

The End of Money and the Future of Civilization

New 2024 Edition

Chapter Two

Mega-Crisis to Metamorphosis—Can Civilization Be Saved?

*What the caterpillar calls the end of the world,
The master calls a butterfly.*

—Richard Bach

The world today is facing a number of serious challenges that are unprecedented in recorded human history, both in their scope and their severity. These combine to create what I refer to as the “global multi-dimensional mega-crisis” which seems to be intensifying daily.

Environmentally, we are faced with pollution of land, water, and air; loss of species diversity; depletion of critical raw materials and energy sources like oil and gas; and a climate that seems to be changing, which will have far-reaching effects. But the crisis is not only environmental, but also simultaneously economic, financial, cultural, religious, and political. It seems that all of our institutions, and the structures upon which we depend, are breaking down.

On the geopolitical front the daily news is filled with reports of escalating tensions and actual wars between nations that threaten to explode into another World War that could turn nuclear. As I am writing this, the Middle-East has exploded from a long simmering conflict into a hot war between the state of Israel and radical Palestinian groups that has already resulted in a major humanitarian crisis with tens of thousands of civilian deaths and injuries as the Israeli government takes vengeance for the Hamas raid of October 7, 2023; the war between Russia and Ukraine that began in February 2022 continues with no end in sight despite the obvious hopelessness of a Ukrainian victory; and tensions between the United States and China continue to escalate.

Economically, most countries seem to be in decline, especially those in Western Europe which are burdened with the costs of supplying arms to Ukraine and the loss of access to cheap Russian gas and oil.

The global financial system seems to be approaching another crisis like that of 2008, as both government and private debts accelerate skyward, all but the largest banks look to be ever more shaky, and the cycles between inflation and recession grow more extreme.

Our civilization is experiencing general institutional failure and declining public trust. In the name of “homeland security,” health emergencies, “wars on terror,” and climate change mitigation, Americans and Europeans have surrendered cherished freedoms and long established checks on governmental abuse of power. Our education system fails to educate, our health care system fails to

deliver health, and our criminal justice system fails to deliver justice. Are these things coincidental, or is there some underlying systemic cause that connects them?

Prospects and Prognostication

Prognostication is a hazardous business—something best avoided. Events have a way of confounding the expectations of even the wisest among us. There is a story that a young man once inquired of the powerful banker and financier, J. P. Morgan, what he thought would happen to the stock market. Morgan is said to have replied, “Young man, the market will continue to fluctuate.”

And so it is, not just for the stock market but also in the markets for bonds, commodities, and currencies (foreign exchange). Like the weather, it is hard to predict the day-to-day ups and downs, particularly in light of the fact of market manipulations by the biggest players, and interventions by governments and central banks. Those who play the markets and are not privy to those insider moves will have a hard time coming out ahead of the game. To give an analogy, an occasional hot spell in November (in the northern hemisphere) should not dissuade us from recognizing that colder temperatures are probable as winter sets in.

But in any particular system, despite the inevitability of short-term fluctuations, it may still be possible to discern a general tendency or long-term trend. But even trends sometimes reverse themselves. As spring approaches, temperatures stop falling and begin to rise. We can have confidence in such expectations because we have a solid theory to explain them and a considerable amount of experience that affirms it. The point is that, even though the timing may be impossible to pinpoint, we can often see where we’re headed and where we will eventually arrive at if something does not change. If a heavy smoker has been diagnosed as having lung cancer yet continues to smoke, there is little doubt as to her prospects. So where is civilization headed? Is it a happy prospect? If not, what can be done to change the direction and the probable outcome?

In this chapter I will begin to explain why I believe that the transition to a sustainable steady state economy¹ and, indeed, the very survival of civilization hinge upon the fundamental restructuring of money, banking, and finance. If the money problem is not solved, we can expect that the future will bring ever greater misery, with endless wars for dominance and control of resources, accelerating despoliation of the natural environment, continued erosion of democratic institutions, the imposition of a global neo-feudal society, and the beginning of a new dark age.

