finger to us,” now, by hurling coronaviruses at us.

But, there is a final meaning that is as important as any of the other “finger” metaphors: we sapiens created “digital technologies.” What an irony! Can we have “digital technologies” become the last meaning of “giving the finger to the earth” by these technologies allowing us to become good stewards of the earth?

That phrase, “good stewards of the earth” has had different meanings over the years -- doing good things like recycling or purchasing an electric car, by preserving nature, or cleaning up nature, and so on. Never have we had to be good stewards collectively, as the human species, to literally manage our global interactions with the earth. Or, never have we had the necessity to do so, or the ability to do so.

Digital technologies are *control* (cyber) technologies. They control or manage mammoth systems. We have risked our species’ survival during the industrial period, but at the same time, we have deployed digital technologies to support and coordinate global systems.

Can we finally give the finger as *a gift* to the earth in the form of digital (finger) technologies? Can that one chip of a rock 2.6 million years ago now ultimately lead to a balanced earth-human cooperation? Have we become *Homo digitalis*?

See:

[https://www.researchgate.net/publication/322968554 Towards Homo Digitalis Important Research Issues for Psychology and the Neurosciences at the Dawn of the Internet of Things and the Digital Society](https://www.researchgate.net/publication/322968554_Towards_Homo_Digitalis_Important_Research_Issues_for_Psychology_and_the_Neurosciences_at_the_Dawn_of_the_Internet_of_Things_and_the_Digital_Society)

Our hands have built human civilization. Our “hands” as extended infinitely by digital technologies (“externalized intention”) can build a civilization more “courteous” to the earth. We are, literally, “in our own hands.”

## **We Humans ARE Technology, 2.**

Technology defines humanity. Without our tools, language, fire, clothes, houses and all that keeps us alive and makes societies possible, we would still be cowering in caves. However, those very tools, our machines, became too big and produced too much greenhouse gas.

Our move to clean energy -- wind and solar and so on -- will allow us to live in harmony with the earth.

Living in harmony with the earth is civilized. Living in antagonism with the earth is using machines recklessly, unthinkingly, with disregard for consequence except making money. Think factories, factory farming, weapons, inefficient transportation, strip mining and fracking, power plants, oil tankers, and the entire industrial complex. Wealth-driven society has damaged the earth; alternatively, the civil model can be driven by social good. The drive for social good must define our new life. Wealth generated with clean energy is sustainable; wealth generated with dirty energy was and is not sustainable.

Wealth is ok of course -- who would argue otherwise -- but wealth as the only goal of a society regardless of consequences is blind greed. Wealth as a means to social good is open-eyed virtue.

### **Big Technology**

We humans got into trouble by using big technology -- carbon consuming machines, and bombs and strip-mining machines and fossil fuels and exploitation of the earth. We learned how to control fire 1.8 million years ago. We used the power of fire to create more and more power for consumption and exploitation of resources: we thought we had no limits.

But, we humans can get out of trouble by using human scale technology like renewable energy technologies. The idea is simple, the how-to is daunting. The move to sustainable energy ("renewable" and "sustainable" are both accurate descriptors) has sped up in the past few years as the cost of renewable energy (wind, solar, tidal, etc.) has declined and become competitive with fossil fuel energy. Investors see a great new opportunity, fortunately, so the growing renewable energy sector is amply funded.

### **The Wrong Kind of Industry and The Right**

Since about 1760, humans learned how to magnify their power by using powered machines and, over the ensuing 360 years have brought about an ecological collapse on earth. Let's call this period "industry for power and wealth." Let's call the new period starting now "industry for social good."

This is not to say that humans have not benefitted from advancements over the past 360 years, or even to say that creating wealth is in any way essentially bad -- what is bad is the *excesses* in our use of machines. What is bad is thinking we have no limits. The contrast is with the move now to sustainable energy that will lower fossil fuel use and help us live in harmony with our earth.

### **Technology Was Too Good to be Good**

We learned way too well how to kill each other with machines. We learned way too well how to generate wealth with machines. We learned way too well how to exploit the earth

for human use. Our machines in their power and size and reach *took over* -- we allowed all of their affordances to lead us: whatever machines could do, we did. We built strip mining machines that can destroy a county in a day. We built nuclear weapons that can kill off all humans. We have poisoned the earth, set it on fire, and heated it to the point where climate effects are deadly.

The solution is to adopt *human scale* systems and technology: local and sustainable but *coordinated* globally. We can become civilized again by allowing civil society to lead. This is a way to move from despoliation to sustainability. Civilization is, first of all, local; it is manageable by the community. Installing renewable technologies in communities can lead to creating resilience for that community. A move to local, more autonomous communities is a way to reduce the use of mammoth oil tankers, of thousand-mile pipelines and high-tension wires and all the enormous inefficiencies and waste in these big energy technologies.