Exponential Growth

There is a pattern of growth called *exponential* or *geometric*, which describes growth that does not proceed at a constant rate (called *linear* or *arithmetic*) but at a rate that continually accelerates. The

difference between the two is shown graphically in Figure 2.1 below. There is a fable often used to drive home the concept. In one version, an Oriental king is presented by a courtier with a gift of a chessboard and a set of finely carved chess pieces. The king, being pleased and wishing to reciprocate, asks what the courtier would like in return. The king is surprised when he is asked to provide an amount of rice on each of the following sixty-four days, according to the number of squares on the chess-board—a single grain of rice on the first day, two grains of rice on the second day, four grains of rice on the third square, on the third day, eight grains on the fourth on the fourth day, and so on, each day doubling the amount of the day before. The king readily agrees to this seemingly modest request and orders that the rice be provided accordingly. At first, the amounts are trivially small, but the impossibility of the bargain soon becomes apparent. By the thirty-second day, the cumulative amount required would be 4,294,967,295 grains, or about 100,000 kilograms (220,000 pounds) of rice. By the sixty-fourth day, it would amount to a billion times as much as that—many times the amount of rice that exists in the entire world.²

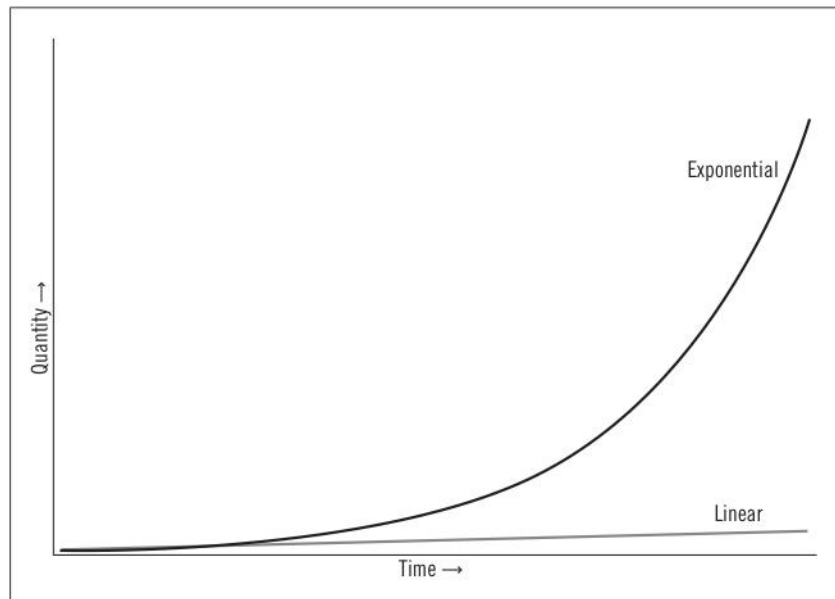


Figure 2.1 Exponential and Linear Growth over Time

Limits to Growth

How this applies to humans and our present global circumstances has been explored by many investigators over the years. Perhaps the most famous is Thomas Malthus for his *Essay on the Principle of Population*, published in 1826. Malthus postulated that human population grows exponentially and that it would eventually outrun food supplies which he saw as having the potential for only arithmetic growth. While humans have, up to now, managed to forestall a general global famine, localized famines have been

numerous throughout history and even in modern times, though most of the recent ones have been the result of political and economic factors rather than problems of production. But advances in agricultural methods and the development of global supply chains have continually managed to keep the wolf from the door.

But there are additional growth factors now coming into play that threaten our modern civilization. These have been explored and reported more recently in, for example, the controversial 1972 book *The Limits to Growth*³ and its 2004 update⁴, which focused specifically on five variables: world population, industrialization, pollution, food production, and resource depletion. Now, in the third decade of the twenty-first century, it appears to me that the critical shortages will be in energy, fresh water, soil fertility, and eventually, food.

It is quite evident that explosive, exponential growth of anything cannot continue indefinitely. Nature amply demonstrates, in insect populations for instance, that such growth must eventually level off or the thing that has been growing exponentially will decline precipitously.⁵ My concerns around these matters were first aroused in the early 1980s as I was beginning to get involved with the School of Living. Mildred Loomis, the then Director of SoL, showed me a book by John Hamaker titled; *The Survival of Civilization*⁶ which suggested that there were three main things that threatened the survival of civilization because each of them was growing exponentially. They are the level of carbon dioxide in the atmosphere, human population, and debt. Of these, the one that stood out for me was the exponential growth of debt because it is the only one that is clearly under direct intentional human control.

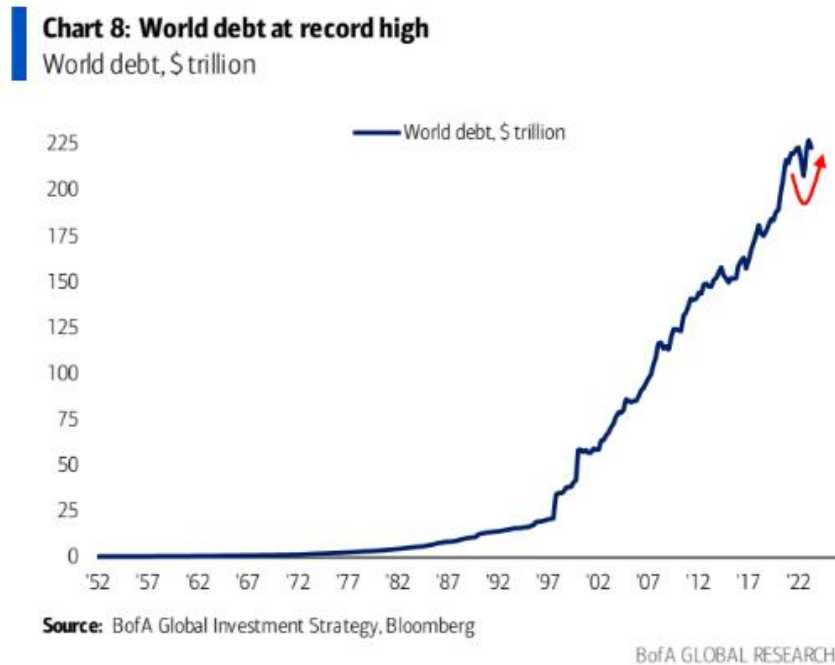
Hamaker argued that the increase in atmospheric CO₂ was the result of a natural climate cycle arising from the depletion of soil fertility, which in turn caused diminished plant growth, which in turn, caused atmospheric warming, which in turn caused increasing cloud cover, which caused a planetary cooling phase to begin bringing on the next ice age. The subsequent glaciations resulted in minerals being scoured from the subsurface causing soil fertility to be replenished, which eventually would reverse the trend and create the next relatively warm interglacial period. He claimed that his theory was supported by the paleontological evidence over hundreds of thousands of years.

I am not qualified to assess the validity of Hamaker's theory about the effects of CO₂ on climate, nor whether human activity has had any significant impact on it. Neither can I say whether the trend of increasing human population will continue, or if it poses a real threat to our survival.

With regard to climate, I am inclined to agree with Prof. Jem Bendell who argues that "environmental disruption is already so severe and self-reinforcing that the breakdown of industrial consumer life is unavoidable."⁷ In his new 2023 book, *Breaking Together*⁸, he argues that, whatever the cause of climate change, there is little that can be done to mitigate it, and that our focus needs

to be on ways to adapt to it without sacrificing our long cherished values of justice, community, and freedom.

But money, on the other hand, is a human contrivance, and the ways in which it is created and managed exert an enormous impact on human behavior, the economy, and our political systems. The money system that has been dominant in the world over the past three centuries has caused the exponential growth of total debt which is now reaching astronomical proportions, as shown in the graph below. It has long been obvious to me that this system is driving the world to destruction because the growth of debt is necessary to keep it going, an argument that I've detailed in my monograph, [The Usury Conjecture](#).⁹ As global debt approaches "critical mass," it is causing extreme instability across the board financially, economically, and politically as competing factions try to cope with an insufficiency of money needed to pay their debts. How this will play out is hard to predict, but it will be profound and unpleasant.