The current model of using oil, natural gas and coal for energy has many problems. But one problem is not mentioned often enough: we have to transport oil, gas and coal from one place on the earth to other places on earth. That transport is wasteful, inefficient and dangerous. We burn fuel to carry the fuel to where it will be burned. We burn to burn. On the contrary, sun and wind are everywhere or almost everywhere. Once wind and solar installations are in place, we need much less transport.

We now have a lumbering, dirty, inefficient system for energy that is finite and that damages the earth. It is a global system. Renewable energy is local.

Globalization, redefined, can be for *coordination*, not for unmanageable and vulnerable systems, supply chains stretched around the world. Humans lost control of our machines; their use and deployment were guided by the worst human instincts, the drive for control and power and wealth and not by a rational grand plan. Just doing more of the same ad-infinitum is mindless and destructive.

In this Report, you see a global plan (higher education leading) for human survival and a new human era as we return to civilization. Nothing is more crucial in all ways than this plan and its implementation. All humans can participate in this plan: that is the beauty of this civil plan.

At the core of this plan is the idea that we need millions of young people who know how to learn in ways necessary during this century, who are aware of the need for a different kind of human society, and who can contribute in millions of ways constantly over years, which is what must happen for human survival. This is not a “war” on climate, but an infusion of new kinds of humans into society during this century.

### **Are Humans “Good”?**

In 2016, March, in Manhattan, I was walking north on 6<sup>th</sup> Avenue toward 40<sup>th</sup>. It was mid-afternoon, well before the pandemic emptied streets in Manhattan. The usual flow of

pedestrians streamed north and south on my sidewalk. In Manhattan, you need to “stay to the right,” in your lane. Pedestrian traffic is that heavy.

At 37<sup>th</sup> Street, as I reached the sidewalk across the street, a man pitched forward on to the sidewalk, his briefcase spilling its content around him. He lay still. People around him rushed to his aid; one of them in the crowd of ten or so that formed a protective circle around him, knew he was having an epileptic seizure. She knew what to do -- keep his head from hitting the pavement. Sit him up so he doesn't bite his tongue. Several people followed this “expert's” advice and served as his EMTs. I was outside the circle so could only observe.

I had lived in New York as a teen -- on Long Island -- and had -- one frozen New Year's Day morning -- walked through the Village and seen what looked like a dead body lying in a doorway. It was before cell phones. He lay still. I had read about Kitty Genovese and how she had been attacked and killed and that no one had emerged from houses to help. The saying in New York, then, was “I didn't want to get involved.”

But these good Samaritans on 6<sup>th</sup> Avenue and 37<sup>th</sup> Street in Manhattan in 2016 belied that cultural meme. They had instinctively and, as one, had rushed to help this fallen man. I stood to the side in amazement. Those who had rushed to help were all shades of skin color, from New York and other countries, were in fact a representative group of humanity. It was humanity who had rushed to help. I can write this only with tears in my eyes.

Yes, on instinct, humans do rush to help any human, one of the only species who do that for non-kin individuals. This one unplanned experiment proved the principle about human traits.

### **Again, Are Humans Good?**

That question is misleading: individually, we humans can act either way but our prominent traits as humans are empathy, cooperation and the instinct to help other humans. Moreover, we humans are not just a collection of individual beings, we are at our very core indistinguishably part of a human group.

As social groups, we humans are “good” by being good to each other. As social groups, we humans are “bad” by competing aggressively with other groups. Humans have survived only because we live within groups, whether the groups are civil or not.

In large human groups, once our agricultural methods allowed us to produce a food surplus, that surplus unfortunately induced human impulses toward greed. Our governments became arbiters of who got to exercise their greed and hoard power and wealth. Undoubtedly, and inevitably, even small groups had hierarchies that required mediation, so the new scale of human society magnified “evil.”

As human groups became larger, and especially when cities started to form, “evil” within those groups could be “farmed out” to leaders, acting on behalf of evil even if the leaders

themselves were not evil in the same way. Abstracting out evil in this way was an unfortunate feature of the growing size of our societies -- that social distance between individuals and leadership allowed individuals to feel free of the evil that was happening collectively: that distance allowed us to ignore our complicity. We did and do "evil" anonymously and thus irresponsibly.

We humans had found a way for "evil" to have agency without responsibility. We had organized in a way to support greed without guilt. We could refer to "the economy" as if "the economy" was an independent agent. We could refer to "jobs" as if that reference, too, is an entity. The collective separated evil actions from anyone's responsibility. So, are humans good or bad? Individually and in small groups, we are good; as a large collective, we are, in many ways, bad. Human civilization has killed off the global ecology we evolved within. How can civilization act without evil?

Our answer is to allow civil society, in the form of "education," to lead. Educators and students, all two billion of them, don't need permission to cooperate around educational design: getting a few hundred million students around the world active in saving the earth AND humanity does not require civic action.

### **Human Evolution Studies; The Big Context**

I have been involved in education my whole life as a student and as a professor and researcher. Yet, at no point have I heard anyone refer to human evolution studies as informing teachers about how humans learn. This is shocking to me now that I have spent four years researching human evolution and exploring how human evolution aligns with learning theories.