Silver Linings and Opportunities

While the prospects may seem dark and frightening, it should be remembered that crisis also brings opportunities for change that may not have been feasible during calmer times. There have been a great many positive things developing in the shadows and at the edges. We have for the past several decades, been hearing about the end of the era, spiritual awakenings, the emergence of new paradigms, and societal transformation, talk that has also been accompanied by actions on many fronts, including personal growth, self-reliance, financial and economic alternatives, and prototypes

aimed at restructuring of our institutions across the board. Many of these have been elaborated in books such as Paul Hawken's *Blessed Unrest* and *The Next Economy*.¹⁰ Such talk suggests far-reaching changes both in human consciousness and the way we will live in the future.

The late Willis Harman repeatedly asked the questions, "What in the world is it that is trying to happen?" and, "What can, or should, we do to assist it?" He devoted the last part of his life to working with others to discover answers. During the late 1990s, I was privileged to be included in a series of colloquia, dubbed *Peace Building for the 21st Century*, or PB21. During these semi-annual gatherings which extended over a five-year period, a somewhat varying group of 25 to 30 participants were invited to join with Willis and peace activist, Avon Mattison, in that inquiry, to share our diverse perspectives and insights, and to possibly converge upon a common vision and some action plans. It was at one of these gatherings that I met Dee Hock whom I quoted in Chapter 1.¹¹

Another of the remarkable people I met at these gatherings was Dr. Sharif Abdullah. Sharif has sometimes been described as a "transformationist;" he has worked tirelessly to find ways of transforming our world of strife and misery into one of peace and harmony that "works for all," work that he has articulated in his many books, including *Creating a World That Works for All* (1999)¹², and most recently, *Birthing the Nation of Gaia* (2023)¹³ in which he asserts that:

"We are about to have a baby... although many mistake what's happening for dying. We are giving birth to a new society. We are birthing the world's first mature human civilization, planetary in scope....A nation without violence, separation, poverty and war".

And he thinks it will happen quickly and relatively soon, and urges us to prepare by working to change our consciousness, both individually and collectively. He warns that the process is painful and messy, but that it is also necessary and inevitable if humans are to survive. He says, "We are transiting to a new way of thinking about ourselves, a new understanding of the role of humans on the planet."

Is that an impossible dream? If you think we can't, you're right; if you think we can, you're right. It's your choice; it's our choice. Get to know Sharif and his work, and watch his TEDx talk at [Commonway Institute for Societal Transformation](#).

Besides the aforementioned challenges, we are confronted with the consequences, both good and bad, of more recent technological developments like artificial intelligence, genetic engineering, cloning nanotechnology, gain of function experiments aimed mostly at creating deadlier, more virulent bio-weapons, hypersonic missiles, and autonomous drones that are capable of identifying "bad guys" and killing them.

This is a time when far-reaching vision is urgently needed. What is the best word to describe the process we are experiencing—reform, revolution, transformation, emergence, or metamorphosis? Common

reason argues that civilization cannot continue its present course, yet it seems to have a momentum that is unstoppable.

Politicians are wont to propose political solutions to the problems that beset our society; they typically propose policy tweaks and small changes to existing systems, but seldom admit that it is the systems themselves that need to be changed or replaced, nor would they wish to do so because they are typically beholden to the vested interests that created the defective systems in the first place and wish to maintain them.

But as our present multidimensional crisis intensifies it is essential that we look beyond mere policy tweaks and find entirely new ways of performing the functions that the established institutions were ostensibly set up to do. We need to look deeply into causes and effects and deploy new systems and structures that can accomplish at least the following goals:

- Reverse the trends toward ever greater centralization of power and concentration of wealth in the hands of the “super class.”
- Emphasize the personal over the impersonal, rebuild strong communities, restore local control over local affairs, and nurture the emergence of human-scale institutions that serve the needs of people rather than the profit and growth demands of mega-corporations.
- Put an end to unnecessary growth and wasteful production of weapons and junk, and enable the transition to a sustainable, steady state economy and a compassionate and peaceful society.
- Direct our efforts toward serving the common good, enabling the nonviolent resolution of inevitable conflicts among nations and people, and creating conditions that make it possible for everyone to live a dignified life.

There may be no panaceas but it has long been apparent to me that the dysfunctions inherent in the dominant system of money, banking, and finance have been a fundamental cause in inciting behaviors that set persons and nations against one another, and fuel the feverish pursuit of economic growth and “progress.” The reinvention of money is a necessary prerequisite, and the prescriptions that I outline in later chapters are the right kind of medicine for achieving these goals.

Metamorphosis

That our global civilization cannot continue on its current path seems evident, but what comes next? I am at heart an optimist, and as such I believe that the caterpillar’s metamorphosis into the butterfly might offer us an apt analogy for understanding our changing civilization. I believe that the “caterpillar” stage of human evolution is now rapidly coming to an end. The disintegrating caterpillar body cannot be sustained or reconstructed; it can only

proceed with the metamorphic process, which means a complete disintegration as it becomes a resource “soup” that feeds the emergent butterfly. We are on the verge of a complete redesign and rebuilding of all our political, economic, social, and cultural structures—the things that are hard-wired through our laws, institutions, and social norms. The structures we need to create must be consistent with the values we espouse and the outcomes we wish to produce. These both determine and are determined by who we are, how we behave, and how we interact. If we are fortunate, we will succeed in emerging as the new creature that I think humanity was always destined to become.

The Egg, the Caterpillar, and the Butterfly

The physiological processes that we observe in nature may have sociopolitical counterparts. Metamorphosis of the caterpillar into the butterfly may be more than a metaphor; it might actually describe what is happening in the world.¹⁴ It starts with the egg. A mature butterfly will lay a tiny egg on a leaf. Then, when the conditions are right, that egg will hatch. A tiny caterpillar will eat the eggshell and then it will start to feed on the leaf. It might actually eat all of the leaves of the plant and then move on to another plant. Now in the larva stage, the caterpillar has one need—to eat and grow. That’s what caterpillars do. This does not go on indefinitely—but while it is eating, the caterpillar can devastate the host plants. As a gardener, I’ve had ample opportunity to observe this first-hand. In our Tucson garden we had some hot chili pepper plants. One morning my friend Donna came and said, “Look at that plant. All the leaves are gone!” With the plant defoliated, it was easy to spot the culprits—two tomato horn worms; they’re the big green ones, about as big as my thumb, that are commonly found on tomato plants, and, as we discovered, they like pepper plants too. It took only two of them and only one night to eat almost every leaf from that plant. Surprisingly, they ate not only the leaves but also the hot peppers as well. How this compares to the way in which human civilizations consume resources seems pretty evident.

As the caterpillar grows it goes through a process called molting. When the caterpillar grows too large for its skin, the skin breaks open, and the caterpillar crawls out with a new skin. The social and political revolutions of the past few hundred years might be analogous to the molting process. They represented abrupt changes for societies but not the all-encompassing transformative change that the present circumstances seem to require. This molting process will happen four or five times, but at some point the caterpillar stops eating and stops growing, because nothing can grow forever. Yet, economists and politicians seem to believe otherwise.

So what does the caterpillar do then? It attaches itself to a twig, and its skin then hardens into a chrysalis. And what happens in the next

phase, called the pupa stage, seems almost miraculous. From the outside, it appears that nothing is happening, but in fact a lot is going on inside the shell. The caterpillar body disintegrates, turning into a nutrient "soup." But in the caterpillar body there are, and there were from the very beginning, what are called "imaginal buds" or "imaginal disks." These are clusters of cells that contain the program of the emergent butterfly. These imaginal buds were in the caterpillar body all along, but they were dormant through the larva stage. Now they become active and start to grow and to play out the butterfly program. This may take a period of days or even weeks, and when conditions are right, the chrysalis breaks open and the butterfly crawls out, spreads its wings, and flies away. This is the imago stage, the mature adult butterfly. The adult butterfly behavior is quite distinct from that of the caterpillar. While the caterpillar devours plants and appears to be terribly destructive, the butterfly flies around, sipping nectar from blossoms and pollinating plants in the process; it engages in sex and the females lay eggs to begin the cycle anew.