Human evolution studies and the ideas in those fields informs everything in this Report: here we are at a moment of possible extinction of the human species so we need to know better how we have survived so far and what qualities or traits helped in our survival. What could be more obvious? Let's get away from blaming and avoiding and actually think about the problem: if we are facing extinction now, which we are, how have humans solved this problem in the past? What traits do we have that can help now?

### **Let's Bring Out the Good In Us by Seeing It**

Western civilization converted, at some point, from referring to "original sin" to an equally misconceived and misleading belief about "human nature:" that we humans are essentially brutal and corrupt (sinful). Darwinism, as a popular concept understood as "survival of the fittest" replaced "sin" with "human nature" as if that mere two-word phrase sums up who we humans are. It is a rare day when you don't read or hear the phrase "human nature" and understand from the context that it's referring to a vague idea of evil.

The wars of the last century, including the Cold War, the repressive regimes that proliferated, the media's fascination with violence and aberrant behavior (because it sells) among many other factors, have led our culture to a deep belief in a *Lord of the Flies* view of

humanity, a Hobbesian vision of how “the leviathan,” a powerful state, must control the worst instincts of humans. It is the “law and order” argument used to gain political advantage: the assumption that most people will buy into the belief that human nature is corrupt.

A belief in human nature as corrupt, if it is widespread, is an effective way to control populations: the logical next step then is people’s acceptance of repressive laws and large police forces rationalized as necessary.

Our culture has simply stopped using “original sin” but now uses “human nature” to mean nearly the same. Devastation of the planet by humans is just the latest confirmation of our corrupt nature according to cultural conversations. We humans are an invasive species; we are a plague. However, describing humans this way is defeatist and depressing: it makes it seem that climate disaster is deserved and inevitable.

The assumption, commonly shared, that human nature is corrupt is misleading as a descriptor for a creature that defies being categorized. My assertion is that, in fact, humans are too good to be good. It is our very goodness that has led us to excess. Arguing that we humans are, by nature, either “good” or “bad,” a dispute that is centuries old, prevents seeing the reality of human life. In *Humankind*, by Rutger Bregman, the author points out that *The Lord of the Flies* is fiction, after all, that the book has been perceived as a real story, and that the book reinforced and reinforces the common belief that human nature is corrupt -- and he shows that this belief is belied by a real lord of the flies story.

Boys actually, in real life, marooned on a Pacific island over 6 months, acted in completely different ways than in the fictional *Lord of the Flies* depiction: they helped each other, cooperated, rescued one of the boys and successfully set his broken leg, found food and shared it, and so on -- this actual, not fictional, real-life test of what young boys will do if left to their own devices reveals our human best qualities -- empathy and cooperation.

This story and others in the book *Humankind* suggest that our culture is skewed in its perception of human nature. We humans actually do not always look for personal interest in life as is the assumption in theories of capitalism. We do not ignore the Kitty Genoveses of the world -- that story, like *Lord of the Flies* turns out to be false -- in fact many people called the police as they witnessed Kitty on the street in Brooklyn in 1964 being attacked and one woman did rush out to help her, an ambulance did arrive while she was still alive with that woman holding her head and talking to her. Empathy won out over caution. Most soldiers in battle do NOT fire their guns and in fact show revulsion about killing another human, as the author shows.

Yes, we humans are also capable of bad and that’s obvious. But if we were corrupt by nature, as humans, how could we have created such large and complex societies? In fact, human traits of empathy and cooperation led to our growth in numbers and domination of the world. The only evil in us may be our being too good at growth. Combining empathy and cooperation in a species with an opposable thumb is a magic formula for population increase: tools and weapons, fire and cooking, language. As we face the global climate

crisis, we all must recognize the good in us and use our belief in the goodness of humans so we can act as a *collective* to reverse climate change.

And, in education, we also need to start with the idea of the learner as disposed toward learning, as already learning, not a “blank slate.” Students are our fellow researchers. We can trust them to learn even when they are out of our sight. Teaching needs to be inviting, to seem welcoming to novices to join the learning community. We all have a grand enterprise now: to save the human species in this disrupted century. If “we will get through this together,” we need to work as a global coalition of learners.

### **The End of All Things Human**

The human genus is 2.5 million years old (*Homo sapiens* is a latecomer species in the genus at 300,000 years old). Many species of humans have emerged, in many cases simultaneously or at least during the same era. Human species co-existed in Africa, migrated around Africa, new human species emerged in Africa, and, eventually some Africans migrated out of Africa and then to different parts of the world where, isolated from other species, they developed regional characteristics and traits because of climatic and ecological differences. We are all Africans but developed different features because of genetic isolation in different parts of the world. We are all nearly 100% genetically identical but we have different skin colors and facial features because of different climates in different parts of the world.