Now it is tempting to be judgmental about the caterpillar for its destructive behavior because it often can devastate crops that we depend upon for food. But as destructive as the caterpillar may seem, it performs a necessary function. It accumulates the nutrients and prepares the "space" necessary for the butterfly to develop and emerge. And remember that chili plant? It sprouted new leaves; it recovered. We lost some peppers, but only on that one plant, and we had a couple others that were not damaged at all. So in the case of human and civilizational emergence, maybe that is a stage that we have had to go through.

Does the butterfly compete with the caterpillar? Does metamorphosis involve a battle for dominance? Is it a revolution? The picture is not entirely clear, but evolution biologist and futurist, Elisabet Sahtouris cites recent discoveries that suggest that the process may not be quite as peaceful as had been supposed. Of the imaginal disks, she says,

Apparently the caterpillar's immune system battles the imaginal cells while it can, perhaps strengthening them in the process. But as the disks link together, the caterpillar's immune system fails and the butterfly in formation is nourished on the soupy meltdown of the self-digested caterpillar. It took a long time for biologists to understand that the butterfly has its own unique genome, carried by the caterpillar, inherited from ancient butterflies who acquired them long ago in evolution ([as described in] Margulis & Sagan, *Acquiring Genomes*, 2002).¹⁵ If we see ourselves as imaginal discs or cells working to build the butterfly of a better world, we will understand that we are launching a new 'genome' of beliefs, values and practices to replace that of the current unsustainable system. We will also see how

important it is to link with each other in the effort, to recognize how many different kinds of imaginal cells it will take to build a butterfly with all its capabilities and colors.¹⁶

True, we are voraciously consuming resources—it looks like we are destroying the planet, and if we continue we undoubtedly will. But I think our collective consciousness is changing. We are becoming aware of the limits and are reaching that part of our evolutionary program that says, “Stop!”

Get With the Program

As we reach the end of our caterpillar stage of civilizational evolution, many are waking up to the butterfly program and are diligently working to bring about the necessary changes to transform this world from one of strife, violence, injustice, inequity, and despotism to one of peace, harmony, justice, equity, and freedom. It appears that the imaginal buds are now beginning to stimulate one another into more intense activity that will result in what Dr. Laurence Victor calls a “synergistic emergent eruption which will be as powerfully positive as its nuclear winter antipode is negative.” There is no exclusive “butterfly club,” but an open process in which everyone can find their own role in their own time. We’re being nourished by the accumulated resources of a dying civilization while we find ways to build the new. It is a process in which we rethink, reorganize, and restructure—first reducing our dependence upon the dominant structures, next reorganizing ourselves into mutually supportive clusters or affinity groups, then creating new structures appropriate to serving the needs of both our affiliate groups and the common good.

Making Connections

Assisting the “imaginal cells” in discovering one another, there have been a great many networkers like Stan Pokras and Sergio Lub. I first met Stan in the 1980s through Action Linkage, a networking initiative conceived by futurist Robert Theobald and actuated under the leadership of Ann Weiser. In those pre-internet days without email and teleconferencing, we relied upon snail-mail, telephone land lines, and frequent gatherings for our communications, discussions, and organizing activities. Stan has been connecting people and enabling information sharing right up to the present time with a people’s version of Wikipedia called [Other Networks](#).

I first met Sergio Lub in the late 1990s at a community currencies conference that was organized by Carol Brouillet. Sergio was born of Russian parents in Argentina, and as a young man he immigrated to the United States where he became a successful jewelry maker and entrepreneur and raised a family; along with his wife, his son and daughter now work with him in the family business. Sergio and I became good friends; we’ve travelled together to various parts of the world and worked together on the “money problem.” Sergio created

a social network, long before there was a Facebook or Twitter. His [Friendly Favors](#)¹⁷ platform, besides connecting people, includes a way of trading “favours.”