Only 300,000 year ago, only in the last 10% of human history, did homo sapiens appear in Africa, migrate out of Africa, out-populate all other human species, and then end up, now, as the last human species still alive. When we talk about our “ancestors,” we must think also of the ancestor *species* who gave us language, tools, fire and cooking. We owe those earlier species (whose genes in some cases live on in us) a reverence for *their* earth that we inherited. We are not the masters of the earth, we are the species that inherited incredible cultural wealth and have spent that wealth unwisely. We are the “silver spoon” species. Not everyone feels “rich,” of course, for obvious reasons, but our species did inherit incredible wealth.

And, just as quickly as we “conquered the earth,” eliminating all other species, we have quickly reached the *limits to our growth* as a species with the climate crisis.

### **Homo Sapiens as the Last Humans**

We humans are good at going extinct. This is important for us to know now in the climate crisis that we created: our most pronounced human “trait” may be going extinct. We homo sapiens are in the process of playing out that trait by being too good to be good: our very sociability -- our good qualities -- has resulted in a population too large for the earth’s resources to the point of ecological destruction. We humans are a paradox.

We have such a massive civilized infrastructure that it is easy to believe we are invincible even as the climate crisis worsens. It is easy to ignore burning houses, flooded houses,

blown-down houses elsewhere in the world. It is easy to ignore that the global ecology is undergoing the 6<sup>th</sup> mass extinction. It is way too easy to continue on to “blissful extinction.”

How do we humans, around the globe, make sure our communities are sustainable, even during a disaster? Who will do it? Who will lead? How can we change how our civilization works so that we can not only survive but become a much better version of humanity? We humans might survive and figure out a better future -- I honestly don't know -- but who does?

Though I know we humans may be headed to blissful extinction, because we are so far from global cooperation when we need it most crucially, I offer here in this Report what we could do if by some wild measure we could act as one species.

### **Is Human Cooperation Feasible Transnationally?**

Humans love competition. We compete in sports and we compete in our jobs; we compete for attention in our family or in social groups; we compete for resources; and, disastrously, we compete nationally through aggressive actions and war. Politics is a way to referee competition for money and power. War is a way to resolve disputes when politics don't work.

We live in a world of competition, but, we also live in a world of cooperation, a natural human trait at a personal level. Locally, in our neighborhoods, we cooperate in many ways. Driving requires cooperation on a grand scale: staying in the right lane on the highways and streets; obeying the traffic lights; driving at the pace of other drivers; letting other drivers change lanes; stopping for pedestrians in crosswalks, and on to the dozens of ways that we must cooperate while driving in order to carry on our business or errands. We cooperate with neighbors to build fences on our shared property lines; we notify neighbors when a coyote is spotted or a dog is missing; we say hello when people walk past our houses. One researcher calls us humans “the friendly species,” or “homo puppy.”

In stores, we line up to check out. Most of us obey laws or rules willingly. Most of us keep our outdoor spaces, if we have any, relatively neat. We place our trash bins out on the street on the proper days. We practice social courtesy and etiquette. On a day-to-day basis, it would seem we are all “civil” as well as “civic” or political.

Without habitual local cooperation our society would not function. Locally, we sometimes cooperate to suppress anti-social behavior. In real-life, face-to-face situations, almost all of us cooperate willingly. Locally, we see the inborn human cooperation trait play out.

As our camera pulls back and we look at a larger scale, that natural human trait starts to lose its effectiveness: a rural area may vote against state tax policy that favors urban areas, or vice-versa. In the U. S., at the state level we start to see the downside of politics more plainly: people not cooperating as neighbors but competing as members of a political party.

Politics in one form or another is present in all human interaction, of course, if we use a broad definition of “politics.” I have seen ugly politics within an academic department when members deny tenure to someone whose research interest is with “the other faction” in the department. I have seen ugly politics in a church where lay ministers compete for the attention and approval of a priest who has attained a semi cult-like standing. No one can escape the innate competition in human social hierarchies. But, at the local level, cooperation mostly wins out for important issues. Though the U.S. is more violent than it should be or could be, violence is still rare enough in most parts of any U. S. locality that society functions well.

But, once we get away from “face-to-face” real life interactions and start abstracting out by one label or another -- male, female; democrat, republican; wealthy, poor; majority, minority; light skin, dark skin; educated, not educated; disabled, abled; rural, urban; red-state, blue-state; and so on - in the abstract (or, inevitably, in the stereotype) we become divided. Human empathy is extended to those who look like us or with whom we can identify.

And, then, pulling back even further, nations compete. At the national level, competition can become deadly. We allow for “legal” wars where it is ok to kill another human from another country. Even then, some people may be tried for “crimes against humanity.” To rationalize killing humans of another nationality, we demonize those nationalities.

The point is, however, that we humans are familiar with and even comfortable with a mix of cooperation and competition, even deadly competition. This is the scenario we are comfortable with: large scale human society portions out cooperation and competition.

And, as long as nature (the all-encompassing natural context) was more or less predictable and we humans could keep exploiting the earth with no consequences, our foibles were ok. We could war on; we could be irrational humans forever.

However, now, we face the comedy/tragedy of 2020 and hereafter: despite our natural context changing at a dangerous pace, we will war on and continue with our foibles and irrationality. We “know” the human tradeoffs between competition and cooperation. We are caught up in our human story. We could ignore everything until we couldn’t.

See: <https://www.pressreader.com/uk/the-oldie/20200801/282965337398669>

### **Which Human Affordances Should Dominate?**

Humans, we could say, have too many good qualities. As individuals, we are good, but we have allowed society to do bad. Now, we are paying the price for being too good at growing large societies: ecological collapse. Our good qualities -- empathy, cooperation, instinctual aid for non-kin individuals, language and a rich culture -- are unfortunately balanced by the “deadly sins” and our “bad” side has been too amply expressed by our large societies -- we let society do bad while we feel we are good as individuals. It is easy to say “I could never kill an animal but I’ll buy meat at the grocery store.”

In the technology world, we talk about “the affordances of technologies.” An analogy: birds are hatched with the *potential* for their species-specific song patterns. But, if they are -- as happens in the bird world -- raised by parents of another species, their song patterns will be stunted. One might say that birds have an “affordance” for their songs that have to be activated when they are hatched. Those who are not raised by their own species do not develop the full song pattern.

Human affordances also have to be activated. But they can also be stunted by experience. Or our traits can develop perfectly but those traits that are good for civilization can then lead to destruction of the earth because we evolved to survive, not to be overseers of the earth. Our evolutionary success held the seeds of our destruction. We humans have to reframe “good.” Expansion and growth must be redefined in ways that can be “sustainable.” They are not now so defined.

### **Are We Humans “Fit” for this century?**

Our society, we just learned because of the pandemic, is not “fit” for the new chaotic ecosystem. Why? We humans now depend absolutely on fragile global systems of vital supplies, finance, health, scientific discovery, disaster response, information and on to all aspects of the global civilization we have created. We thought we had ended evolution and that we humans now lived in a built environment impervious to nature. We forgot that mother nature is more powerful than we are.

Mother nature has been permissive, it would seem, while our numbers exploded over the past couple of centuries. We thought we had “conquered” the earth. We humans managed to overcome plagues and famines and, going back 10 or 15 thousand years, even survived the most recent Ice Age, while our numbers continued to grow.

But now, nature is generating new pathogens each year that keep us back on our heels. Earth generates extreme heat and storms and fires and floods that reveal how unprepared we are as a species for the global ecology in which we now live.

How do we become “fit” in the new challenges of “natural selection”? Certainly not organized as we now are as a civilization. Political leaders have failed us again and again. During the pandemic that is still with us, 2 men have contributed to a disastrous mess: the political leaders in China and in the U. S. have inadvertently collaborated, it can be argued, to spread a pandemic. How did we humans get to the point where the whole world can suffer because of the whims, fallacies and needs of 2 men?

The rise of autocracy in the world in this century – the invalidation of democracy through social media attacks and manipulation, corrupting the voting process, and the suppression of human rights – shows us once again, as with the wars of the last century, that relying too exclusively on *civic* society is dangerous for our species. Civic society is organized to concentrate wealth. Period. End of argument. That failed.

Instead, the strength of our species is shown in our *civil* society. Civic society brings out the worst; civil society brings (or can bring) out the best.

Because our society is organized primarily as civic society, an anachronism from the luxury time of the past few centuries when we humans could be reckless and when we could thoughtlessly increase wealth and concentrate power, believing that riding the horse of unbridled capitalism would go on forever, we have experienced disasters. This is not a political tract, however, but a wakeup call to all of us humans that we can survive and actually become a far better inhabitant of the earth if we organize around civil society globally and diminish the role of civic society. In fact, then, this is an anti-political tract.

<https://www.nytimes.com/2020/10/28/opinion/climate-change-election.html?action=click&module=Opinion&pgtype=Homepage>

## **Globalization**

Instead of “[de-globalization](#)” — as some are advocating — I see us all benefiting from a “re-globalization.” This time, though, we must concentrate on getting it right, aiming for a renewed integration of our world that centers on the well-being of its people. A re-globalization that strengthens and builds capacities within our countries and ushers in true cooperation rather than competition. A re-globalization that recognizes that a single country, acting alone, cannot succeed. One country’s failure is every country’s failure. [same URL]

The Last Humans Project is about a global shift from the dominance of civic society -- government that is overly influenced by wealth and power to the detriment of most people -- toward civil society that has the common good as a goal and operating ethic. This shift can be led, in part, by higher education, a force of 19,400 institutions of higher education and the roughly 250,000,000 students enrolled at any one time around the world. This “force” has not been organized, yet, to address in a unified way the current or pending disasters of this century. (add in primary and secondary education and we are at 1 billion 750 million -- nearly a quarter of the total population of the world.)

One way this “force” can be unified to deal with global disasters is with the concept of building the workforce for human adaptation to the climate crisis that now includes pandemics.

## **Restructuring Globalization**

Globalization, in the form it took over the past decades, followed the same profit as the be-all and end-all catastrophic impulse that doomed the industrial revolution. Go for profit no matter the ecological cost. Use “economic growth” as the holy grail. Sell “jobs, jobs, jobs” to the electorate as equally holy.