Organizing For Action

There are already many notable examples of social organizing beginning in local communities and moving forward globally. I’ve been following the work of Richard Flyer for many years and previously wrote about his Conscious Community Network that he started in 2002 in northern Nevada. What attracted me to Richard’s work was his observations that,

...people have a drive, for authentic connection, as basic as needing food and water [which] has become harder to realize in a globalized “top down” society and economy—so people have been forming new associations where they can get this felt need met. In every sector of society (business; political; religious; and social service) and all over the planet, people are forming small groups to get back to the basics of our common humanity and connect with one another. The future lies with groups like this, networked in a myriad of ways, and within all parts of society. We are now seeing (especially with our energy crisis) the decline of “bigger is better” and the emergence of “small is beautiful” in local communities—like millions of blooming flowers all over the planet within the broken-hearted world that we live in.... The change that is happening goes way beyond economic and social—it is actually a spiritual rebirth showing signs of becoming visible—the emergence of a new society from within the old—and each of us, whether we know it consciously or not, has a vital role in being midwives to its birth.

Now, based on what he has learned from that previous experience, Richard has embarked upon a new effort he calls [Symbiotic Culture](#) to help the emergence of a unifying worldview and to organize people of diverse cultures, belief systems, and political affiliations into effective action-oriented communities. He intends to “provide community tools to transform our communities into highly connective, supportive, thriving, and resilient local economies.” He will be doing this on [Substack](#), first, to share his upcoming book, *Birthing the Symbiotic Age: An Ancient Blueprint for a New Creation*, which launched in early December 2023 on [Substack](#) as a weekly series, and second, to create a learning and practicing community, both online and face-to-face. This work will proceed by means of articles, videos, and discussion. You may want to start by reading his article, [Sri Lanka’s untold story of resilience: Sarvodaya’s pathway can work anywhere](#), on Shareable.net.

As I will show in subsequent chapters, I have focused my attention primarily on developing solutions that are community-based,

entrepreneurial, and innovative, and focused on bottom-up organization and voluntary association. As one sage once put it, “If the people lead, the leaders will follow.”

¹ A steady state economy is one that does not require the consumption of increasing quantities of physical resources over time, while still producing enough of the right kinds of products and services to sustain human societies over the long term. Implicit in this definition is adequate distribution that matches supplies with basic needs, a focus on increasing quality of life instead of increasing quantity of material consumption, and improved resource productivity, i.e., increased efficiency in the use of physical resources whereby greater value is derived from smaller amounts of material used.

² The number of grains accumulated by day sixty-four would be 18,446,744,073,709,551,615. These figures come from a Wikipedia entry at https://en.wikipedia.org/wiki/Wheat_and_chessboard_problem. Accessed 14 November 2023

³ Donella H. Meadows, Dennis L. Meadows, Jørgen Randers, and William W. Behrens III, *The Limits to Growth*.

⁴ <https://www.chelseagreen.com/product/limits-to-growth/>

⁵ See, for example, Janine M. Benyus, *Biomimicry: Innovation Inspired by Nature* for a discussion of species that destroy their own habitats.

⁶ John D. Hamaker and Donald A. Weaver, *The Survival of Civilization*.

⁷ Personal correspondence, 2023/8/11

⁸ [Breaking Together](#)

⁹ For a full discussion of how and why the present money system forces debts to grow ever faster, see my monograph, [The Usury Conjecture](#), on my website, beyondmoney.net.

¹⁰ [Paul Hawken](#)

¹¹ This series of colloquia called “Peace building for the 21st Century” was initiated by Willis Harman in collaboration with Avon Mattison of Pathways to Peace, and convened twice a year from 1996 to 2000, mostly at the Fetzer Institute campus in Michigan.

¹² Abdullah, Sharif, *Creating a World That Works for All*. San Francisco: Berrett-Koehler Publishers, 1999.

¹³ Abdullah, Sharif, *Birthing the Nation of Gaia*. Independently Published, 2023

¹⁴ I was first introduced to this idea by one of my brilliant colleagues in Tucson, Dr. Laurence Victor; then later on by another friend, Norrie Huddle in her book called *Butterfly*; and more recently by evolutionary biologist Elisabet Sahtouris.

¹⁵ [Acquiring Genomes: A Theory Of The Origin Of Species](#).

¹⁶ Personal correspondence from Elisabet Sahtouris, March 22, 2009.

¹⁷ https://favors.org/display/contact_host.php?login_group=FF. I’ve long considered Sergio Lub to be one of the world’s greatest networkers and one of the most generous people I’ve ever met.