Globalization framed as “global coordination and cooperation” is the antidote. The bottom line is not wealth for the world’s 1 percent, but human survival. Our bottom line now must be to avoid extinction and instead move to a resurgence of civility.

As part of our species’ move to overly large technology (machines) in previous centuries, its massiveness, over the industrial era, we reached the point of striving toward global economic hegemony, the follow-on to colonialism. Like so much human excess, globalization has been a disaster. You ignore consequences and the consequences catch you. In this second colonial period (“globalization”), companies, not countries, try to dominate. It is corporate colonialism and has had an equally deleterious effect on humanity.

Globalization defined not as *commerce* but as *coordination* is essential. Let’s re-localize supply chains as much as possible. Local supply chains are sustainable; global supply chains are vulnerable. We can coordinate globally with information technology.

Civil society already works across borders. It does not make wars nor beat the drums of nationalism. Civil society cooperates on research, on education, on poverty and hunger, on health, on climate action, on human quality of life and more.

Civil society lives within the species; civic society lives within the wealthy and powerful few. Civic society needs borders for control. Civil society disdains borders for social good.

<https://www.brookings.edu/blog/up-front/2020/04/06/civil-society-an-essential-ingredient-of-development/>

### **The Era of Climate Refugees (Yes, in the U.S., too).**

Climate disasters crater local economies as homes drop in value, people leave the area, the tax base drops and the economy experiences a cascade of negative effects: it is not just preserving life in communities but maintaining the local economy. The article cited here provides a thorough description of how many U. S. states will begin losing population as fires, droughts, floods, storms and other climate disasters force migrations in the U. S.

<https://www.nytimes.com/interactive/2020/09/15/magazine/climate-crisis-migration-america.html?action=click&module=Spotlight&pgtype=Homepage>

### **Is It Realistic to Believe Humanity can Arrive at Sustainability?**

*Civic Society is government; national governments have failed to address climate change adequately; but **civil** society at all levels can do better, led by education, which includes 20% of the human population. Civic society at the national level will continue to fail if that is our only agent for change. But civil society has the numbers and the inclination to make human civilization sustainable. Humanity, if it could act at a species level, would turn to civil society at this point and let it take the lead.*

*“You can look at the magnitude of this ambition and conclude that California is fated for apocalypse. That may be true. But it’s also true that the scale of our invention, our genius and our tragedy, requires us to keep reinventing, . . .*

*<https://www.nytimes.com/2020/09/18/opinion/fires-california-climate-change.html?action=click&module=Opinion&pgtype=Homepage>*

*“California was the land of opportunities,” Dr. Hsiang added. “There’s this story that we can have it all, and that’s just not true.”*

*<https://www.nytimes.com/2020/09/20/climate/california-climate-disasters.html?action=click&module=Top%20Stories&pgtype=Homepage>*

The climate crisis and its disasters have arrived much sooner than was expected: not in 2050, not in 2040 or even 2030 -- now, in 2021. The Australian bush fires, the pandemic, and the California wildfires not to mention hurricanes and heat, are exactly what has been forecast for 30 years. It happened. But, despite most people believing we are in the crisis or that climate change is “real,” an actual plan of action -- beyond the obvious goal of reducing use of greenhouse gases (necessary but not sufficient) -- has not arisen.

We need to achieve all of the following three criteria for human survival:

1. Shift to **renewable energy** -- underway and could happen to a significant degree by 2050.
2. Attention to local **resilience** to survive climate disasters -- scattered and unlikely to ever be universal.
3. Becoming **sustainable** -- hard to achieve anywhere because localities depend on global or national supply chains and other social and technology systems that may be disrupted. How can we achieve this in just a few decades?

Achieving number 1, while necessary, will not prevent mass human extinction. And, yet, number 1 is all that our leaders focus on. They are still operating within the delusion that the all-encompassing natural context is a steady state. They blame others for the failure of the human species to coordinate on a global level, so seem to have given up on what is necessary to avoid “blissful extinction.” This must change.

### **Must we Fight?**

I had a staff member in my university technology unit who spent time in each of our staff meetings complaining about “the university.” He took up a lot of time. I told him that he, as a manager, was in fact “the university.” So, in effect, he was complaining about himself. That had no effect. His criticisms continued. I told him that criticism is not the same as work. That had no effect. He continued his complaints. He had been around the institution long enough that he was “protected” in his position, so I could not simply fire him.

However, he did move into another position away from my unit. In that new unit he continued his complaints and criticisms until he went too far and insulted the top administrators at the University publicly and was fired.

None of his criticisms were valid or useful. His is an extreme example, of course, but I have been aware throughout life how much easier it is to be *critical* than to *do*. To adopt the “low ground” of negativism is the easy path. Once you corner the negative position, you have no more responsibility, or it would seem so. It is the easy way out.

Only if you are hopeful do you then have to find solutions: if you say it is hopeless, you are off the hook. I know that those who march and demonstrate against the fossil fuel industry and their funders may actually do good, but if that approach is our *only* solution for climate change then we humans have little hope.

One indicator of our failure, so far, as a civilization to address climate change is told by the word “fight.” The word shows how humans resort to “fighting” or declaring war on any problem, forgetting how the U. S. “War on Poverty” and “War on Drugs” created such disasters. We love the metaphor of “war” as if “now we will get really serious, man.” But in wars, everyone loses.

Right now, under the rubric of “fight,” we are engaged in futile efforts. Trying to “fight” climate change has no chance -- we cannot make the global shift to renewable energy before climate disasters start the inevitable downward spiral, bringing cascading climate effects that produce even worse effects that then lead to even worse and so on.

But, war on, we do. It is comforting to be part of a “war” and march, carry signs, shout, cheer as we gather in large crowds. We are doing something; we are protesting bad stuff. And, while you shout, dozens of species go extinct.

The 19,400 institutions of higher learning can activate a climate force to move their own localities to a sustainable economy based on renewable energy. Government and corporations will not do that. We need to accept this fact and get to work.

When we “fight” climate change, who are we “fighting”? We can’t fight nature because nature will always win. If we fight each other --people against people -- we also will lose because in a fight someone wins and someone loses. Making humanity “sustainable” in the deepest sense, means we stop *fighting* and start *collaborating* globally. “Fighting,” is familiar to us -- “war” -- but using that concept of “fighting” is a formula for failure.

Fighting “climate change” is absurd since we humans have already lost. We are already into climate disasters. We need, instead, to be “adapting” to climate change while still energetically moving ourselves to renewable energy sources for ALL use of energy. In other words, we will “win” if we stop “fighting.” Let’s stop using war metaphors: in wars, everyone loses. It’s a self-defeating metaphor. Let’s “adapt” instead. That’s what this Report is about.

## How to “Get Civilized”

With machines and tools, we humans thought we were the apex species and that we had conquered the world. But, mother nature sent the pandemic as a corrective. We were demoted by nature from apex predator to just another prey species: Covid-19 has proven to be a fierce human predator.

As we are forced to take up the status of a prey animal once again, not the hunter but the hunted, not the conquerors of the earth, but its servants, we must adapt. That is the real point of The Resurgence Agenda: provide a resilience model led by and supported by education and other parts of civil society for all localities in the world. The model is centered around *human scale* (renewable) technology.

Human scale technology does not destroy the earth but is sustainable for human society over the centuries. We are back, allegorically, in our caves once again, as humans were before fire, and we must adapt to our new status as the hunted and not the hunter. Covid-19 hunts us and we die. It is a universal enemy, lurking among us, unseen. This will not change. It is time for Civil Society to gradually replace the destructive duality of business/government as if that duality represents humanity’s only choices.

Instead, civil society, led by global higher education and other entities in civil society, can bring out the best in people.

<http://climatechange.ri.gov>

<http://www.energy.ri.gov>

## Who Is the Enemy of Civilization?

This Report provides an approach that can guide our species through our common threat. This approach is not a “war” and is not about protest. Our enemy is not other humans but is our own neglect and excess. Our enemy is our denialism and our division. Our enemy is “business as usual.”

Dividing people keeps us prisoners. We are imprisoned in civic society gone corrupt. Civic society by itself may prevent sufficient action on the climate disaster. The enemy is greed. So much money is invested in the status quo, it buys government; national governments compete with other governments. They act contrary to the good in human nature. They keep humanity divided and distracted from the actual crisis.

Let’s leave this pattern behind.

NASA summary: <https://climate.nasa.gov/effects/> We humans are pumping CO2 into the atmosphere faster than has ever occurred on earth before: when levels of CO2 increased in previous millions of years ago time, it happened over thousands of years and life could evolve to adapt to a changing climate. But, now, with levels jumping up to the highest levels ever in just a century, life cannot adapt quickly enough and so we have brought about

the 6<sup>th</sup> mass extinction. It is hard to exaggerate the urgency for us to act quickly. And, to act, and also, at the same time, become a conscious society so we all have a future.

May 5, 2020: “Levels of carbon dioxide in the atmosphere reached their annual peak last month, and once again were the highest in human history.”

<https://www.nytimes.com/2020/06/04/climate/carbon-dioxide-record-climate-change.html?action=click&module=Latest&pgtype=Homepage>

September, 2020: Los Angeles recorded a high temperature of 121 degrees Fahrenheit, a record. Fires burning in California, like the bush fires in Australia at the beginning of the year, are explosive, unprecedented in their fury, create weather, and are all over the State, and in other western states.

These are just samples and they do not include listing the thousands of species that have gone extinct in the past few years.

We are past the tipping point. Ecological collapse is progressing. Human life is universally threatened. Let’s eliminate fossil fuel energy sources, but, at the same time, aim for local survival: we have already failed to “save the earth” we evolved in. We will have a new earth, a changed earth, but we humans can live on that earth, too.

## **Conclusion**

There is no one solution for humanity at this most stark turning point in our evolutionary history. But there are ways to work toward a solution, a solution that would address how humanity can function differently at all levels to create an equitable and just society while also living in harmony with the earth.

Because we have reached hard limits to our folly up to this point, because humanity cannot continue on its current path or operate as is its habit now, we have no choice as a species but to metamorphize -- “change” is too slight a word -- because only the work of millions of smart and energetic humans in higher education and in education at all levels over a number of years, working at the local level, in person-to-person interactions, to reform how society and culture work and believe and perceive, can “save” us.

Our children deserve a far better world than exists now. We humans who have such good qualities, but who can be so bad in the aggregate, deserve to continue on this earth, and we have the ability to follow our better angels.

This Report is a starting point for what must become a global agenda and action. The recommendations here are, by themselves, not original, but taken together, in one report, form a unique challenge to our species.

- Can global higher education accept the challenge to work toward one global goal?

- Can it dedicate 10% of all students in higher education enrolled at any one time -- 25,000,000 students -- to the Resurgence Agenda?
- Can it continue to add 8,000,000 more students to this creative cohort each year?
- Can governments at all levels coordinate with the creative cohort to re-shape human civilization?
- Can the United Nations take up an active role in the Resurgence Agenda?
- Can each global locality develop resilience plans led by members of the creative cohort so that the locality can adapt to climate change, can adapt to a new economic model, and create its own sustainable community?
- Can humanity adopt the Resurgence Agenda through *cooperation and compassion*, and not *combat*? Can we drop the word “fight” from climate action? Can we delete warlike rhetoric from climate action? We are saving ourselves, not fighting ourselves.
- Can humanity enjoy the story of humans over the past two and half million years, see what has allowed our species to expand and create such a grand society, learn from our ancestors, honor our ancestors, and turn from greed and toward empathy?

We know, or should know, that humans have caused the conditions for their own extinction, that humans did this because human society has always been organized around survival and growth, that our technology in the industrial era magnified our “success” so astronomically that we damaged the earth, and that we must now re-create our civilization around civil society to help us survive.

We need to know that the 20% of the human population now engaged in education must coordinate globally for us to survive by creating resilience in all communities around the world. Education, using the new learning technologies-- renewable energy technologies -- can create resilient communities. While the world shifts far too slowly to renewable energy technology, the earth has devastated us humans with Covid-19 and other climate crisis challenges. We cannot go on with business as usual. We must shift from civic/wealth/exploitation to civil/cooperation/empathy. We cannot divide ourselves by skin color or belief because we are literally “in this together.”

We must shift back to local control of essential human resources while at the same time coordinating globally. Live more locally, plan more globally.

Education can save humanity if it does the Big Rethink (The Resurgence Agenda), followed by the Big Re-Do. This Report tells how education has to strip itself of anachronistic biases and ideas about learning. The Big Rethink must start at zero, at who humans are and how humans learn and have learned for 2.5 million years. Despite good trends in education

based on new awareness of how humans learn, most of education is still stuck in the mud of misunderstanding about human nature and about learning.

We need 21<sup>st</sup> century humans, humans that differ in consciousness regarding society and society's relationship to the earth. That differ in their ideas of success: not only how did I contribute to the GDP (one's duty to make Christmas shopping a "success"), but how did I contribute to the GDE (gross domestic emissions)? That is, how did I contribute to lowering the GDE? And how did I contribute to the localized and sustainable food system in my area? And how active was I in environmental preservation? And, how did I help my family grow in eco-consciousness? And did my paid work help improve society's relationship to the earth?

If we don't have this new consciousness, humans will continue on the path of blissful extinction. Will that path lead to total extinction? I hope not. Here, in this Report, I have offered elements of a blueprint for survival. I write this with hope because of my children, my grandchildren, and my love of humanity.

### **Epilogue -- the Australian 2020 Bushfires**

*Everywhere we drove, we saw signs of the community coming to the aid of its most vulnerable members. In the town of Buchan, Stephen Duffy (known to friends as just Duffy) had traveled from the coast to camp out on farms for weeks, helping farmers get back on their feet. In Cobargo, along the south coast, I met Joe O'Donovan, who had driven hundreds of miles from Sydney with a couple of friends to deliver water tanks using their personal trucks.*

*In Mallacoota, between Sydney and Melbourne, Debbie Preston, who owns what seems like every housing accommodation in the devastated seaside town, moved mountains to get us into the last remaining cabin in the area — the rest had been rented out by volunteers who had come to help rebuild. Even on my flight home, I was surrounded by firefighters and park rangers from California. They had flown to the other side of the globe to lend a hand.*

*Witnessing all of that has left me changed in some way. Despite the despair I feel when I look out my Brooklyn window and see smoke that might have come from Oregon, I'm also hopeful. The challenges — wildfires and much more — burning through our country are enormous, but when we see those in our community suffering, we will do what Australians, Americans, humans do best. We will help. <https://www.nytimes.com/2020/09/18/insider/new-york-times-presents-wildfires.html>*